

ZEPHYR



Environment
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Atmospheric Environment Service

JANUARY/FEBRUARY 1986

Howard Ferguson the new ADMA

Jim Bruce retires

Assistant deputy minister Jim Bruce bade an emotional farewell to some 300 friends, associates and AES staff on the occasion of his retirement after 38 years with the Public Service of Canada. A special ceremony was held on January 8 in the Auditorium of AES Downsview headquarters.

He told his audience which included his wife Ruth, several other members of his family, distinguished visitors from across Canada and abroad, plus some 50 retirees, that henceforth he would spend more time "savoring the world" while leaving his very able AES colleagues to "save the world". Mr. Bruce indicated he would still be involved in international environment issues, "though at a slightly less hectic pace".

Addressing the capacity crowd with cheerful spontaneity, the retiring ADMA said that he was leaving the service in excellent hands and that he was delighted that Howard Ferguson had been named to succeed him. He added, "I have spent a marvellous 5½ years with you".

Outlining some landmarks in his career as ADMA, Mr. Bruce mentioned the setting up of marine weather desks on the west coast, the installation of the CRAY computer at the Canadian Meteorological Centre, the resolution of acid rain problems in collaboration with European experts (though not yet with the U.S. authorities), the signing of the first multinational agreement on ozone pollution at Villach, Austria and last but not least, the opening of the unique Day Care Centre at AES Downsview. In conclusion Mr. Bruce said the hardest thing about retiring was losing day-to-day contact with colleagues.

Mr. Bruce heard two close colleagues outline his "marvellous contributions to AES and to the environment as a whole". Dick Hallgren, administrator of the U.S. National Weather Service, said that Jim Bruce was respected throughout the world, had made a tremendous contribution to meteorology both nationally and

internationally and was constantly consulted for his thoughtful expertise.

Another close colleague, Jacques Gérin, former deputy minister of Environment Canada, hailed Mr. Bruce as a professional who rose to the top of his calling through "sheer competence". Mr. Gérin added, "Jim Bruce is no paper man, but someone who prefers to build on solid concrete".

Outlining Mr. Bruce's career — from the days in the 50s when he began as "a lowly meteorologist", through his "happiest days" as director general of Inland Waters and on to the international level and the World Meteorological Organization (WMO) via AES — Mr. Gérin described Mr. Bruce's career as a great cycle of rising, levelling off and coming down to earth again. "While achieving this, Jim managed to make everything look so easy, as if he was never under pressure".

A further highlight of the proceedings was the announcement by the new ADMA, Howard Ferguson of the creation of the J.P. Bruce Achievement Award to be offered every year, normally to an AES person, who does most to achieve the goals of the Atmospheric Environment Service. Presenting a replica of the wall plaque to Mr. Bruce, Mr. Ferguson said the award was set up in recognition of outstanding service by the retiring ADMA.

Mr. Bruce himself was the recipient of a long service award for 38 years in the Public Service. Presenting the award, Lou Pertus, director general of DOE Personnel, described the retiring ADMA as an uncommon leader, both as a scientist and as a manager.

Dr. Art Collin, former ADMA, unveiled the portrait of Jim Bruce to hang on the "Downsview Wall" outside ADMA's office in the Downsview Building. Dr. Collin jokingly referred to the 11 portraits of former weather service directors covering a 150-year period, as "a dynasty" and compared the Downsview Wall to some of the famous walls in history such as the Great



Admiring a travelling bag he received as a farewell gift from AES employees, Jim Bruce said he would henceforth spend more time "savoring the world".

Wall of China and the Berlin Wall.

David Phillips impersonated Mr. Bruce in a satirical monologue and slide show, called "State of the Weather Report". Dr. Des O'Neill, AES director Atlantic Region acted as M.C.

Gifts received by Mr. Bruce included a slide projector and a travelling bag purchased through contributions by AES staff and other well-wishers, an antique barograph presented by Jim McCulloch, director general, Central Services Directorate, and a miniature anemometer presented by Mr. Hallgren.

After the auditorium ceremony, some 180 guest assembled in the AES cafeteria for a buffet-reception. Guests from directorates, all AES regions, every type of government and non-government organization as well as numerous retirees were all present. Some guests commented that it was a unique occasion for meeting old colleagues, making new acquaintances or for bidding personal farewell to Mr. Bruce.

Mr. Bruce served as assistant deputy minister of AES for five and a half years. He is the permanent representative for Canada at the WMO and was elected third vice-president of this UN agency. He was a member of the Canadian team that negotiated the 1972 Canada-US Great Lakes Water Quality agreement, he also served

(Continued page 6)

Canada

Storm Lashes U.S. Ice Breaker Polar Sea

by Gary Wells

The calm serenity of a record-breaking summer was rudely ended during October. A number of storms struck the west coast of British Columbia, the worst occurring during October 25-26. Fishing was the best in decades, and pressure was successfully exerted to extend major fisheries beyond their normal closing dates. On the night of 24 October, 70 to 100 fishing vessels lay anchored near the west coast of Vancouver Island. . . their plans were to head seaward the next morning to exploit the B.C. fishery.

Farther north, dozens of vessels were about to cross Hecate Strait on their way back from a successful fishery near the Queen Charlotte Islands. Some crews had off loaded their catch and were anxious to return home to their families; others were hoping to send their catch to the markets near Prince Rupert.

The winds were light and the seas were calm, but all was not quite right. At the Pacific Weather Centre in Vancouver, forecasters were analysing a very weak system that was hundreds of kilometres offshore. Data being analysed over the Northern Pacific were sparse. . . the major source of information was the satellite imagery.

Some forecasters had recently returned from a workshop in Seattle aimed at examining the "maritime bomb" — a weather system that 'explodes' from an innocuous-looking low pressure system in to full-blown storm of hurricane-force winds within a matter of a few hours.

Forecasters were nervous. . . the system they were analysing showed no signs of major development. . . yet, the

satellite data seemed to indicate the potential for a bomb.

Shortly after midnight the decision was made to issue severe gale warnings to commence 24 to 36 hours in the future. Before daybreak, storm warnings were issued for most of the coastal waters. A "bomb" was forecast to develop the night of October 25.

Throughout most of this day, nothing much happened. Would the development actually occur?

Then, late in the evening, it started. A rapid intensification took place and the system accelerated toward the coast. It was not long before winds of 60 to 80 knots, and much higher gusts were pounding the coast. Seas rose dramatically. The weather reporting station at Cape St. James a rock 100 metres above sea-level at the south end of the Queen Charlottes. . . reported sea spray and foam with winds gusting to over 100 knots.

By late Saturday, the winds abated and the storm died almost as rapidly as it had developed. No ships were sunk in the storm. No Canadian lives were lost. The public knew little about what had happened.

The only casualty occurred on the U.S. Icebreaker *Polar Sea* during its way home to the United States after passing through the Northwest Passage. Off the west coast of Vancouver Island, a severe roll of the ship sent one crew member to his death and injured two others.

This weather event had all the earmarkings of a major marine disaster. Had the warnings not been issued in time, or ignored, many vessels could have been trapped at the height of the storm and results could have been more tragic. As far as our work was concerned, it was just another day.

Gary Wells is chief of Forecast Operations, AES Pacific Region



The U.S. ice breaker *Polar Sea*, which is seen sailing triumphantly through Canadian waters at Lancaster Sound, (N.W.T.) ran into difficulties during a B.C. coast storm.

Pacific Region Achievements

An opportunity to recognize outstanding achievements by staff of Pacific Region arose during a recently held AES Achievements Award presentation held in Vancouver and attended by Environment Minister Tom McMillan.

Among those receiving awards were: David J. Phillips for his contribution to the development and operation of the Automated Shipboard Aerological Program (ASAP); Andrew Borm for his work in developing a summary of financial line objects on one page; Dennis Engemoen for his technical support to ASAP; and John G. Paschold for his excellent weather broadcasting services to the public.

Addressing the gathering at the Pacific Weather Centre, Dr. Ian Rutherford, Director General Weather Services Directorate, said the various award winners had made notable contributions in the areas of administration, technical support, weather forecasting and the promoting a more positive image of AES.

"The AES Achievements program represents a special and rather personal way of expressing our appreciation for a job well done" he concluded.

Have a photo you'd like to share?

Here's your chance to be part of AES's most popular publication — the Weather Trivia Calendar. Interesting color photos of weather and climate are welcome. Black and white photos also needed for Zephyr and AES brochures. Please send to Editor, Zephyr. All materials will be returned.

ZEPHYR

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Environment Canada Environnement Canada

Atmospheric Environment Service Service de l'environnement atmosphérique

Weather Trivia Calendar — Far From Trivial

By Robert Boggs

The U.P.I. Wire Service in a cable to 1,500 newspapers radios and TV stations across North America proclaimed "The Canadian Weather Trivia Calendar has become one of the hottest gift items this side of the stratosphere". Indeed, AES has gained considerable attention through the sales of over 30,000 calendars across Canada, and in the U.S. This extends well beyond the normal audience for AES publications. Amongst Federal publications, the Weather Trivia Calendar has the best sales record ever, outdoing by far this year's previous best seller, "The History of the Kingston Penitentiary". Within the Canadian Calendar market where the average calendar sells 10,000 copies, the Weather Trivia Calendar outperformed the industry average by three times!

The calendar was a unique product. Residents throughout Canada could identify with the weather trivia items and it brought back many memories.

The calendar also appealed to the Media. In all, the calendar received over 65 media mentions. It was featured in national programs on CBC TV and Radio Networks, national newspapers, magazines, and radio phone-in programs.

David Phillips creator of the calendar gave numerous TV and radio interviews while visiting some of the regions. During a visit to Halifax, Mr. Phillips was whisked to 11 interviews in two days. Actual response to this media exposure is uncertain but there is no doubt about Mr. Phillips' performing talents. Shortly after being interviewed by two of Toronto's largest radio stations, he was offered a position as a radio program host. He politely turned down the high-paying, high profile job on the grounds that he wished, come-what-may to stick to his area of expertise — working as a government climatologist.

The calendar received its greatest notoriety when popular weathercaster, Willard Scott, of the highly rated NBC Today Show gave a five-minute plug for the calendar. At the close, forgetting the forwarding address in Canada he invited viewers to write in care of the Today Show. Little did he know the response he would receive. His assistant, Nancy Fields, said they had received hundreds of calls and letters about the calendar. "We're getting bombarded", she said. "The phone was ringing off the hook the first couple of days. We're still getting mail". Over one thousand calendar requests were forwarded to AES from the United States. When did the Trivia Calendar cease being trivial? The cal-

endar's image grew immensely, when the prestigious Financial Post featured the calendar in an article on unique Christmas presents. The Weather Calendar shared the spotlight with such exotic items as a bagel cutter, and a London Sterling luxury car delivered to one's door Christmas morning with a big red bow.

A couple from Massachusetts wrote: "Please add our names to the requests for the 1986 Weather Calendar. We have the Canadian version of the Genus II Trivial Pursuit. It is truly amazing to realize how little we know of that great country to our north". Several people simply asked for the "Trivial Pursuit Calendar". A Canadian living in Georgia requested "the fantastic, incredible, and unbelievable Canadian Weather Calendar". The most touching request came from a lady in Florida who wrote "I am 80 years old and the weather is the only thing I can take an interest in. Everyone thinks I'm old but I have news for them because a 17 year old girl lives inside of me".

Several Letters were received from people ordering seven or eight calendars each because "the calendar solved all our Christmas shopping problems". Staff at Downview seemed to have the same idea. By mid-December, about 400 calendar had been bought by AES staff here.

Within the Regions, Lionel Haughn of Atlantic Region must be commended for his initiative. Atlantic region was also closing in fast on the 400 calendar sales mark by mid December, due to Lionel's promoting and organization. He had taken a display including the calendar to the Shearwater Air Show which was attended by 100,000 Halifax residents. Lionel also organized displays in all the WO4s, and added tag-on messages promoting the calendar to weather reports.

Rapid sales in the fall led to the decision to print extra copies. By mid-December, it appeared that the full supply of 37,000 calendars would be depleted, and there was discussion of a third printing. The calendar stands to generate over \$100,000 of revenue for the Canadian government. It won't remove the government's deficit, but the calendar has increased public awareness of AE services and enhanced the image of AES in the eyes of both public and media.

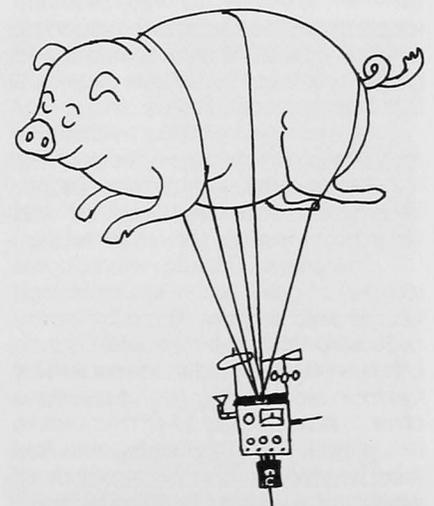
Robert Boggs is a market consultant specialist working with the CCC.

Pigs in space help monitor the ozone layer!

Lewis Poulin ARPX

What's the common link between ducks, sheep, roosters, dogs, monkeys and pigs? All have been sent up into some part of the atmosphere or even outer space. In September 1783, Louis XVI witnessed a duck, a sheep and a rooster go up in one of the first flights of a new device called a hot air balloon. In November 1957, Laika the Soviet dog was the first live passenger sent into space. Late in 1959 monkeys were the first passengers to return safely from space. But what about "pigs"? Ever since 1974, a handful of Canadian scientists have been organizing and monitoring the flight of "pigs!" on payload dangling from giant helium-filled balloons that rise 30 to 40 km above the earth's surface. Like the monkeys sent up early in the space program, these pigs have a job to do as well.

These are not your average pigs. PIG is simply a nickname for a scientific experiment designed to measure the ozone concentration in the upper atmosphere. But why call pig a PIG?: "Simply because if you stick a few stubby legs and the bottom half of a styrofoam cup into the experiment's container and a curled pipe cleaner at the back, it really does look like a pig", says John Bellefleur, an upper-air technician with Canada's Atmospheric Environment Service. These pigs have been flying since 1974. Of course, nicknames and acronyms are all part of modern scientific jargon.



Hectic Times at the Weather Centre

To tie in with the severe winter weather season, Communications Directorate at AES Headquarters, Downsview decided to release a national news backgrounder to both the media and public telling them exactly what goes on at an AES weather centre in the crucial one or two days before a major winter storm strikes. Many of those working in the weather centres found the article very human and close to reality. But a few said that the comparisons with space shuttles and operating theatres tended to overdramatize the story. We would like to know: WHAT DO YOU THINK? Your comments on this article would be appreciated. Please give Gordon Black a call at (416) 667-4551 or drop us a note.

What is the most frantic time of the year at an Environment Canada Weather Centre? It's the period just before a severe winter storm.

Trained weather service staff have to be ready to predict this most disruptive form of weather at any time from December through March. Ideally they should be able to tell us whether to expect heavy snow, freezing rain, high winds or extreme cold temperatures. In any case forecasters are aware that winter storms can cause cars to skid off highways, public transportation to be tied up, aviation to be grounded and most outdoor activity to cease. Even weather personnel sometimes get stuck in snow drifts attempting to get to and from their work.

While forecasting tornadoes and other summer severe weather usually require the services of a few highly trained specialists, predicting winter storms often uses the efforts of the entire weather centre staff, perhaps a dozen people straining to achieve maximum accuracy and the widest possible coverage. The organization and concentration is sometimes so great, it seems as if the weather people are launching a space shuttle.

With some regional variations, methods for forecasting winter storms at the Gander, Halifax, Montreal, Toronto, Winnipeg, Edmonton, Vancouver and White Horse weather centres are similar.

Environment Canada meteorologists look for potential winter storms in high altitude wind patterns. Three to five day outlooks produced by the CRAY supercomputer at the Canadian Meteorological Centre in Montreal give the first real signs of major storms. About 24-48 hours before their arrival, forecaster will have spotted their beginnings through hundreds of weather observations taken on land and water from Canada and around the world. Meteorologists can also trace storm development through data obtained from weather balloons. They track frontal zones

(contrasts of hot and cold air over the continent and oceans) which form a major source of energy for storm development. Forecasters also study water surfaces to find out if they are smooth and moist enough to accelerate precipitation-laden winds allowing them to dump snow and freezing rain on land.

Forecasters consult complex mathematical models of the atmosphere put out by the supercomputer which produces frequent "snapshots" of the way the atmosphere is shaping up. These help forecasters monitor the track and intensity of the storm. Satellite pictures and data from observations stations also help meteorologists to assess the amount of moisture in a storm. Temperature data from the upper atmosphere allow meteorologists to observe warm and cold air movements — a key to deciding what type of precipitation to expect — rain, snow or freezing rain.

Armed with weather maps, forecasters then describe the expected winter weather of the next 48 hours. If the storm promises to be severe, weather warnings are issued and sent first to the Environment Canada's 59 weather offices, then distributed to the media or public via such special services as Weatheradio Canada. During warnings extra efforts are made to contact city roads departments, police and other weather-sensitive agencies. Even now, forecasters cannot relax. An intense 24-hour-a-day weather watch is kept using weather radar, satellite maps, and hourly weather observations to monitor the progress of the storm. Then there's another forecast to be released six hours later.

While this work is going on weather centres and offices are bombarded with enquiries from the media, the public, municipalities, even film companies on how the storm is progressing — none of which makes the forecaster's or presentation technician's job any easier.

A visitor to a Canadian weather centre prior to a major winter storm would find a tense atmosphere somewhat like a hospital operating theatre. A dozen forecasters might be seen examining terminal screens or poring intently over maps. Sometimes the strain is so great, meteorologists just stagger home exhausted. But Environment Canada staff know that this job is crucial. Winter storms affect vast numbers of Canadians and issuing timely, accurate warnings and forecasts can help save lives, protect properties and allow us to carry on our economic activities.

SNOW

First Half of Winter

Snowy and cold weather ushered in an early 1985-86 winter season in Western Canada. On the morning of September 6, 1985, several centimetres of fresh snow blanketed parts of Central Alberta, the foothills and parts of Northern B.C. Up to 20 cm of new snow fell in the mountains. Throughout the remainder of September and during October and November, the Prairies and B.C. were battered by frequent snow storms and occasional blizzards. Temperatures often fell to record low values and during the peak of the cold wave many parts of B.C. experienced the coldest November on record. Arctic air from the Prairies streamed over the Rockies towards the Pacific causing bitter wind chills and snow squalls along the southeast shore of Vancouver Island. Normally protected from such events by the mountains, unprepared residents of Victoria and area found themselves slipping and sliding in as much as 38 cm of snow. Such a snow depth there would be expected only once in 20 years.

For much of this time, eastern Canada experienced somewhat above normal temperatures but a rapid change took place at the beginning of December when the cold air was displaced from the West and moved over the eastern half of the country. The outbreak of Arctic winds over the Great Lakes produced abundant snowfalls in nearby Ontario snow belt communities. As a result, the skiing industry enjoyed one of its best seasons in nearly a decade.

Vigorous storms were frequent from the Great Lakes eastwards, each producing major snowfalls across northern Ontario, central Québec and parts of Atlantic Canada. The strongest of these occurred just after New Year's when much of the Maritimes was paralyzed by two snowfalls which combined to produce up to a 91 cm accumulation. Winds gusting as high as 160 km/h piled the snow into 4-metre drifts. Communication, transportation and power transmission were all seriously hampered, and in adjacent regions of Québec a number of traffic fatalities resulted.



During severe blizzards even large two-storey houses can become enveloped in snow.

Snow Measurement Research Assists Forecasts

by Dr. Barry Goodison

Over the past 10 years several projects have been undertaken to improve our methods of measuring snow in Canada. They have ranged from traditional field measurements to research on the use of satellite sensors for monitoring our snow resources.

Research was conducted on determining the accuracy of precipitation gauges used in Canada for measuring snowfall water equivalent. Serious under-measurement by some gauges because of wind effects hinders accurate measurement. The Nipher shielded snow gauge proved to be the most accurate under most conditions and generally has a far superior catch efficiency compared to other gauges. The catch discrepancies between gauges used in different stations has made it difficult to compare data for climate modelling or precipitation chemistry, even though the need for such compatible data sets is vital.

These results have led to development of a large Nipher-type shield for use on the standard recording gauges. Development and field testing results indicate that by using this shield, data compatible with the standard Nipher used at AES principal stations can be obtained. This type of shielding is being tested for use on gauges at autostations and at precipitation sites used for CASP (Canadian Atlantic Storm Project).

Measuring the depth of fresh snowfall with a ruler is still the primary method used in the AES climate station network (2200 stations) and the water equivalent of the snow is estimated using the average conversion:

10 cm snow = 1 cm water

Although this is reasonably accurate in the Toronto area, research on the density of new snow at selected locations across Canada reveals considerable variations in the water equivalent. At Dease Lake in B.C., it was found over the three-year study period that an average of 13 cm of snow was necessary to produce 1 cm of water. Knowing these variations is important for improving our estimates of precipitation using ruler measurements since winter precipitation in many parts of Canada is a key element in calculating spring runoff, important for water supply, flood potential and soil moisture recharge.

AES will be taking a lead role in a World Meteorological Organization comparison of methods for measuring solid precipitation, especially those suitable for use at automatic stations. Plans are under way to hold the experiment in 1987-89.

As we automate, there is a need for an

automatic, inexpensive snow depth sensor. AES is currently testing an ultrasonic model for use at automatic stations. Initially developed and tested in-house, it is currently being evaluated by industry for commercial use. After two years of field tests, the sensor accuracy is within 2 cm of the values measured manually with a ruler. The sensor would provide the researcher or forecaster with considerable information on the timing, amount and type of precipitation.

Research has ranged from assessing the accuracy of snow samplers used by AES and other hydrological agencies in Canada to developing methods for determining areal snow cover, depth and water equivalent using satellite sensors.

Earlier research in cooperation with other Canadian and American agencies dealt with the accuracy problem of the many types of snow sampler. Most over-measure the true snow-water equivalent, by 10% on average — a considerable error when forecasting the water supply in western mountain regions. These studies have resulted in two new accurate metric samplers which are currently being implemented into AES networks.

Development of algorithms for mapping snow extent, depth and water equivalent using passive microwave satellite data is an on going research project within AES. The Canadian Prairies are the primary test region. During the 1982 international multi-agency experiment to study prairie snow cover, data were obtained from ground, airborne and satellite systems and are the basis for studying microwave/snow cover applications. Previous satellite research within the

Hydrometeorology Division had developed the capability of mapping snow cover using NOAA digital data and NOAA satellite image products. Mapping of snow cover on a regular basis will lead to improvements in forecasting water supplies, floods, and crop yields, in climate modelling, and in the impact assessing of climate change.

Dr. Goodison is superintendent, Hydro-meteorological Impact Division and Development Section, Canadian Climate Centre, Downsview.



Sometimes urban snow storms mean the break up of trees and the downing of hydro lines (photo Ontario Hydro).

FORMATIONS

PLATES	
STELLARS	
COLUMNS	
NEEDLES	
SPATIAL DENTRITES	
CAPPED COLUMNS	
IRREGULAR CRYSTALS	
GRAUPEL	
SLEET	
HAIL	

Ice is much slicker near the freezing temperature than at much lower temperatures. A braking distance of twice as long is required on glazed ice at -1 than at -18°C .

Most winds can be classified as either hot or cold and by compass directions. In spite of this basic classification local/regional wind names exist all over the world. Among the strangest-sounding winds are: bad-i-sad-o-bistroz, bhoot, brickfielder, bull's-eye, chili, cockeyed bod, elephanta, haboob, el norte, oe, purga, sno, burster, taku, tehuantepecer, warm braw, whirly, williwaw, wisper and zephyr.

Some local North American wind names are: barber, burga, cat's paw, chinook, collada (California), coromell, kapalilua (Hawaii), knik (Alaska), northeaster, norther, northwester, Santa Ana.

If the total magnitude of the wind power blowing through the skies could be converted, without loss, into electricity, it would exceed 10,000 times the combined output of all the generating stations in the world.

(Continued from page 1)

as chairman of the committee on the Long Range Transport of Airborne Pollutants (Acid rain) and recently he chaired an international conference in Villach, Austria dealing with depletion of the stratospheric ozone layer. He began his government career as a weather forecaster and analyst for the Meteorological Branch of the Department of Transport. He became superintendent of hydrometeorology in 1959 and later served as director of the Canadian Centre for Inland Waters. Between 1977 and 1980 he was ADM, Environment Management Services. He received the International Hydrological Decade Award for distinguished contributions to hydrology in Canada.



Jim McCulloch, director general of Central Services presents Jim Bruce with an old time barograph.



New ADMA, Howard Ferguson, (right) presents Jim Bruce with a replica of the J.P. Bruce Achievement Award.



David Phillips, in his "State of the Weather Report", imitates Jim Bruce preparing his well-known Bouillabaisse recipe.

New J.P. Bruce Achievement Award Heads AES List

The Management Committee of the Atmospheric Environment Service announce the creation of the J.P. Bruce Achievement Award. The Award will be presented annually to the person, normally an AES staff member, deemed to have made an outstanding contribution to the Atmospheric Environment Service and its objectives.

The Award, designed to symbolize the Atmospheric Environment Service, will be in the form of a wall plaque. The Award will be financed from contributions made by AES staff members in honor of J.P. Bruce at the time of his retirement. The Management Committee will administer the Fund, will solicit nominations and will make arrangements for presenting the Award each year.

A replica of the award was presented to Mr. Bruce by the newly appointed ADMA Howard Ferguson during retirement ceremonies held at AES Downsview Headquarters on January 8.

Mr. Ferguson said that the new award reflected Mr. Bruce's interest in rewarding individual staff initiatives.

The new award follows the inauguration last year of AES Achievement Awards offered to AES staff in a wide variety of endeavours.

In addition to the J.P. Bruce Achievement Award and the AES Achievement Awards, AES is now involved in a program of handing out Suggestion Awards, Merit Awards and Long Service Awards.

Until recently these programs were the responsibility of the Treasury Board. About six months ago, however, the onus of operating the Federal Government's Incentive Award Plan was transferred to the various government departments. Since then, deputy Environment Minister Genevieve Sainte Marie has further decentralized the award programs by handing over funding and administration duties to the individual DOE services, including AES.

During 1986 AES expects to bestow some 200 awards of all kinds on its employees. In the words of Joe Boll, director AES Finance and Administration, "This should allow AES to more effectively recognize outstanding achievements of its employees".

A jet stream is a narrow band of strong winds, a few hundred kilometres across that encircles the Earth about 10 km above the surface. Jet streams blow at speeds between 160 and 320 km/h; however, winter jets have been clocked at 560 km/h.

Secretaries Have New Ideas

Not long after its second anniversary, the pioneering Canadian Climate Centre (CCC) Secretarial Committee, received an note of approval from Howard Ferguson, then director general of the CCC, now newly appointed ADMA.

Mr. Ferguson wrote that good secretarial work is essential for the smooth running of the organization and "contributes significantly to our image". The memo also confirmed the committee's need to implement new ideas and enhance jobs.

The CCC Secretarial Committee was established by the Centre's secretaries in 1983. The committee has an elected Chairperson and Secretary who hold the positions for a one year term. It holds meetings and their agenda and minutes are sent to each member and all CCC Managers. As a group the secretaries drew up the terms of reference which were then approved by management and formed the jumping-off point for new ideas and improved communications.

Some examples of the committee's accomplishments to date are:

The creation of a much needed Visitor Information Package (VIP) which includes information on the Canadian Climate Centre, hotels, restaurants, public transportation routes and attractions in Toronto. This package is used for conferences, workshops and seminars.

In addition every CCC secretary produced her own manual which outlines the secretary's job in detail and gives explanations of the types of work performed in each area. This enables temporary replacements to take over the work with much less difficulty.

Finally they arranged for the Downsview Records office to provide a drop-off box for after-hours mail deposit.

Lynda Smith the Chairperson, says that by taking the initiative in establishing this Committee the secretaries feel they have achieved a better rapport with management and with each other. "At least we now have a route of informing management of problem areas with possible solutions", says Ms. Smith, "We also have a better understanding of the important role secretaries play in providing quality information to the public.

Other members of the CCC Secretaries' Committee are: Lou Ann Hotz (Secretary), Valerie Moore, Marlyn Lemaire, Linda Levy, Lynda Smith, Lorraine Kiely and Peggy Gillord.

A temperature of 1°C and a wind velocity of 32 km/h has the same cooling effect as a temperature of -7°C and a wind of 16 km/h. A temperature of -35°C and strong winds will cause flesh to freeze in only 60 seconds.

AES Assists Japanese TV Crew

Nippon Hoso Kyokai (NHK) — the Japanese National Broadcasting Company — is producing a twelve-part television series about the geological evolution of planet Earth to be called *The Miracle Planet*. The series will explore particularly the fragility of the Earth's atmosphere. Last June, an NHK video crew arrived in Canada to film the seventh episode of the series — the remnants of the Ice Age in the High Arctic.

Special NHK program director was Kenichi Maruyama. Besides filming the majestic but impassive geological features, Maruyama wanted to film the people at work in AES's ice surveillance and weather observing stations. AES wrestles with the reality of the High Arctic atmosphere and converts it into data of use to both North America and the entire world.

Government permission to film was requested and granted and the NHK video crew benefited from AES knowledge and expertise. The AES-NHK link was coordinated by senior communications advisor Brenda O'Connor and Arctic Operations regional superintendent Dennis Stossel.

The program included filming at Eureka and Resolute weather stations. At Resolute the weather office, upper-air station, airport, Inuit settlement, and the new AES hangar were filmed.



Standing in front of an AES ice reconnaissance aircraft, are Kanichi Maruyama (left) NHK television crew leader, cameraman Shigeru Shimizu and Dennis Stossel, Arctic coordinator, AES Central Region.

Film was also shot from an ice observing aircraft. As June is off-season for ice observing in the High Arctic, a Lockheed Electra had to be specially requisitioned and flown into Resolute. The 8-hour flight included Axel Heiberg, Ellesmere, Cobourg, Devon, Bylot, and north Baffin islands. NHK were very pleased with the results. Superintendent Stossel says that at a height of 2000 metres, in mostly cloud-free skies, textbook examples of the evolution of the Earth's crust were shot.

Participants in the *Miracle Planet* filming were electronic technician Jerry Keable, and ice observers Graham Campbell, Donald Isaacs, Cheryl Layton and Bill

Webb. Comments Stossel: "It was rather unique to hear Messrs. Isaacs and (video crew member) Sakitsu discussing some of the operational facts in French." ACIR's Tom Kilpatrick also contributed to the success of the operation.

AES should receive a complimentary copy of the unedited NHK video tapes, which should prove useful for recruiting meteorological technicians for various High Arctic employment duties.

Adapted from a report by Dennis Stossel.

Upper Air Tech does Weather Show in Inuktitut

Before moving to Resolute Bay N.W.T. last fall Wayne Davidson of the Hall Beach Weather Office walked the three kilometres most afternoons to the village. This walk was not for his health, but for the weather.

Wayne did a radio show on local weather for the 400-strong Hall Beach Inuit community. But no one at the weather station understood what he said. This is because he did the entire show in Inuktitut (the language of the Inuit). About four years ago Wayne, who also speaks English and French fluently, began learning Inuktitut. He did this by talking to the older people who visit Montreal. Learning Inuktitut is not simple. He had no books, so he started to compile his own dictionary.

There are pitfalls to learning Inuktitut. Soon after beginning the show Wayne discovered that the Inuktitut words for many things varied from place to place. For instance the word "Khaouesaut" which Wayne knew meant temperature in the East Baffin area meant time in Hall Beach. Finally a woman called and asked Wayne why he was announcing *the time* in Frobisher Bay. Wayne *thought* that he was announcing the temperature. Still with a little practice, Wayne was able to adapt to the Hall Beach dialect.

Wayne tailored the show to the local needs. He began the show with the temperatures and winds of nearby settlements or weather stations. He then read the forecast prepared by Environment Canada. This short public forecast covers the Hall Beach and Igloolik area. This is important to the local people since it is where they will be hunting and traveling.

Using the upper air data from the Hall Beach aerological observations Wayne could discuss the winds and clouds aloft.

Wayne also tempered the data to relate to the season. During the early summer the entire village would await the breakup up of sea ice. This allowed them to move about in their boats, hunt walrus and set up their summer camps. During the winter the sea ice became a highway for snowmobiles and dogteams. But there

was a period between the winter and the summer when it was not safe for travel. The villagers had to wait to use their boats

By talking to some of the older people in the villages Wayne was able to gather general information about the temperatures and haze conditions that existed before the weather stations were set up. One older man in Clyde River related how in the winter of 1933 diesel fuel froze in the barrels and the people of the area were starving.

By now Wayne will have moved to Resolute Bay, N.W.T. so Hall Beach is minus its weather show. Hopefully Resolute will gain what Hall Beach lost, and Wayne will be able to continue his shows there.

Dangerous goods, shipping needles to the Arctic, concern warehouse staff

Some people at AES Headquarters know a little about the duties of the warehouse staff. The remainder think that the staff only work when they are required to render a service.

The warehouse staff comprises six men who know all the functions relating to warehousing, shipping and receiving. Have you ever stopped to think how you receive your purchases from the suppliers? Some of the items arrive without any means of identifying the recipient, other items are so large that special equipment must be rented to handle them. An example is the new weather radar equipment. Special arrangements had to be made for shipping this equipment to the different sites.

The shipping of dangerous goods has become a focal point in the past year or so. The warehouse staff had to take a course dealing with the shipping and handling of dangerous goods. If the required dangerous goods certificate contains any false information the shipper is liable to a \$100,000 fine or a year imprisonment or both; therefore it is important that the packer and shipper are made aware of any dangerous items to be shipped. Dangerous goods must be packed according to regulations.

The annual resupply for Eastern Arctic weather stations normally starts about December and carries on until the following August. Bookings have to be made for space on the ships. The shipments must be consolidated. Each station has its own specific colour coding and all smaller items must be packed in large tri-wall containers. So next time you take a special piece of equipment to the warehouse for shipping you will know that it will be packed and handled with care.

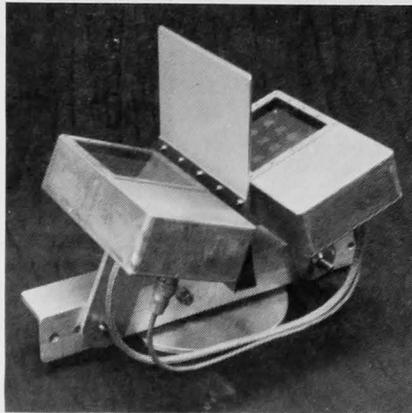
Tom Maiden

EMPLOYEE EQUIPMENT



Several years ago, the Measurement Technology Section of Data Acquisition Branch (ACSL/M) began experimenting with precipitation detection and measurement using an inexpensive traffic control radar device such as we see mounted on police cars. ACSL/M realized that using the principal of speed measurement, this radar would be able to do all that an electronic rain gauge can do and much more: it would be able to identify precipitation as being rain, hail, or snow — which a standard rain gauge cannot do. Initial results were promising. (The first concept development and feasibility experiments were done by John Cook of Information Technology Section). Ken Wu and Brian Sheppard then under-took to develop a *practical* weather instrument for use with the READAC Meteorological automatic stations.

The radar device was what Ken Wu calls monostatic — that is, it employs one antenna for both "send" and "receive". This was unsatisfactory. First, the splash of raindrops against the protective dome covering adulterated the desired data with useless interference. And even after it had stopped raining, beads of moisture on the dome would agitate in the wind and give snow readings. So Ken and Brian replaced the monostatic technique with a bistatic technique — that is, they separated "send" and "receive" by using two antennae. Then they mounted the antennae 56 cm apart on a boom arm and built it into a bistatic doppler radar device. The two antennae



were set at an inward slant so that their beams intersected above the radar and therefore didn't record splash and dribble at all. And now they have a new present weather instrument which they called POSS (Precipitation Occurrence Sensor System) — and it is functioning well.

POSS is being put through various testing programs. For example, it will be part of the Canadian Atlantic Storms Project (CASP) in the Maritimes. If specifications and algorithms are confirmed by these field testing programs, POSS will be integrated into our automatic weather observation network.

Ken Wu and Brian Sheppard are continuing to work on POSS, trying to improve it so that it can possibly identify drizzle and snow showers as well as rain, hail, and snow.

Information on these projects provided by Ken Wu who joined AES in 1973, after working for two years on development projects for Litton Systems Limited, Toronto.

At AES Ken was first involved with the International Field Year Great Lakes Program on Lake Ontario. He then became primary engineer in the development of SODAR (sonic radar for atmospheric sounding and more recently has been the engineer on development of passive microwave systems for ground-based temperature and humidity sounding of the atmosphere. He graduated from McGill University with a B.Eng. degree in Electrical Engineering in 1968.

latter and not the former as indicated in the write-up.

There is also the 77C anemometer which stems from the new optical shaft encoding concept originated and developed by Roger and which has been used in the Maps II autostation network.

Roger hasn't stopped there. Concerned with the need for a no-moving part de-iceable anemometer he carried on with

development work. This has been rewarded with the receipt of a patent along with Jiri Motycka of Metrex Instruments Ltd., for a de-iceable dragsphere anemometer. While still in the feasibility stage, it is being used by organizations which could not otherwise get observations in certain mountainous regions that have a high incidence of icing.

Yours truly,
W.L. Wiggins

Head, Measurement Technology Section
Data Acquisition Services Branch
Central Services Directorate.

*Zephyr does indeed offer this apology.

J. GRAHAM POTTER 1913 — 1986

Graham Potter, who retired in 1975 from his position as Chief of the Network Standards Division at AES Headquarters in Downsview, died unexpectedly in Etobicoke on January 3, 1986. A native of Ontario, Graham taught school for six years before joining the Meteorological Branch in 1941. He held university degrees from Queen's and Toronto and served at several RCAF stations during World War II. Postings at Goose Bay and Toronto Malton as a weather forecaster followed before he joined the Climatology Division in Toronto during 1952.

Over the following 20 years Graham was responsible for administering the quality control of data input into the Service's Climate Data Archive and still found time to write and publish more than two dozen articles, reports and papers on Canadian climate. His publications on snowfall were especially valuable and were used as a guide in other countries as well as in Canada. With the reorganization of the Meteorological Service as the AES in 1971-72, Graham developed the new Network Standards Division now part of today's Data Acquisition Services Branch at AES Downsview. Graham will be sadly missed by his family and many friends. He is survived by his wife Marjorie, one son, two daughters and four grandchildren.

Over the last million years or so, the Earth experienced a series of ice ages lasting about 100,000 years and separated by a warm interglacial period of 10,000 years. The last ice age called the Wisconsin ended about 10,000 years ago. At its maximum, air temperatures in southern Canada were 5 to 8 degrees colder than they are today.

A 25-cm snowfall over 4000m² (1 acre) of land weighs about 113 tonnes or 100,000 kg. A 40-cm dry fluffy snow weighs about the same as a 20 cm moist snow.

Letters to the Editor

Dear Sir,

I feel you owe an apology* to Dave McKay and Roger Van Cauwenberghe concerning an article in the Employee/Equipment series appearing in the July/August 1985 issue of Zephyr. The 78D anemometer was in fact invented by the

A Weekend TV Weatherman tells all:

There is a quickening of tension inside me, as a disembodied voice in the rafters announces. . . " and now Peter Jedicke, with our weather forecast".

A Molson's commercial is playing on the big TV screen standing next to camera 2. When the cameraman nonchalantly announces "less than ten seconds," I have to concentrate hard on getting the beer melody out of my mind. I run a damp finger over my temple to be sure no lock of hair has fallen out of place. The red light above the camera flares on, and — out of the corner of my eye — I recognize the person who has replaced the beer commercial on the TV monitor.

"Last night's snowfall and a clear, blue sky this morning made this just the kind of day the skiers have been waiting for. Our weather map of North America shows just why we had that snowfall, so let's have a look. . ."

It's a Saturday afternoon in London, Ontario, and viewers of Channel 10, CFPL-TV, are watching me explain what I have spent the last three hours figuring out for myself. I'm not a professional meteorologist — unlike the regular weekday weatherman — and I don't work for AES at the London Weather Office, as the other half of the alternating-weekend weather team does. I'm an astronomer by disposition and I studied Physics. I did learn how to tell a dry adiabat from a wet bikini, but when they talk about vorticity advection, I get all twisted up.

I arrive at the TV station at about 3:30 pm. on a typical Saturday. I carry with me sketches of the satellite map I saw on the PBS programs "A.M. Weather" and "Weather World" the day before, and I've been watching the sky all day, so I think I have a reasonable idea of where we stand among the weather systems. I walk into the recently — renovated newsroom and greet the regular team, busy working on the other twenty-seven and a half minutes of the program.

The weather desk is located in the far corner of the newsroom. It has windows facing south and east. The old newsroom was in the basement, so this is already an improvement — how did I get by without windows? The first thing I do is turn on the radar recorder. It'll take a few minutes before the first map of southwestern Ontario is out, so I move to the teletype room and pick up the overwhelming sheaf of paper the editor has torn from the printer for me since about midnight.

I sit at the desk to peruse all this material. Much of it is either too detailed or too far away from London to be useful to



me on an average day — only rarely does the forecast for Wappiskat affect my own. I do check for extraordinary facts, such as 58.7 mm of rain at Kenora, or 33 degrees at Moosonee. But what I really am looking for is the synopsis of the continental weather map and the brief descriptions of weather across the country — this hour's weather from Environment Canada.

The most important phase of my preparations is the briefing I receive over the telephone from the weather office. The technician on duty describes the latest surface map for me, gives me the local temperatures of a dozen or so stations in the CFPL viewing area, and dictates the current statistics.

Then I have to enter a series of these statistics into the Character Generator, a computer which will display them during the program. Also included are the times of sunrise and sunset, which I must look up in a table. Next, I decide what the weather "headline" will be, and type it up in triplicate.

By now, it is 5:30 pm. The old hands in the newsroom don't feel it, but there is a quickening of tension inside me as I make my last checks of the teletype and radar printer, scoop up my papers, grab my jacket and tie, and head for the studio.

Weekends are fairly routine for the technical staff. Unless a camera has broken down, the studio is cold and quiet a half hour before we go to air. I set my maps and notes on a ledge under the big board and go to work, placing magnetic symbols across North America. Temperatures for about 20 locations are included, and the warm and cold fronts and the Lows and Highs that I have decided are significant to my analysis. Then I add a few white or black clouds or possibly a radiant yellow sun or two to give the viewers an indication of conditions elsewhere. Sometimes I might use lightning bolts, wind arrows or shower symbols to highlight severe weather. On the map of southwestern

Ontario, I place the temperatures of nearby towns and cities.

I try to finish the map a few minutes before six, because this gives me a final opportunity to look outside — particularly important if the sky threatens rain. Then I brush my hair, put on my tie and jacket and adjust my microphone. By now, the cameramen have turned the studio lights on and it is much warmer. The anchorman is sitting at his desk, reading over his stories. He is calm and composed. I take my position beside the sports reporter — who always dashes in at the last moment with the latest scores — and go over the 10-second headline I have prepared. The red hand sweeps to its apex on the clock face. There is music from above and a disembodied voice in the rafters announces ". . . and Peter Jedicke, with our weather forecast."

Peter Jedicke an astronomer and a student of physics, does the weekend weather forecast for CFPL-TV London, Ontario

FRANCIS THOMPSON UPTON 1913 — 1985

Frank Upton died in Toronto on December 8, 1985. At the time of his retirement in 1975, Frank was the longest-serving employee of AES. He joined the Toronto Headquarters staff as an office boy in 1931 and was later employed as a meteorological assistant before taking the Short Intensive Meteorology Course in 1944. For the next eighteen years Frank served as a Meteorological Officer at such stations as Kapuskasing, Toronto, Malton, Trenton, Mont Joli, Portage la Prairie and Winnipeg before winning a competition for a position in the Basic Weather Division at Headquarters in 1962. Subsequently a member of the Field Services Headquarters staff, Frank brought unfailing good humour and the wisdom gained over many years of service to such tasks as managing the barometry program and coordinating weather radar installations.

If your sidewalk measures 15 m long 1.5 m wide, and the snow is dry and fluffy and is 40 cm deep, by the time you clean the walk you will have lifted 884 kg or nearly 1 tonne of snow.

At a wind speed of 160 km/h a person can lean forward on the wind with straight legs and touch the ground with his hand without falling.

ZEPHYR BREEZES

A film producer with the Nova Scotia Department of Education has written a very appreciative letter to Peter LeBlanc, acting regional director, Atlantic Region about some-split second forecasting by AES weather people in Bedford, N.S. "who usually take a fearful kicking over what passes here about as weather".

Apparently on the day that he planned to do some on-location filming, he obtained a courteous and detailed briefing on the configurations and progress of the precipitation which had been forecast as intermittent, but which promised a 90-minute dry spell about 1 p.m.

Eating an early lunch and fatalistically watching the rain come down, the producer suddenly witnessed a "miracle": "Sharp at 12:45 the drizzle stopped and did not recommence until 2:30, just as you people predicted". Result: he was able to complete his planned videotaping.

Ron Miller, chief of Observational Systems, Downsview has answered our question posed in the last issue: Why was Medicine Hat called "The place where the Weather comes from"? Recalling an article he wrote for the WMO Bulletin in 1972, Mr. Miller quotes: "Medicine Hat in the Province of Alberta, was for many years the most north-westerly station on the weather map and, for this reason, this station became known over the North American continent from the frequent repetition in the forecast of such words as "another cold wave is moving south-eastward from Medicine Hat".

The Toronto Star reports that they had a New Year's telephone conversation with AES weather forecaster Larry Flysak, who hails from Winnipegosis, Manitoba, but who has spent six months at Alert N.W.T. "the world's most northerly habitation". Unfortunately the line was rather faint at the time, but the Star did learn a few intriguing details — that Alert is too far north for black flies and mosquitoes — or for television — that it was 35° below zero outside and dark around the clock — that the three forecasters, two men and one woman, "do a lot of reading in their spare time", and enjoy a beer once in a while.

Bob Boggs' article on the universal interest in the AES Weather Trivia Calendar can be backed up by at least one item that has claimed the attention of the editor of this column. Col. Carlos Grazzi, president of the World Meteorological Society's Regional Association III, based in far-away Montevideo has written a special letter of congratulations to Jim Bruce on the calendar. The translation from the Spanish reads: "The calendar provides clear evidence of the detailed studies carried out on Canadian climate anomalies".

The last time we mentioned Ron Baird's fabulous weather sculpture that adorns the front lawn of the AES Downsview Headquarters, we quoted an item in the Toronto Star which described it as the best sculpture in North York. The other day a senior designer for the Province of Ontario's pavilion at Expo '86 in Vancouver dropped in for some graphic material and was almost bowled over by the sight of the huge clanking "monster". All he could say was: "Why, that's the best sculpture in Toronto!".

This column learns with sadness that Bernice Brent, editor of Zephyr for nearly a decade during the seventies recently passed away. Besides being an editor and information officer Miss Brent worked as the first woman presentation technician at Dorval Weather Office in the mid-sixties, retiring seven years ago. She last visited AES in October on the occasion of Jean Schlenkrich's retirement.

The Cray Supercomputer located at the Canadian Meteorological Centre, Dorval, Quebec will soon be equipped with an uninterrupted power supply. Last December it was announced that a joint contract for a 960-kilowatt diesel/rotary system had been awarded to Mechron Energy Limited of Ottawa and to Holec International of the Netherlands. Apparently the Mechron/Holec machine is similar to those used in Europe during the past 15 years and is particularly effective in supplying continuous power to large-scale computers in business, industry, utilities and government during power interruptions.

Jean Schlenkrich Retires

After a 38-year association with the weather service including more than a decade with Information Directorate at AES Downsview Headquarters, Jean Schlenkrich celebrated her retirement on October 17.

Among a small group of friends and colleagues attending the ceremony there were several who recalled working with Jean during the early 1950s at the Weather Verification Unit in the old Bloor Street Headquarters. Others paid tribute to Jean as a former Beauty Queen and much sought-after model for livening up press photographs of weather instruments. Still others mentioned Jean's exceptional capabilities in the information unit — especially her talent for organizing tours of the AES building for outside visitors and her ability to deal with countless public enquiries, both by telephone and in person.

John Cameron, head of communications for the Directorate in Ottawa was master of ceremonies. During the gathering he presented Jean with a letter signed by prime minister Brian Mulroney thanking her on behalf of the government and people of Canada for 38 years of loyal service. He also presented her with a silver medallion bearing the inscription: "for long and efficient service" and with gift certificates contributed to by many past and present employees of AES.

Fred Page who retired last year as head of International Affairs for AES, outlined Jean's early career and added several intriguing anecdotes about her days as a beauty contest winner.



Jean Schlenkrich receives an award for 38 years service from Communications Director, John Cameron, Ottawa.

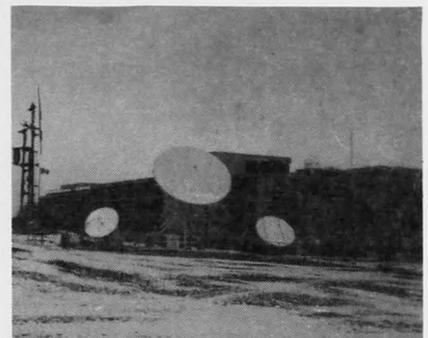


Louis Robichaud (right) receives an award from Brad Finch, superintendent, Weather Office Standards and Requirements, Ontario Region, on the occasion of his retirement as OIC of the Thunder Bay Weather Office. More than 160 friends and colleagues attended a banquet last October for Maurice who had spent 29 years with the weather service, 15 years as OIC at Thunder Bay. Other head-table guests were Jack Carpick, Brad Finch's equivalent at AES Central Region, Joe Adamson OIC Windsor Weather Office and of course Mr. and Mrs. Robichaud. M.C. was Thunder Bay presentation tech. Ronald Harrison.



Margaret R. Cozry, manager of the Ojibway-owned "The Algonquians" art and craft shop, looks on as a customer examines her wares during Native Awareness activities at AES Headquarters on November 19 and 20, 1985.

The AES Native Employment National Committee's objective is to increase the number of Native employees within the AES, either through direct hiring or the letting of contracts. There are currently 13 Native employees in the AES, and 62 Native employment contract positions, of which 30 fall under the Arctic Aviation Weather Reporting Stations program.



NOW WE ARE THREE — to the uninitiated it would appear that the weather satellite dish "family" located near the south end of the AES Downsview building has given birth to a new member. Not so! The new 4.5 metre dish (left) is not a GOES satellite dish like its two companions but part of the METSIS satellite broadcast meteorological information system which will make satellite-distributed weather information available at nine weather offices by spring 1986. Installation of the new dish is important because it is one of the rare units in the chain to have a two way link with a computer. Announcement of the \$47.5 million METSIS contract between AES and Telesat Canada was made last July. The reason the new dish is in the weather satellite enclosure is that it is temporarily using a spare pad located there.

With a memo to all AES administration and financial officers, Christine Stuart (AAG), has distributed a copy of a so-called "final reminder" notice sent to AES from a world directory based in Kowloon, Hong Kong, for a listing fee of 420.00. Stating that AES had not requested a service "that in some instances probably does not exist", Ms. Stuart warns: "charging for inclusion in remote unfamiliar directories is a very popular method of defrauding and large business organizations or is, at the very least, a purchase of a marginally legitimate service, made hurriedly without sufficient consideration. "She adds that a percentage of busy administrators are intimidated by the inferred "rush" and accept the demand at face value, paying the required amount. To counteract this practice, she suggests reading the fine print. For instance, the "reminder" in question, had the following printed on its back: "This is a solicitation and not an assertion of a right to payment".



The Atmospheric Environment Service management Committee met last fall at the Canadian forces base in Winnipeg. They are left to right, Dr. Richard Asselin, Brenda O'Connor, Gordon Shimzu, Dr. Philip Merilees, Lloyd Berntsen, Michael Balshaw, Jim Bruce (presiding), Dr. Ian Rutherford, Patrick Pender, Joe Boll, Dr. Andrew Macpherson, Avo Lepp and Jean-Guy Coté.

CHANGEMENT DE PERSONNEL / STAFF CHANGES

Nominations/Avancements Appointments/Promotions

H. L. Ferguson sous-ministre adjoint/Assistant Deputy Minister

D. Whyte (EG-5) tech. en mét./Met Tech., WAED, Edmonton, Alb./Alta.

R. Ruff (EL-5) tech. sup. en radar/Radar Technologist, ARPP, King City, Ont.

R. Sorokowsky (EL-5) tech. sup. en radar/Radar Technologist, ARPP, King City, Ont.

M. Wasey (EL-6) tech. sup. en physique des nuages/Senior Cloud Physics Tech., ARPP, Downsview, Ont.

S. Leger (EG-5) observateur des glaces/Ice Observer, Centre de prévision des glaces/Ice Central, Ottawa, Ont.

J.D. Young (OCE-2) opératrice de machine de traitement de text/Office Composing Equipment Operator, APEC, Downsview, Ont.

R.L. Milo (MT-5) météorologiste/Meteorologist, DMETOC, Ottawa, Ont.

L. Couturier (MT-3) météorologiste/Meteorologist, CFFC, Trenton, Ont.

J. Archibald (MT-3) prévisionniste de service/Duty Forecaster, CFFC, Edmonton, Alb./Alta.

B. Julien (MT-3) prévisionniste de service/Duty Forecaster, CFFC, Edmonton, Alb./Alta.

L. Boulay (MT-3) prévisionniste de service/Duty Forecaster, CFWD, Greenwood, N.E./N.S.

P. Ford (MT-3) prévisionniste de service/Duty Forecaster, CFFC, Trenton, Ont.

G. Burke (MT-3) prévisionniste de service/Duty Forecaster, CFFC, Edmonton, Alb./Alta.

F. Panet-Raymond (MT-3) prévisionniste de service/Duty Forecaster, METOC, Esquimalt, C. B./B.C.

J. Charest (MT-3) prévisionniste de service/Duty Forecaster, CFWD, Moose Jaw, Sask.

S. MacPherson (MT-3) prévisionniste de service/Duty Forecaster, CFWD, Comox, C.B./B.C.

L. Lavoie (MT-3) prévisionniste de service/Duty Forecaster, CFFC, Greenwood, N.E./N.S.

G. Roberge (MT-3) prévisionniste de service/Duty Forecaster, CFFC, Greenwood, N.E./N.S.

Veillez excuser l'apparition de quelques fautes typographiques. Notre nouveau système de communication est encore à l'essai.

Please excuse the appearance of some typographical errors. We are still experimenting with a new communications system.

Mutations/Transfers

A. McCarthy (EG-4) tech. en mét./Met. Tech., OAEW, Toronto, Ont.

P. Clarabut (EG-1) tech. en mét./Met.Tech., SM3/WS3, Hope, C.B./B.C.

A. Schmiedel (EG-2) tech. en mét./Met. Tech., SM3/WS3, Cape St. James, C.B./B.C.

J. Anderson (MT-5) météorologiste/Meteorologist, PWC, Vancouver, C.B./B.C.

R. Shukster (EG-4) tech. en aér./U/A Tech. SM1/WS1, Moosonee, Ont.

A. Fergusson Captain, SMFC/CFWS Baden Soellingen, Allemagne de l'ouest/West Germany

C. Smith (EG-4) tech. en mét./Met.Tech., Gander, T.N./Nfld.

R. Desjardins (EG-4) tech. en aér./U/A Tech. SM2/WS2, Frobisher Bay, T.N.O./N.W.T.

Y. Gervais (EG-4) tech. en aér./U/A Tech., La Grande IV, Qc/PQ.

C. Olsen (EG-3) tech. en mét./Met. Tech., SM3/WS3, Vancouver Harbour, C.B./B.C.

W. Green (EG-5) instructeur rég. en mét./Regional Met. Instructor, Vancouver, C. B./B.C.

M. Hawkes (MT-6) officier sup. d'état-major formation et perfectionnement/Senior Staff Officer Training & Dev., DMETOC, Ottawa, Ont.

B.A. Proctor (MT-2) niv. perf. mét./Met. Dev. Level, CFFC, Edmonton, Alb./Alta.

J. Beal (EG-2) tech. en mét./Met. Tech., SM3/WS3, Fort Reliance, T.N.O./N.W.T.

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

M. Richling (EG-6) applications informatiques/Computer Applications, OAE0, Toronto, Ont.

R. Campbell (EG-4) tech. en mét./Met. Tech., AFOO, Downsview, Ont.

H. Ellsworth (EG-8) chef/Superintendent, MAEWR, Bedford, N.É./N.S.

L. Whyte (FI-2) agent des services financiers/Financial Officer, ARDG, Downsview, Ont.

W. Getman (AS-3) agent d'adm./Admin. Officer, ARDG, Downsview, Ont.

L. Reid (EG-6) inspecteur mét./Met. Inspector, MAED, Bedford, N.É./N.S.

D. Bouchard (CR-4) commis/Clerk, QAEPR, St-Laurent, Qc/PQ.

M. Lamontagne (CR-5) personnel/Personnel, QAEPR, St-Laurent, Qc/PQ.

M.A. MacLeod (MT-7) élab. prog. mét./Prog. Dev. Met., APEC, Downsview, Ont.

J. M. Masterton (PC-3) MOP, APEC, Downsview, Ont.

A. Lamont (MT-4) instructeur en mét./Met. Instructor, CFS Met. Winnipeg, Man.

Départs/Departures

J. Zawatsky, CFWS CFB, Winnipeg, Man. to AES

M. Rafique, aéroport de l'île de Toronto/Toronto Island Airport, Toronto, Ont. to Solliciteur général Canada/Solicitor General Canada

D. Daignault, OWC, aéroport int. Pearson/Pearson Int'l. Airport, Toronto, Ont.

E. Becker, CFWS, North Bay, Ont. to AES

M. Giles, Finances/Finance, WAED, Edmonton, Alb./Alta.

S. Horvath, SM3/WS3, Slave Lake, Alb./Alta.

Congés autorisés/Leave of Absence

F. Cloutier, QAEPR, St-Laurent, Qc/PQ., congé maternité/Maternity Leave

Retraites/Retirements

J.P. Bruce, sous-ministre adjoint/Assistant Deputy Minister, Ottawa, Ont. déc./Dec. 1985

H. Raynor, PWC, Vancouver, C.B./B.C. nov./Nov. 1985

R.J.O. LeRoux, ACSM, Downsview, Ont. déc./Dec. 1985

M. Robichaud, OIC, BM4/WO4, Thunder Bay, Ont. nov./Nov. 1985

D.A.R. Mettam, CFWS, DMETOC, Ottawa, Ont. oct./Oct. 1985

R.A. Strachan, AFFC, Downsview, Ont. déc./Dec. 1985

S. Checkwitch, opérations de prévision/Forecast Operations, WAEM, Edmonton, Alb./Alta. déc./Dec. 1985

Décès/Deaths —

V.J. Pearson, SSD, aéroport int. Pearson/Pearson Int'l. Airport, Toronto, Ont. oct./Oct. 1985