

ZEPHYR



Environment
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Atmospheric Environment Service

SEPTEMBER/OCTOBER 1986

CASP six months later

The fierce late winter storm period off the Atlantic coast is now long past and the many scientists who had brought along sophisticated measuring gear in order to participate in the Canadian Atlantic Storm project have packed up and returned to their home bases at AES or elsewhere. The data are in, but as of now results are still being analyzed. Some scientists say they need anything from 18 months to three years before detailed scientific reports on the largest storm probe project in 50 years are written and published.

Meanwhile, as a tribute to the many AES participants, Zephyr is publishing some tentative preliminary observations. Freelancer Jack Gubbins contributes an outsider's look at AES/CASP. We were also glad to receive from Dr. Peter Taylor a humorous report of boundary layer activities connected with CASP that he supervised on windy Sable Island. We obtained a short report from Lewis Poulin (Experimental Studies, Downsview) on one of the post-CASP workshops and a wide overview on the whole program from Rose Sirois, DOE Regional Information Officer in Dartmouth Nova Scotia.

Please see pages 4-5 for stories and pictures on CASP.

**CASP was ideal
project for AES
scientists**

See page 4



Radiosondes were launched from the ship *Gadus Atlantica* over the Gulf Stream area during the project. The ship is operated by the Department of Fisheries and Oceans and the sondes were launched by AES. Very heavy seas often occurred (as shown).

Doreen Rocco receives AES Achievement Award



ADMA Howard Ferguson presents Doreen Rocco with her AES Achievement Award.

Doreen Rocco has received an AES Achievement Award for bringing two computer systems on-line on connection with material management at AES, Administration Branch, Downsview. In presenting the award at a ceremony in the Auditorium in September ADMA, Howard Ferguson pointed out that Ms. Rocco with no previous computer experience, had brought the Material-In-Use (MIU) and Stores Information Management Systems (SIMS) systems on-line. "She worked at a much higher level of expertise than her position demanded, worked long hours without thought or request for monetary compensation and was completely loyal to managerial objectives" he added.

Ms. Rocco joined AES in 1974 as a distribution clerk and by 1978 she had reached a CR4 level. By 1982 she had completed level II of the material management course sponsored by the International Material Management Society.

The citation adds that Ms. Rocco spent long hours, much of the time her own, testing, debugging and diagnosing problems for the implementation of the MIU and SIMS systems. She also developed the first users' manual for the MIU and trained regional staff.

Canada



This time, it's no misprint. They really are 7 km hailstones.

(A filler in our last issue mentioning the diameter of hailstones in Montreal in 1969 should have read 7 cm not 7 km.)

AES and Parks share Environment Day

The Sault Ste. Marie weather office didn't let Environment Day, June 5, pass by uncelebrated. Open House was held June 3 and 50 visitors showed up. The public was informed about the Open House on the Evening News, June 2, over both local TV stations. Environment Day was also the subject of several radio shows on the 3rd. Visitors to Open House were toured, shown static displays and working models, and informed in small groups about such technology as radar and weather satellites. AES staff on duty were OIC Ron Houghton, Terry Smith and Wayne Whittaker.

On Environment Day itself, activities were shared by AES and Environment Canada Parks headed by Ron Houghton, AES, and

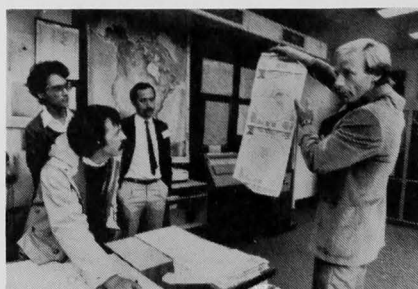
Donna Rychkman, Parks. Special guests were Nancy Cutler, Chief of Weather Services, Ontario Region, and Joan Masterton, Management Orientation Program, Ontario Region. Events included static displays and working models under a large tent, and tours of the Canal area. Five Parks personnel were on duty, plus Messrs. Houghton, Simard, Whittaker and Sale of AES. Many weather service announcements were broadcast via all the media — radio, newspaper, TV Weather, and Cable TV. 70 visitors attended the tent display.

Soo Weather Office and Parks are planning a shared two-day event next year too.

Quebec media meeting

Surprise, radical change of attitude, newfound enthusiasm for meteorology, discovery of the major role in the media play: these are some of the phrases that could be used to describe the reaction of the twenty or so weather presenters and journalists who came to the Quebec Weather Office on September 10. The meeting — the third to be held in Quebec, and certainly not the last — elicited much praise from the media people present. In our picture, Laurent Foucreault describes the work of the

Quebec Weather Office, of which he is acting head.



Reorganization of Weather Services Directorate

A major reorganization of Weather Services Directorate Headquarters (WSDHQ) was implemented on April 1, 1986. The most significant change within WSDHQ is the change from program lines to functional lines based on audit recommendations. Functional responsibility for data acquisition matters was given to Central Services Directorate's Data Acquisition Systems Branch. The WSDHQ reorganization caused the rewriting of virtually every job description and the subsequent staffing of over 50 positions. An Ad Hoc Union Management Consultation Committee was formed to deal specifically with the many issues that arose. The new organization is smaller by several positions but all employees have since been placed and no one has been laid off.

The new organization has now been functioning for six months and many transitional problems have been resolved. A very positive note about the reorganization is the way in which staff have pulled together and responded to the challenge of new jobs. As Dr. Ian Rutherford, the Director General of WSD notes,

"The staff have responded to the reorganization in a highly professional manner and I have been extremely impressed with the quality of their work and the enthusiasm which they have brought to their new jobs."

October: In 1953, the US Weather Service began to use women's names to designate tropical storms but in 1979 adopted men's and women's names, alternately. Preference is for short, distinctive names because they are less prone to error. Name lists are repeated every 5 years except for those retired because of infamy.

ZEPHYR

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Two new directors general named



Gordon Shimizu

Deputy Minister, G.A. Sainte-Marie has announced two senior appointments within the service, those of Mr. Gordon Shimizu and Mr. Jim McCulloch. They are effective November 3, 1986.

Gordon Shimizu has been appointed director general, Central Services Directorate, AES, Downsview. Since 1982 he has occupied the position of Director General, Policy, Planning and Assessment Directorate, AES, Hull, Quebec and before that he held the post of Director, Program Development and Evaluation Branch since 1977.

Born in British Columbia, Mr. Shimizu completed undergraduate studies in Honours



Jim McCulloch

Physics at McMaster University in 1957 and received a Master's degree in Meteorology from the University of Toronto the following year. In 1976-77 he received a diploma in international management at le Centre d'études industrielles in Geneva, Switzerland.

Mr. Shimizu spent the first 12 years of his career in Montreal in a variety of positions in operational meteorology — in forecast offices and the Canadian Meteorological Centre. After completing some assignments with the Management Orientation Program, he was appointed Officer-in-Charge of the Atlantic/Maritimes Weather Office, Halifax in 1973. In 1975 he acted as AES Regional Director, Atlantic Region.

In 1977 Mr. Shimizu returned from Geneva to Downsview as Chief of the Computers and Communications Division of Field Services Directorate. Later that year he moved to his position in Hull.

Jim McCulloch has been appointed director general of the Canadian Climate Centre. Since 1982 he has been Director General of Central Services Directorate, located at AES Downsview.

Mr. McCulloch's new assignment will be his third as a Director General. Before heading Central Services Directorate he was Director General of Field Services Directorate between 1978 and 1982. For three years before that he held the post of Regional Director, AES Atlantic Region.

Mr. McCulloch was previously associated with the Canadian Climate Centre between 1967 and 1975 when he served as Head of Lakes and Marine Applications. He led a group of specialists providing consultation to operational elements of AES and to the public as the weather and climate impacts of lakes and oceans.

Joining the weather service as a duty forecaster and shift supervisor at Goose Bay, Labrador in 1953, Mr. McCulloch later became a research meteorologist with responsibilities in stratospheric ozone and waves on the Great Lakes.

Born in Hamilton, Ontario, Mr. McCulloch obtained his B.Sc. in Mathematics and Physics from McMaster University in 1952 and his M.A. in Meteorology from the University of Toronto in 1953.

He is married with three grown children.

Indian Head Farm completes a century of weather observations

AES presented a Longevity Award to Agriculture Canada's Indian Head Experimental Farm (Saskatchewan) during centennial celebrations on July 15. The award was in recognition of over 100 years of effort in observing daily weather at the site. Dr. Ed LeRoux, Assistant Deputy Minister, Agriculture Canada accepted the award on behalf of Agriculture Canada. In presenting the Award, Mike Balshaw, Director, AES Central Region, noted significant aspects of long term climate records.

He recalled that initial records date back to 1885, 20 years before the birth of Saskatchewan. It was the year of the second Riel Rebellion. Confederation was only nine years old and the CPR had yet to be completed.

— within Saskatchewan only 14 sites are identified as having weather records dating back to 1885 or earlier. Today only seven of those are still in operation. However, a network of over 225 stations has grown to join them. Most are operated by volunteers whose measurements add detail to our involving knowledge of Saskatchewan's climate.

— the more than 36,000 daily climate observations taken at Indian Head help provide information for understanding the natural and agricultural environment of the area. Average temperatures have increased by almost 2°C, whether due to the much discussed "greenhouse effect" or to other causes. Perhaps of more significance to agriculture is the high degree of year-to-year variability shown in the precipitation measurements. 1924 was almost three times as wet (661 mm) as the drought years of 1931 (233 mm) and 1961 (225 mm).

Mr. Balshaw concluded, "Success or failure in agricultural production cannot be properly assessed without such vital information on agroclimatic conditions. Environment Canada gratefully acknowledges the ongoing efforts made by any individual Canada Agriculture employees who have been directly involved in this historic weather program. It is hoped that the continued co-operation of Agriculture Canada and its staff, in the future will add to the valuable and unique record thus far accumulated."



Mike Balshaw, director, AES Central Region (left) congratulates Dr. Ed LeRoux, Assistant Deputy Minister, Agriculture Canada, on the occasion of the Indian Head farm centennial.

October 6, 1604: "Snow fell early at Sainte-Croix (NB) as Champlain and his weak band of French settlers prepared to spend winter . . . which turned out to be exceedingly severe".

CASP was ideal project for AES scientists

At the end of last January, a team of AES meteorological research scientists flew down to Halifax and checked into Dartmouth's Concorde Inn. It was led by Drs. George Isaac and Ron Stewart of Downsview's Cloud Physics Research Division (ARPP). This team was the core of "probably the largest ocean storm project in 50 years". The Project was called CASP — The Canadian Atlantic Storms Program — and it lasted for six weeks, until mid-March.

February and March are the stormiest months of the year along Canada's east coast. These storms — called extra-tropical storms — are frequent and violent. CASP encountered sixteen such storms during its six week schedule — an average of one every two to three days. They damage and disrupt industrial, commercial, and social life in the Maritimes and Newfoundland and hinder the region's economic development. The collapse of the off-shore oil rig **Ocean Ranger** was caused by an extra-tropical storm, and the drama of that epic event concentrated national attention on dispatch teams of research scientists to investigate and describe the nature of mesoscale storms. It was certainly beyond the capability of such up-to-date weather monitoring centres as the Maritime and Newfoundland Weather Centres, thus the arrival of Drs. Isaac and Stewart and their AES teams at the Concorde Inn.

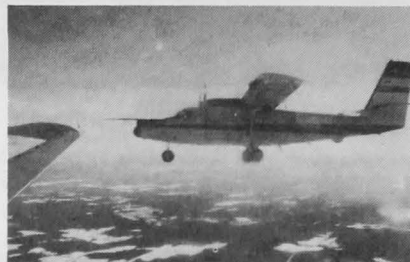
CASP was organized into two sub-groups — AES, investigating atmospheric phenomena, and the Bedford Institute of Oceanography (BIO) investigating surface phenomena such as wave heights in stormy seas, the migration of icebergs and shifting sediment. Dr. Alex Chisholm of AES (ARPD) and Dr. A.R. Longhurst of BIO had co-chaired the Steering Committee that organized CASP.

The Steering Committee membership also included representatives of Petro-Can, Mobile Oil & other Offshore Operators, the Eastern Fisherman's Federation, Nova Scotia Trawlers, as well as a representative from GALE (Genesis of Atlantic Lows Experiment), a large-scale meteorological project being conducted simultaneously by the United States along their Atlantic seaboard.

CASP was an innovative large-scale project, without precedent. To some extent it meshed with GALE, research into the structure and migration of extra-tropical storms covering the entire length of the Atlantic seaboard. AES was the core of CASP but scientists from universities also contributed — along with those from several other institutions. This article is just a thumbnail sketch of CASP, seen largely from the AES viewpoint.

AES's assignment was to bring in a wealth of new data about mesoscale storms. Dr. Chisholm estimated that overall data increased by one third to one half when compared with mesoscale data previously obtained on synoptic scale storms. This increase was obtained mainly by stepping up observations; for example, a third weather

radar was installed on Sable Island and radiosonde balloons were sent up every three hours instead of twice a day and their areal density was doubled. AES had a DC3 and a Twin Otter flying research laboratory at its disposal. Dr. Stewart, for one, with a crew of two pilots, a flight engineer, and an AES technician, flew both aircraft, loaded with instrumentation, into the centre of storms, measuring wind speeds, heat, air pressure, rain, sleet or ice particles and analysed their chemical composition.



This picture was taken from the Canada Centre for Remote Sensing's DC-3 and shows the Twin Otter owned by the National Aeronautical Establishment of the National Research Council for Canada. A number of probes for measuring atmospheric wind, temperatures, pressure, and particle characteristics were mounted on the aircraft.

These flights were "nervy". The aircraft were violently buffeted about and their wings collected thick coverings of ice. It wasn't scheduled in advance just where the aircraft would touch down again. Flights were planned for roughly one to four hours duration but once up among the dense cloud, Dr. Stewart could direct the aircraft in pursuit of new data.

CASP benefitted tremendously from the co-operation of permanent AES installations along the east coast. At that time of year, AES's ice reconnaissance aircraft are up over the Gulf of St. Lawrence and its ice observers conducted special observations and filled out special data forms for CASP. Several years will be needed to analyse all the new data collected by CASP but some were immediately effective and produced quite a sensation in the Maritimes Weather Centre. "It was the most interesting time we've ever had in our careers", Dr. Chisholm, heard several MWC people say.

CASP had more than just a data collecting aspect for AES. Extra-tropical storms are a way of life for meteorologists in temperate climates. However, much of what is known about them came from research in the 1930's without the benefit of radar and satellite data. CASP concentrated on the detailed — or mesoscale structure of such storms, since it is becoming more evident that the precipitation bands, rain/snow boundaries and high winds associated with such storms are the result of the dynamic and thermodynamic structure of such storms. These severe weather phenomena are important to the public, the fishing industry and the offshore oil industry.

To forecast such phenomena more accurately requires an understanding of the physics — and ultimately numerical models which will reproduce such physics in a predictive mode. CASP is a large step in this direction.

It's obvious both AES and BIO put a great deal of effort into CASP. But will the project improve Atlantic weather forecasts? The entire east coast population certainly hopes so and AES is optimistic that it eventually will. Many scientists both in and out of AES are already assigned to the task of analysing data. Thanks to CASP the meteorology of extra-tropical storms will be much better understood. But these storms have a habit of sweeping mightily eastward or northward, and changing their mesoscale structure. (A rain drop off Cape Hatteras will be an ice particle off Newfoundland) — This means AES scientists will have to build a mesoscale model for extra-tropical storms — one that is at least consistent for offshore eastern Canada. If these storms are structurally peculiar over the Maritimes, then they should have a describable structure, one of improved predictability. In other words, weather forecasts will definitely improve. Predicting **when** rain will turn to freezing rain or snow will become less general and more specific, is clearly a great improvement.

by Jack Gubbins

Listen to this — Buoy and Gales...

Thirty six scientists gathered at Downsview headquarters on June 16-17 to participate in the first CASP ANALYSIS WORKSHOP. It provided an opportunity for the project participants to present preliminary results as well as fine tune the research objectives.

The first day involved reviewing CASP's data acquisition techniques, and proposed data management plans. Walter Strapp of AES, and Carl Anderson of the Bedford Institute of Oceanography are responsible for CASP's special data sets.

A brief CASP seminar was presented in the AES auditorium for AES employees. Dr. George Isaac, the AES-CASP program manager, talked about the various instruments used in CASP. As well he presented preliminary conclusions such as: that classical frontal theories are inadequate when it comes to explaining CASP's observations, that more mesoscale training is required for meteorologists, and that CASP's experimental weather office provided valuable insights into providing operational meteorologists with additional real-time weather information.

Carl Anderson, the Bedford Institute of Oceanography CASP project leader, presented the CASP's oceanographical input. "Data

Continued right

The "Joys" of CASP



Part of the AES Mesonet team is seen on Sable Island, N.S. during the CASP experiment. They are, left to right, John Deary, AES Downsview; Paul Workman, AES Sable Island; Jim Salmon, contractor, AES Downsview; Yves Sivret, AES Sable Island and Seve Derco, AES Downsview.

The plan was to develop, deploy, and service mesoscale networks of automatic, surface weather stations on Sable Island and in the Halifax area during the CASP '86 field program. By November 1985 most of the sites had been chosen (17 near Halifax and nine on Sable Island) and a prototype station had been designed and assembled. Before the ground froze we somehow had to get everything shipped and installed for the January 15th start date. None of us got too much time off over Christmas but January 2, John Deary set out in our trusty (or so we thought) van, plus trailer and on January 6 the rest of us flew down to start a hectic ten days of station installation.

In the end almost all of our stations were up and running in time and performed well. It wasn't all plain sailing however, as the following notes on Sable Island will attest.

Jan. 8th Our main means of transport — that station tractor — died. The lower sections of several posts, which had been installed in November,

Continued

collection from a large concentration of wave buoys makes our data set very unique indeed" he commented. There appears to be enough data now to begin to relate surface winds, ocean currents, wave height, ambient noise at ocean floor, and sediment transport. He displayed a striking example of data showing the reverseal of a Nova Scotian coastal ocean current during the 85-86 winter "storm of the century".

On the workshop's second day, enthusiasm prevailed as scientists presented preliminary observations from sixteen intensive observation periods collected during CASP.

The second CASP workshop is scheduled for November, 1986 in Halifax.

by Lewis Poulin

seem to be bent. It must be the horses. They have also sunk into the sand by about a foot — we need larger base plates.

Jan. 9th Started building corrals around the towers to keep out the horses. Installed one station but with winds of about 50 km/hr and wet snow/rain it wasn't easy.

Jan. 11th Seals congregating around station 21 — will this be a problem?

Jan. 23rd Seal pups at station 21 — they may look cute but they have sharp teeth and a mean disposition — especially when dragged away from the station so that we can service it. They love getting in under the precipitation gauge stand.

Feb. 3rd ATC trike riding lessons, Peter Taylor fell off twice on "Main Street", luckily at low speed. One of our trikes is using a litre of oil every two days — sounds like trouble ahead.

Feb. 9th Sunday — a quiet day, time for a pleasant stroll along the beach in the afternoon sun.

Feb. 25th Lake Wallace is growing and access to some stations is getting difficult — either drive through inches of water on the trikes or hike over 1 km of sand, a tricky decision.

Mar. 6th Conscripted into Sable Island ditch digging crew in a valiant (and successful) attempt to drain Lake Wallace. My back will never be the same, must check my job description! At least the plane should now have somewhere to land.

Mar. 14th Rented ATC trike died — at the very end of the island. Will U-Haul come and fix it? A cold, wet, windy and rather miserable day.

Despite these, and many other problems it didn't turn out too badly for the surface mesonet teams. Sable Island really is a rather special place — even in February and we are all eager to go back in February 1989 — the planned delivery date for ERICE, daughter of CASP.

by Peter Taylor



Dr. Peter Taylor, head of boundary layer activities in connection with CASP, is seen here with his "trike" being investigated by young seal pups.

New Radiosonde Testing

Improvement of the ADRES system of radiosonde weather balloon technology is in an advanced experimental state, according to Gerry Klein of Information Technology Section (ACSL). Two new systems are being tested — one system produced by the Vaisala Company of Finland and the other by Beukers, now being produced by VIZ in Philadelphia.

A year or so ago, Zephyr published an article entitled "A Day in the Life of an Upper Air Technician" in which ADRES was described as "contained within a domed roof and consisting of various pieces of electronic equipment — microcomputer, paper-tape reader punch, printing terminal, equipment rack". In both the new systems, the domed roof building is not needed and can be done



Tony Hilton checks out the Vaisala radiosonde system at AES Downsview Headquarters.

away with. Vaisala and Beukers can be installed spontaneously anywhere — in Gerry Klein's office even. Furthermore, the bulk of the ADRES electronic equipment is in the case of both Vaisala and Beukers reduced in size almost on the scale of miniaturization.

Both new systems are fully automated. ADRES is not. In ADRES, after the balloon has been released, the technician must sit in at the electronic console "and feed significant radiosonde information into the computer. He may have to delete or modify information already in the computer". In the new systems, the technician fills and releases his balloon more or less the same as in ADRES — but then nothing more is required of him until the flight ends two hours later.

Vaisala has been employed with great success for the past several years in ASAP — installed on board ship. The system is so compact it can be lifted on or off a ship with no difficulty and can easily be transferred from one ship to another according to its voyage. It worked so well in ASAP that AES decided to try it on land too. Vaisala is being tested in Prince George, BC, and Gerry has been testing both systems — for about two years — at Downsview. Of course, Gerry has ADRES too, so the two new systems can be measured by ADRES as a standard.

In both new systems, there is some compacting and improvement of the radiosonde instrument itself. In Beukers, a technician can electronically intervene during the flight but Vaisala is inflexibly automated.

It has not been decided which of the two new systems AES will opt for. In fact, it has yet to be decided if either of them will replace ADRES.

FUTURE FORUM

What do you think of Telidon Weather?

For three years now, Quebecers have had the benefit of a bilingual weather information service, complete with full-colour graphics, through Telidon. This revolutionary weather-reporting system, which had an initial clientele of 600,000, is now used by over one million people, all of them cable subscribers. In the near future, twenty-five more cable companies in Quebec will be offering this service, produced exclusively by the Quebec Meteorological Centre. The service consists essentially of a visual presentation that takes seven minutes to go through a complete cycle.

In the morning and early evening, this is supplemented by a short minute-and-a-half segment. This Environment Canada service, using Telidon technology, is on the air twenty-four hours a day and gives all the latest weather information.

The following is a cross-section of opinions expressed by AES employees working in Quebec Region. Please note that at the time of their interviews some AES staff may not have been aware of the full extent of Telidon weather services throughout the region.

Paul-André Renaud



**Presentation Specialist,
Sherbrooke Weather Office**

Telidon is a very interesting way of reaching the public. From what I have seen of the service, you have to wait through the programming cycle until it reaches the part you want, but it does have the advantage of always being there when you need it.

The disadvantage with the present content is probably that some of the information given, such as forecasts and data for other provinces, and even other countries, is not particularly relevant.

It would be a good idea to make sure that the programming is what most viewers want. In my opinion, people mainly want to know what the weather will be like in their area."

In the future, I could see programming offering more than the public forecasts. For example, there might be a network like the one for Weatheradio. I would also like to know whether or not this technology could be used to develop a more effective warning system.

Suzanne Bélisle



Secretary, Training

This is an excellent way of giving the weather. The graphics are well done, and the information is presented clearly.

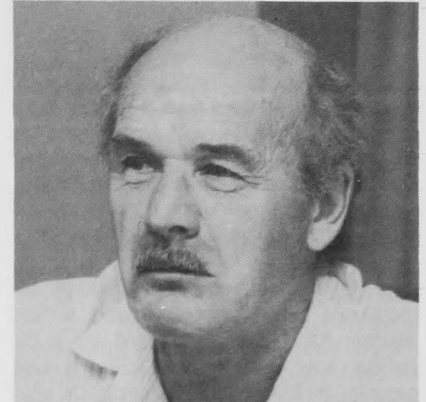
I only look at it once in a while, the days we plan to play golf or go skiing. However, I have noticed that we often have to wait quite a while for the information we want.

They should go from one report to the next more quickly, and it would probably be a good idea to eliminate duplication of information.

For example, is there any point in giving the same information for Montreal, Ottawa and Quebec City in two different reports (the regional one and the national one)?

Telidon is a concept that, in my opinion, really meets people's needs. Personally, however, I prefer to listen to the radio. Since the announcers emphasize our local forecasts, it's faster and more relevant.

Maurice Plante



Communicator, CMC

Pleasing presentation, good principle, opens up new avenues for broadcasting the weather: that's how I see Telidon.

The thing I find exciting is that all I have to do is press a button on my channel selector to have immediate access to weather data.

Telidon is my preferred source of information. When the radio announcers start to drive me crazy with their chatter about the weather, I consult Telidon. I know I'm getting accurate information.

One of the great advantages of the system is that it tells you right away whether there's a weather watch or warning. You can't say the same about the local reports, except when they give the summary at the end of the day.

I think it's a shame that Telidon is available only to cable subscribers. They should arrange for everyone to be able to receive it.

I'm anxious for the day when I can call up any weather information I want on the screen. That's where the technology is going.

Lorraine Provost



Secretary, Regional Office

Since we aren't cable subscribers, we don't have access to Telidon, but whenever I have the chance, when I'm at a friend's or relative's, I turn it on.

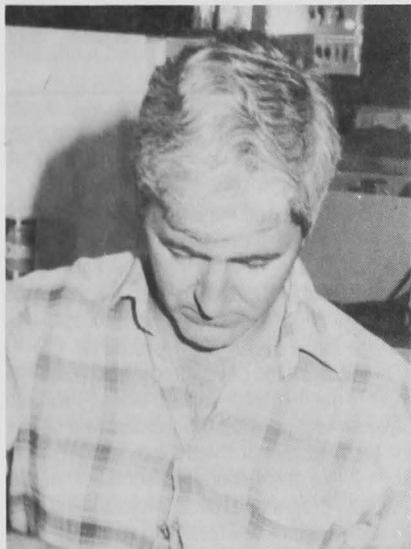
In my opinion, one of the main features of Telidon is that it gives accurate weather information, without any changes by the media.

With the Telidon system, you know that the report isn't being shortened or padded, as is often done by the radio announcers. It's a product delivered directly to the people, with all the advantages of a visual format.

In the future, I would like to see us be able to receive it with an antenna and have individual access to the information of our choice. It might also be worthwhile to have audio messages in addition to the images.

At the beginning of the cycle, the programmers could also include certain references, such as the source of the information and telephone numbers for viewers to call.

Marc-André Morneau



Technician, Data Acquisition

I haven't had much of a chance to see the Telidon weather service, because where I used to live we didn't have cable.

From what I've seen so far, it seems to be a good idea. Personally, I prefer to get the forecast from the radio or the TV. Out of habit? Maybe.

Actually, I prefer the media, because I get what I want right away and they basically stress our local weather.

My twelve-year-old daughter is really interested in Telidon. She often says things like: 'Look, Daddy, there's a 70% probability of precipitation tomorrow. It won't be a nice day.'

I have to travel a great deal in my work, and I know that in the United States there's a channel devoted solely to the weather, presented by a live announcer.

In the future, I would expect them to adopt a formula that would bring these two elements together: Telidon technology and a live announcer.

Diane McDuff



Clerk, Administration

Telidon is a good idea, but, in my opinion, it's an expensive gadget that's really of interest only to those who are keen on knowing all about the weather.

In the present context of cost recovery and spending cuts, I honestly wonder whether we shouldn't take a good look at the usefulness of this service.

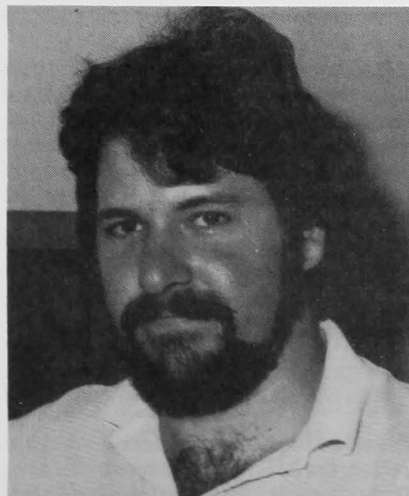
Telidon would really be an asset if our forecasts were more accurate and if the updates appeared more quickly on the screen. I feel the present situation merely helps to perpetuate a rather negative image of our service.*

I feel it would be worthwhile to require cable companies to televise our complete package of daily programming and to have a permanent schedule showing the time each forecast will be broadcast.

For now, I don't think Telidon is any more useful to me than any other medium. My own personal way of finding out what the weather will be like is to look out the window each morning when I get up.

Note: Mrs. McDuff makes reference to the one area where, until now, there has been only partial distribution of Telidon weather broadcasts.

Alain St-Denis



Systems Analyst, CMC

Using Telidon technology to disseminate weather information is a good thing for the public. It's a good-quality product.

It's a mode of communication, of transmission, that really suits today's tastes, in this television era. It tells people what they want to know.

With the recent advances in technology, we can go further, but we mustn't go overboard. You have to take into consideration that there are limits to the size of the characters that are suitable for viewing on the screen.

Telidon, or at least the visual presentation of the weather, is sure to have a very bright future, because images have the power to grab the viewer's attention and convey a message to him in the wink of an eye.

Is there any simpler way of telling people it will be a nice day than to show a big yellow sun on a blue background? To obtain accurate, clear information through pictures — that's what people want. The details are for the meteorologists.

Susan Bisanti



Systems Analyst, CMC

Telidon is a rather simple way of informing the public. There's not very much information. It's too general — in a sense, I would say it's anti-specialist. Maybe I'm too close to meteorologists to be content with what Telidon delivers.

Since I'm working on the development of a technology more advanced than Telidon, I feel it should be replaced. The images we can now get with very high resolution equipment make Telidon second-best.

For those who don't know any better, Telidon is okay, but for the sake of our own image, we should keep in step with technology and offer more detailed graphics conveying more information.

Despite my views, I do believe that the idea of giving the weather through Telidon is a good one in itself. Sometimes I do take a look at it on the weekend.

Cont'd on page 8

BOOK REVIEW

(Weather War, Severn House, 1982, 384 pages, \$20 (U.S.) — Review by Gilles Brien)

by Leonard Leokum and Paul Posnick

Blowing up airliners, earthquakes and terrorist attacks are the bread and butter of modern thrillers. Now it's the turn of the weather to play villain in an American cliffhanger by Leonard Leokum and Paul Losnick.

The hero is of course a meteorologist with the unlikely name of Forest Hill. Actually he's a TV news star on a large, United States TV network, the first weatherman in TV history to become the number one attraction on television news. His style is a mixture of circus clowning and playing country rube. Since his procedures are both off-beat and comic, people tune in as much for his performance as to find out about tomorrow's weather.

Forest Hill sometimes gives his daily weather reports sitting in a sandbox, wearing an 1890 style bathing suit with rubber bathing cap. Once to announce a major heatwave, he

stripped naked and started squirting the entire news staff with a fire extinguisher.

Despite his pranks, Hill is a scientist at heart and only reluctantly plays the clown. One day while pursuing his favorite past time of analysing weather maps and compiling climate data, he discovered something strange: half a dozen recent tornadoes and hurricanes that physically could not possibly have developed under prevailing weather conditions. The hero of this improbable novel finds himself enmeshed with the Secret Service and the victim of political intrigues. But his real enemies are a couple of hurricanes, a flood and some tornadoes.

The book assumes that a country can own its own weather modification machine as a means of boosting its power. This machine, invented by one of Forest Hill's former University Professors is the heart of the story. Unfortunately very few details are provided on how it works. The only thing known for sure is that three satellites have been placed into orbit around the earth for the purpose of

destabilizing the thermal balance of the stratosphere. It's a science fiction novel which at times comes close to pure fantasy. The shadowy politicians behind such a weather making machine seek an ultimate weapon for bringing non-aligned countries to their knees. By changing the climate, it is possible to starve entire populations and to stir up terrible unrest. The machine is the ultimate form of blackmail.

Fortunately our TV weather hero decides to save the world by denouncing the villains and by finally destroying their infernal machine. Many people will think that a story like this could actually occur in the near future, that the advance of modern technology could lend credibility to their science fiction plot.

The fact that silver iodide has been used fairly effectively for dispersing light fog, is scant proof that such methods can be used as a surefire way of modifying the weather.

There can be no real weather war until a true rain making machine has been invented.

Gilles Brien works at Frobisher Bay weather office.

Cont'd from page 7

Raymonde Veillette

What impressed me when I saw Telidon for the first time was the quality of the colour and the graphics.

In terms of content, I was pleased to see that they gave the international forecasts — a service that's useful when you travel.

To learn the day's forecast, I listen to the radio. I don't consult Telidon unless I want to have an idea of what the weather will be like for the next two or three days.

I like the general presentation of the Telidon program. The forecasts and the current weather are clear and simple.

As a next step, I would like to see them give us complementary information, such as barometric pressure and wind velocity.

Whatever the case, they should continue to broadcast the weather through Telidon. It's interesting to watch, it's good.



A fair-sized audience gathered in the AES Downsview Auditorium September 3 to watch ADMA Howard Ferguson present 11 25-year Long Service Awards.

Telling the award-winners that he would personally like to acknowledge the contribution each of them had made to AES and the public service over the past quarter of a century he added that he considered himself lucky to have the good fortune to work closely with most of them. Graeme Morissey was first up on the stage and Mr. Ferguson informed his audience that Morissey joined the Meteorological Branch in 1961 after receiving his BSc in mathematics and physics at Southampton University and a Diploma at Imperial College, London, in Meteorology. He was sent on the first McGill MSc meteorology course that fall.

When posted to Goose Bay in 1963, he and a few colleagues founded the Labrador Meteorological Society. He joined Research and Training division in 1966 and in 1972 became chief, Aerospace Meteorology Division which included supervision of the Satellite Data Laboratory. In addition to participating in the development of AES satellite programs, he was seconded to WMO as a satellite specialist for missions in Outer Mongolia and Panama. In 1985 he was awarded the Canadian Meteorological and Oceanic Society (CMOS) Applied Meteorology prize.

He is married and has two sons. Outside the office, he and his wife are keen sailors who occasionally find time for gardening and cross-country skiing.

Mr. Ferguson gave similar career outlines for 10 other award winners. They are seen in the above picture; front row, from left to right, Nancy Blackburn, Peter Lee, Ken Devine, Howie Kagawa, and Dave McKay; back row, left to right, ADMA Howard Ferguson, Krishna Vupputuri, Frank Lochner, Floyd Radar, Denis Webster, Graeme Morissey and Mike Webb.



Clerk, Administration

My Arctic tour made me feel glad to be Canadian

by Brenda O'Connor



ADMA Howard Ferguson (left) and Dr. Neil Trivett look on as the head of the DND construction unit hands over the High Arctic Research Laboratory, Alert, N.W.T. to AES. Brenda O'Connor, far left, contemplates the scene.

I was not prepared to like the Arctic but I most certainly did. The Canadian Arctic is truly beautiful and what was most surprising was the realization that my tour of the High Arctic Weather Stations made me feel even more glad about being Canadian.

A routine produce flight to Resolute Bay, Mould Bay, and Eureka with a stop at Alert gave me my first taste of this far-away land to the north.

The Official Opening of the new High Arctic Research Laboratory on August 29, 1986 was the main focus of the Arctic visit, accompanying Howard Ferguson, the Assistant Deputy Minister of AES, Mike Balshaw, Regional Director of Central Region, Dennis Stossel, Superintendent of Arctic Operations, Jens Lyberth, Northern Careers Program Manager, Public Service Commission, and Ludy Pudluk, M.L.A. for the High Arctic.

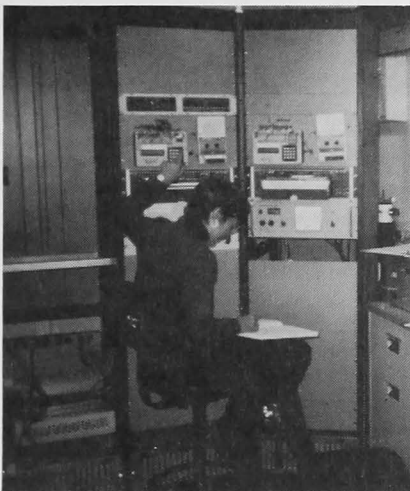
There was snow and cold. There were also musk-oxen, purple wildflowers, mountains that folded one into the other and clear, blue water. One never really loses the sense of how remote this place is, I suppose because many basic tasks require so much planning and discipline to actually get completed — from meal preparation to getting there. But without this first-hand view of life in the Arctic, most other experiences of day-to-



Mike Balshaw, director AES Central Region, walks on icy plank at Mould Bay, High Arctic Weather Station.

day life in Canada do not provide pictures of what really to expect.

At Mould Bay, the steep climb to the GMD dome of the Upper Air Station in -4°C wind, although bracing, reminded me that AES personnel at these Arctic stations must be a hardy and resourceful breed to survive. We witnessed Bill Baker testing the Beukers system for its application to the Arctic for upper air soundings. And generosity seems to come in handy as we discovered when our flight back to Resolute was delayed overnight. Joyce Thiessen as weather station cook, appreciated the presence of another woman and her extra nightgown, slippers and towels were in my hands before I had a chance to find out where I went next.



Brenda O'Connor assists at the High Arctic Research Laboratory at Alert.

At Eureka, the Garden Spot of the Arctic, we stayed up past midnight exploring the spongy tundra where Arctic Hare danced right around us to show how agile they were on their hind legs and how unimpressed they were at our being there. The next morning after breakfast, at 8:00 am, Howard Ferguson officially opened the new recreation facility off the main dining room. The Officer-In-Charge, Dennis Bitton, invited Jens Lyberth to perform a Drum Dance — the Inuit blessing of the new quarters.

Alert is absolutely unique. The presence of the National Defence installation gives one an immediate sensation of having landed at the space station of the movie 2001. Large heavy refrigerators doors close tightly shut on all the buildings to keep out the cold. In the cafeteria and halls, the khaki coloured fatigues and heavy parkas are almost the only clothing in evidence. Despite the regimentation, the warmth of everyone's welcome dispelled any impression of austerity or severity I may have had.

Everybody volunteered information — from where my room was (Shack 52 —

Penthouse Suite 4) to where were located the best quartz crystal stones on Crystal Mountain for my rock collection.

The High Arctic Research Laboratory Canada's first permanent research station for the continuous monitoring of background air pollution is about a 20-minute (5 km) drive from the main site — over a bumpy, rutted mud-road. I must admit to being a bit surprised by this efficient-looking mustard-coloured trailer surrounded by three tall towers, a small set of steps and porch, perched off the ground amid the hills and vast land. After the arrival of the AES contingent, several more trucks of DND personnel pulled alongside the small red shelter that had housed the first instruments and now served as the supply garage. Dr. Neil Trivett's welcome to all participants was followed by the Assistant Deputy Minister's official cutting of the ribbon. We crowded into the two-roomed structure (the outer room for supplies and power) and stepped into a very clean, organized laboratory where the painstaking details of the construction and assembling of this unit were now apparent.

For reasons of safety it was necessary to report on 2-way hand-held portable radios to the DND "Ops" (Operations) Centre every time one left for the laboratory site and returned. The one time I reported I forgot the full response and had to redeem myself by repeating slowly and deliberately "OPS-DOE FOUR DOE PERSONNEL RETURNING TO CAMP FROM BAPMON SITE."

Maurice Goethels, at the Alert weather and upper air station, probably best described working in the Arctic — "Without the visual distractions of southern Canada, one really has a chance to see the outdoors and to appreciate nature and silence". It seemed like a fitting description of the Arctic.

Brenda O'Connor is the Senior Communications Advisor, Communications Directorate, Downsview.



DC-3 produce flight lands beside scenic mountain back-drop at Eureka, on Ellesmere Island.

ZEPHYR BREEZES



World-circling Odyssey '86, touches down at Regina.

Fraser Hunter, Office-In-Charge, Regina weather office tells us about a "unique week" experienced there this summer.

It started on Monday August 4, when AES Regina was proud to receive the first real-time meteorological charts on the new METSIS satellite-to-earth communications system. (Resolute N.W.T. is the only other AES station to participate so far).

On the following day a special Transport Canada DC3 flight commemorating the 50th anniversary of the department touched down in Regina on its way to the big Abbotsford B.C. airshow.

Next day it was the turn of another notable DC3 to arrive. Called **Odyssey '86** — it celebrated the 50th anniversary of the launching of the veteran Dakota aircraft. At each stop on its round-the-world flight people were allowed to write slogans on the wings. One woman in MANILLA had written in big letters "I want a husband".

The climax of an exciting week came on Thursday when disabled pilot Carl Hiebett flew in on an ultra light aircraft, completing another stretch of his cross-Canada endurance trip. Unfortunately the plane had been dogged by bad summer weather right across the country, but the staff of AES Regina weather office was able to give more than adequate weather support to all three historic aircraft.

Earlier this year, the Research Branch of the Agrometeorology Section, Agriculture Canada, kept a four-month Open House at its Experimental Farm in Ottawa. During this Open House, the demand for Ottawa Weatheradio pamphlets was greater than Ontario Region could supply. Therefore, a one-page bilingual information sheet describing the Weatheradio Network was printed and delivered to Agriculture Canada for distribution during the course of the Open House, and single copies of Weatheradio pamphlets were mounted on a display panel. As many of the visitors to the Open House were tourists from across-Canada, Weatheradio Ottawa seized the opportunity to promote Weatheradio by borrowing a weather radio from Radio Shack and keeping it "on" during the Open House.

Happy 15th anniversary to Environment Canada, to AES (at least under its present name: the Atmospheric Environment Service) and last but not least to the AES Headquarters Building in Downsview, Ontario. All these major institutions came into being in the summer or fall of 1971.

Considering the big real estate anniversary, it's obvious that both the internal and external look of the AES Downsview building have changed over the years. A glance at some early photographs reveal a youthful-looking building, with few trees in the surroundings. The roof is totally uncluttered — no heating panels, no aquifer tanks, no Experimental Sciences observatory. Perhaps most noticeable of all there is no big weather satellite dish on the south west corner. (It was added a couple of years later).

One trusted landmark has been there from day one though, the huge weather sculpture by Ron Baird.



Bev Burns (left) congratulates Steve Chickwitsch on the occasion of his retirement.

Last February some 90 friends gathered in Edmonton to honour Steve and Irene Checkwitsch. The occasion was Steve's retirement after nearly 33 years with the Atmospheric Environment Service.

After a buffet dinner, guests heard an outline of Steve's long career with the service. He graduated from the meteorological officers course in 1954, and was posted to several RCAF locations in Eastern and Atlantic Canada. The Checkwitschs came west in 1958 with Steve serving in Calgary, Fort Nelson and Winnipeg. In 1966 he moved to Edmonton and by 1974 was named OIC of the Alberta Weather Centre. In 1983 he was promoted to Chief of Forecast Operations, Western Region.

Correction:

In the May-June section of Zephyr Breezes a picture was shown of Gérard Châteaigneau receiving an award from Lloyd Bernsten. The suggestion actually had to do with the electronic transfer of documents from various translation agencies.

A couple of years ago our unofficial Lake Ontario weather watcher wrote us a note about how he saw lake water being scooped up by large, listless clouds resembling sperm whales, later to be precipitated, without benefit of water rates on New Brunswick.

This same unscientific observer now tells us that he found the summer of 1986 to be "one helluva show".

Seated in his eighth-floor apartment overlooking the lake he watched intently as each torrential rain storm danced out its fury like some celestial ballerina.

Pooh-poohing such practical question as "will the rain ruin my tomatoes?," "Watcher" prefers to regard all weather events as **Theatre**. He says he often has a mind to call the severe weather people at the Weather Centre and ask them what's playing tonight weather-wise — a gala tornado maybe or perhaps a psychedelic lightning display played out against a stormy aquatic backdrop.

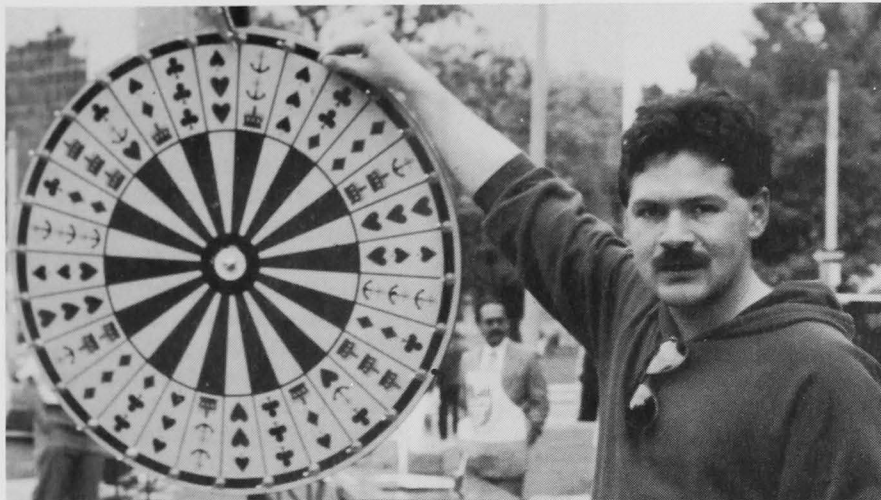
Theatre or not theatre, "Watcher" says he pities meteorologists and severe weather people who rarely get to see the grandiose weather productions that they forecast. This is a bit of an exaggeration, but it's certain that few forecasters would bother to lean back and adopt Watchman's voyeuristic attitude to a major hurricane, even on their day off. There's far more interesting stuff to see on TV.

An estimated 3500 people came aboard an AES Ice Reconnaissance aircraft when it spent a day this summer at the Gander (Newfoundland) Air Show. Crowds lined up to see AES ice observers manning all stations. In addition, the air crew conducted tours of the flight deck. The display proved to be one of the most popular in the entire air show.

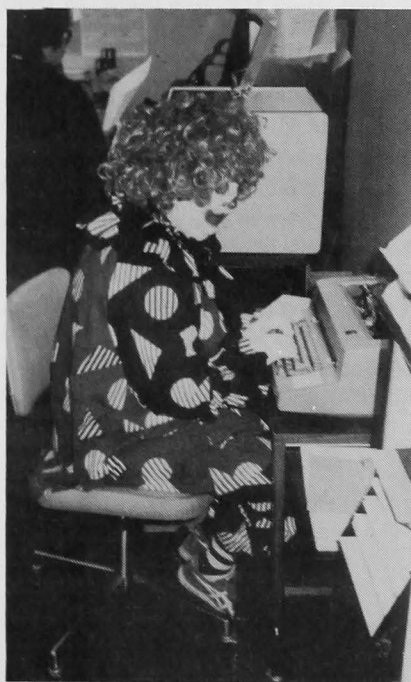
The ice reconnaissance crew consisted of manager Ray Walker, ice observers Bernie Wyer, Fred Kodz, Sid Thomson, specialist instructor Ray Sauvé and technician Bob Leach.



Crowds visit AES ice plane in Gander.



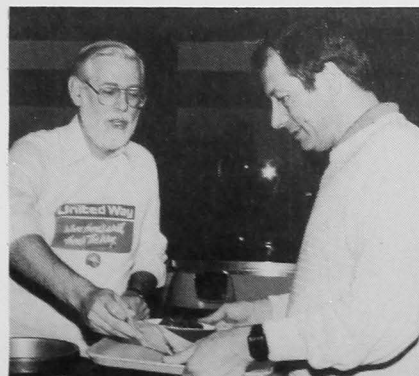
Lloyd Barnaby, DOE coordinator, is seen standing beside the Wheel of Fortune at the AES pavillion, located at the Canada-Ontario games, which represented the Joint Federal-Provincial kick-off for the 1986 Metro Toronto United Appeal campaign. AES/Environnement Canada took the lead in the Federal Services division with Dr. Donald McKay of the Canadian Climate Centre acting as Chairman. Total raised within AES by mid-October was \$30,000.



Gloria in Halloween costume.

Gloria Korson who works for Procedures and Standards division of Weather Services Directorate, always makes sure that Halloween's the most festive date on her calendar. It's the day she dons her multi-colored clown's outfit. Last year she wore it at the office and she expects to wear it there again this year. One of the places where Gloria's appearances are eagerly anticipated is the Day Care centre at AES, Downsview.

1987 will mark the 30th anniversary of Fort Nelson, British Columbia as an upper air station. The weather office at that location dates back to 1944 but it wasn't until 1957 that aerology operations using radiosonde instrument packages were begun, providing valuable meteorological upper air data to weather forecasters. The weather office, where surface weather observations are taken and pilots receive weather briefings, is situated at the airport terminal, while the upper air station is located at the north eastern end of the airport. Day to day operations are handled by a staff of five. Radiosonde balloons are released twice daily from the upper air station, while surface weather observations are transmitted hourly. The aerological observing site is considered to be the most up to date in the country, being completely rebuilt in 1982.



Mr. Ferguson serves chili at the AES cafeteria to support the United Way campaign.

New AES computer

The National Advanced Systems NAS/9060, the new mainframe computer, at the Downsview Computing Centre's (DCCS), is capable of carrying out instructions at the rate of approximately 11 million per second. This is about four times faster than the previous AS/6.

The DCC computer installation currently has more than 500 user accounts stretching from headquarters to the regions and including other federal and provincial government departments.

Principal AES users are the Canadian Climate Centre and the Administration Branch. The former will now be able to computerize its entire data management system — which includes management and presentation of archived climate data. The latter will be able to put all AES assets on computer and expand its warehousing programs.



Bruce Atfield, director Computer and Communications Services Branch (left), Georgina Chung, shift supervisor, and Lee Tripp, manager computing operations system, view new NAS/9060 in-house computer.

Bruce Atfield, Director, Computing and Communications Services Branch, comments: "Due to increased flexibility and speed of the new installation, users are now better equipped to meet the computing challenges that arise as AES strives to meet its mandate as efficiently as possible".

The new NAS/9060 has the capability of storing 24 million characters in its main memory at any given instant. The computer is fully compatible with IBM systems and uses numerous software products commonly used in the industry. More and faster communication lines were also installed, making the machine more accessible to the general AES community.

STAFF CHANGES/CHANGEMENT DE PERSONNEL

Appointments/Promotions Nominations/Avancements

L. Lamontagne (EG-6) Pres. Tech./Techn. en prés., QAEWR, W04/BM4, Val d'Or, P.Q./Qc.

R. Déry (EG-6) Pres. Tech./Techn. en prés., QAEWR, W04/BM4, Val-d'Or, P.Q./Qc.

M. Dubé (EG-6) OIC/Chef de service, QAEWR, W04/BM4, Trois-Rivières, P.Q./Qc.

D. Bouchard (SCY-2) Secretary/Secrétaire, QAEM, St-Laurent, P.Q./Qc.

Y. Héroux (EG-3) U/A Tech./Techn. en aér., QAEOU, WS1/SM1, Inukjuak, P.Q./Qc.

R. Laurence (MT-7) Chief Data Acquisition/ Chef Acquisition des données, QAES, St-Laurent, P.Q./Qc.

G. Cormick (EG-7) A/OIC/Responsable Int., W04/BM4, Edmonton Int'l. Airport, Edmonton, Alta./Alb.

I.B. Findleton (SM) Chief Comp. Centre/Chef, Centre de calcul, CID, Dorval, P.Q./Qc.

C. Klepacz (EG-4) U/A Tech./Techn. en aér., WS1/SM1, Cambridge Bay, N.W.T./T.N.-O.

S. Paymeno (EG-4) U/A Tech./Techn. en aér., WS2/SM2, Whitehorse, Y.T./Yuk.

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

N. Searle (EG-4) U/A Tech./Techn. en aér., WS2/SM2, Fort Smith, N.W.T./T.N.-O.

R. Bigio (MT-5) Meteorologist/Météorologiste, PWC, Vancouver, B.C./C.-B.

M. Martin (EL-4) Electrical Tech./ Electronicien d'entretien/QAEOE, St-Laurent, P.Q./Qc.

P. Hertel (CS-3) Supervisor Production Control/Superv. Contrôle Production, CMC, Dorval, P.Q./Qc.

G. Bolduc (EG-5) Met. Tech./Techn. en mét., CMC, Dorval, P.Q./Qc.

L. Veillette (CS-2) Programmer/programmeur, CMC, Dorval, P.Q./Qc.

L. Desjardins (ST-OCE-3) Word Processor Operator/Opér. trait. de textes, CMC, Dorval, P.Q./Qc.

L. Garand (MT-3) Meteorologist/Météorologiste, Dorval, P.Q./Qc.

M. Neault (EG-5) Met. Tech./Techn. en mét., CMCFT, Dorval, P.Q./Qc.

L. LeTourneau (SCY-4) Secretary/Secrétaire, ADMA, Downsview, Ont.

D.C. MacKay (EX-3) Special Advisor to ADM/Cons. spécial, SMA, ASMK, Downsview, Ont.

M.D. Hewson (MT-5) Meteorologist/Météorologiste, NWC, Gander, Nfld./T.-N.

G. Parks (MT-5) Meteorologist/Météorologiste, NWC, Gander, Nfld./T.-N.

Transfers / Mutations

M. Larocque (EG-3) U/A Tech./Techn. en aér., QAEOU, WS2/SM2, Frobisher Bay, N.W.T./T.N.-O.

D. Davies (RES-2) Research Scientist/ Chercheur, ARQD, Downsview, Ont.

R. Harvey Meteorologist/Météorologiste, PWC, Vancouver, B.C./C.-B.

P. Lang (MT-2) Met. Dev. Level/Niv. perf. mét., PWC, Vancouver, B.C./C.-B.

B. Biloeau (MT-2) Met. Dev. Level/Niv. perf. mét., PWC, Vancouver, B.C./C.-B.

C. Powell (EG-1) Met. Tech./Techn. en mét., Vancouver Int'l. Airport, B.C./C.-B.

P. Yiacouvakis (MT-2) Meteorologist/Météorologiste, Edmonton, Alta./Alb.

A. Van De Mosselaer (EG-2) Met. Tech./Techn. en mét., WS3/SM3, Fort McMurray, Alta./Alb.

A. Gaudet (EG-5) Pres. Tech./Techn. en prés., W04/BM4, Calgary, Alta./Alb.

K. MacDonald (MT-6) Meteorologist/Météorologiste, MAED, Bedford, N.S./N.-É.

L. Bourdon (CS-1) Programmer/programmeur, CID, Dorval, P.Q./Qc.

D. Kurowski (EG-2) Met. Tech./Techn. en mét., WAED, Edmonton, Alta./Alb.

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

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

J. How (EG-2) Met. Tech./Techn. en mét., WS3/SM3, Lytton, B.C./C.-B.

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

Y. Landry (EG-6) Pres. Tech./Techn. en prés., W04/BM4, Val-d'Or, P.Q./Qc.

A. Larocque (EG-6) Met. Tech./Techn. en mét., QAEMT, St-Laurent, P.Q./Qc.

B. Armstrong (EG-6) Pres. Tech./Techn. en prés., Winnipeg, Man.

J.D. Lanctin (EG-3) U/A Tech./Techn. en aér., WS1/SM1, Sable Island, N.S./N.-É.

C. Clarke (EG-3) U/A Tech./Techn. en aér., WS1/SM1, Sable Island, N.S./N.-É.

A. Bouchard (EG-4) U/A Tech./Techn. en aér., WS2/SM2, Stephenville, Nfld./T.-N.

J.H. Mader (EG-6) Pres. Tech./Techn. en prés., W04/BM4, St. John's, Nfld./T.-N.

P. Berthelot (EG-4) U/A Tech./Techn. en aér., WS1/SM1, Shelburne, N.S./N.-É.

L. Cooler (CS-3) Programmer/Programmeur, Bedford, N.S./N.-É.

Temporary or Acting Positions / Postes temporaires ou intérimaires

L. Foucault (MT-2) Meteorologist/Météorologiste, CMQ, St-Laurent, P.Q./Qc.

L. Lacroix (SCY-2) Secretary/Secrétaire, QAEO, St-Laurent, P.Q./Qc.

Y. Lamontagne (EG-3) U/A Tech./Techn. en aér., QAEOU, WS1/SM1, La Grande IV, P.Q./Qc.

C. Rancourt (EG-5) OIC/Responsable, QAEOU, W04/BM4, Sept-Iles, P.Q./Qc.

A. Lemyre (EG-4) U/A Tech./Techn. en aér., QAEOU, WS2/SM2, Kuujuaq, P.Q./Qc.

A. Chiasson (SCY-OCE-3) Word Processor Operator/Oper. trait. de textes, ARMI, Dorval, P.Q./Qc.

R.E. Mickle (SM) A/Chief/Chef/Int., ARQA, Downsview, Ont.

R. Tremblay (CM-6) Communicator/Agent de communication, ACPN, Downsview, Ont.

J. Low (CS-2) Programmer/Programmeur, ACPT, Downsview, Ont.

L. Beatty (CR-4) Clerk/Commis, QAEP, St-Laurent, P.Q./Qc.

R. Milo (MT-6) Meteorologist/Météorologiste, APDG, Ottawa, Ont.

H. Davidovich (CR-4) Clerk/Commis, ACPE, Downsview, Ont.

L. Tripp (CS-4) Programmer/Programmeur, ACPX, Downsview, Ont.

D. Blakey (CS-3) Programmer/Programmeur, ACPT, Downsview, Ont.

P. Thorne (EG-6) Surface Inspector/Inspecteur obs. en surface, Stephenville, Nfld./T.-N.

D. Miller (EG-6) OIC/Responsable, Stephenville, Nfld./T.-N.

Leave of Absence/Congés autorisés

K. Puckett (SM) ARQA, Downsview, Ont. French Language Training/Formation linguistique (Français).

S. Wood, ACPN, Downsview, Ont. — returning in 1 year/de retour dans 1 an.

B. McKay, MSRB, Ottawa, Ont.

G. Roberge, MWC, Bedford, N.S./N.-É.

Y. Sivret, Sable Island, N.S./N.-É. — Educational Leave/Congé d'étude.

Departures/Départs

T. Charlton, Inspector/Inspecteur (Dewline) WS1/SM1, Hall Beach, N.W.T./T.N.-O.

L. Poitras, ADMA, Downsview, Ont.

R. Garabedian, ACPT, Downsview, Ont.

R. Landau, ACPN, Downsview, Ont.

F.C. Shields, MAEM, Bedford, N.S./N.-É. to DND/à la DN.

Retirements/Retraites

P.R. Lancup, CMQ, St-Laurent, P.Q./Qc. July/juillet, 1986.

R. Inouye, ARPP, Downsview, Ont. July/juillet 1986.

C.L. Mateer, ARPD, Downsview, Ont. Aug/août, 1986.

A.W. Smith, ARQT, Downsview, Ont. Aug/août, 1986.

B. Dyer, Communications, Edmonton, Alta./Alb. Aug/août, 1986.

G. Gagnon, CMQ — QAEMT, St-Laurent, P.Q./Qc. Aug/août, 1986.