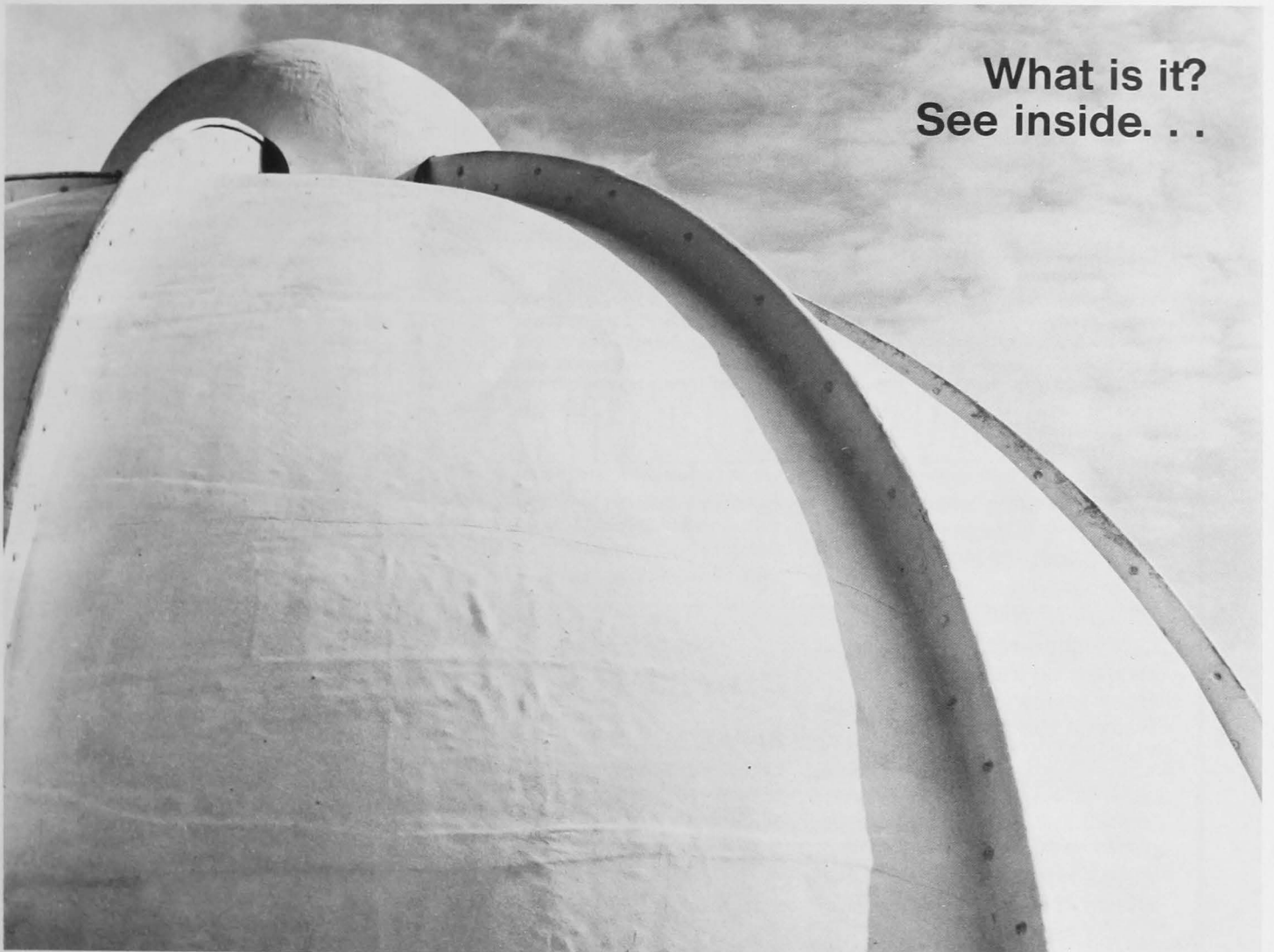


September/October 1981

ZEPHYR



What is it?
See inside. . .



Environment
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Canada

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Cover: No it is not a giant's helmet or a metal igloo, it is an AES upper air station dome. For more details, see page 9. (Applied Photo)

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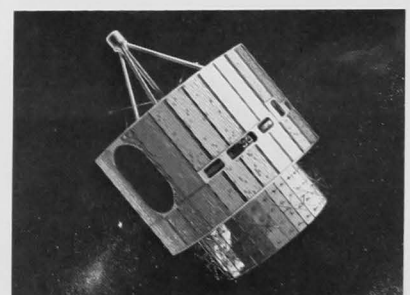
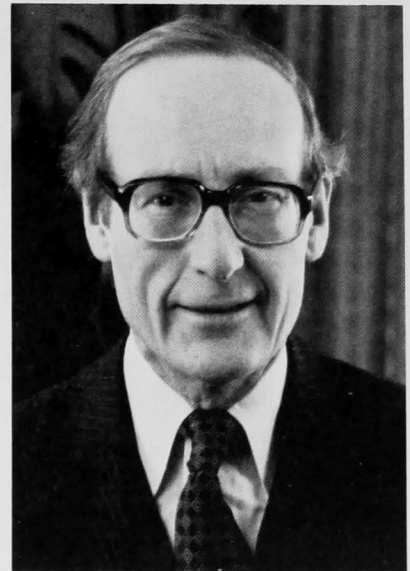


Environment
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Service de
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US Mandarins get first hand information on acid rain

Sixteen U.S. congressional staff spent two days in Canada being briefed on the causes and effects of acid rain, the environmental bomb of this decade.

The briefing was a joint effort between the Ontario Ministry of the Environment, Environment Canada and External Affairs. The object was to impress upon the congressional staff the seriousness of the environmental threat posed by acid rain, and how relaxing some of the regulations of the U.S. Clean Air Act (up for renewal this September 30) would have dire consequences for the North American environment, particularly in Canada.

The schedule of activities began on August 27 in Toronto with federal and provincial overviews, a film presentation by well-known Chicago T.V. weather personality Walter Lyons, titled "Satellite Observations of Persistent Pollution Episodes," and presentations and discussions on long-range air pollution. Lunch at the Downsview cafeteria was followed by a quick tour of the satellite laboratory and a live demonstration of acid rain instruments.

The visitors, and designated Canadian escorts, then boarded a plane and flew to the Muskoka area. There, facing the seriously affected Plastic Lake, they were informed of recent scientific findings and impacts on water resources, forests, and soils.



Demonstrations and displays were set up in the Downsview building lobby to coincide with the visit to AES by US Congressional Aides. Wes Kobelka of the Boundary-layer Research Division is seen demonstrating pH monitoring equipment, used to measure the acidity of a sample of rain. Wet weather at the time of the visit enabled the sample to be obtained right outside the building.

The tour ended in Ottawa, where Deputy Minister Blair Seaborn and a panel of government officials discussed the policy implications and the urgent need to reduce emissions. "Canada and the U.S. must

come to grips rapidly with this problem" said Mr. Seaborn, "and develop jointly an effective mechanism to deal with the long-range transport of trans-boundary airborne pollution."

AES initiatives at WMO meeting

The theme of the scientific lectures at this year's Executive Committee meeting of the World Meteorological Organization held in Geneva June 8-17 was acid rain and Dr. Douglas Whelpdale of the Air Quality and Inter-Environmental Research Branch of AES, currently working at the Norwegian Institute for Air Quality Research, was one of the three principal speakers on this topic.

Attending the WMO meeting were the heads of 29 of the world's national weather services and representing Canada was ADMA Jim Bruce, assisted by Jim McCulloch, director general, Field Services and Fred Page, Atmospheric International Affairs.

Major items on the agenda concerned

the three top priority programs of WMO: the World Weather Watch, the World Climate Program and technology transfer to less developed Services. In addition the Executive Committee considered recommendations for the joint Precipitation Enhancement Program in Spain and approved an excellent statement on the current status of knowledge of weather modification for general distribution.

Informal discussions were held with Japanese Meteorological Association Director Masuzawa, to obtain that country's support of a joint Canadian-US Pacific ships of opportunity radiosonde program.

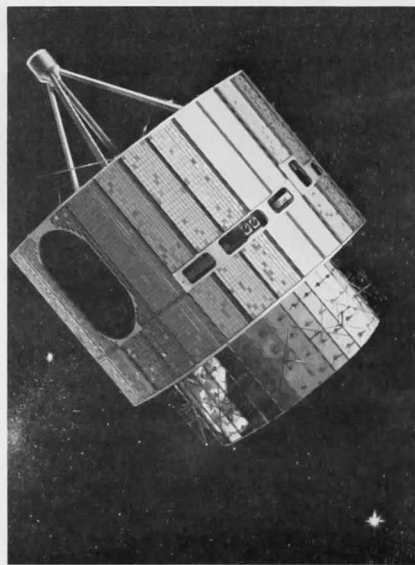
The theme for WMO Day March 23, 1982 was chosen as the role of the

Weather Observer. Mr. Bruce has suggested that a public information program be launched here honoring both volunteer and professional observers in Canada.

Mr. Bruce noted that "thanks in large measure to the efforts of Bill Markham, director Ice Branch," a new code for international exchange of sea ice information had been approved.

The next WMO Executive Committee meeting has been scheduled for June 14-26, 1982. Chairman of this year's meeting was Dr. Roman Kintanar, WMO president and director general of the Philippines Atmospheric, Geophysical and Astronomical Services Administration. He was assisted by Professor Aksel Wiin-Nielsen, secretary general of WMO.

PADS system brings improved forecasts to the west



The GOES West Satellite is a major link in the new PADS weather system.

This summer AES launched a brand new system of weather observing on the west coast. Known as Pacific Area Data Systems (PADS), it uses a variety of interconnected components, including satellites, drifting ocean buoys and automatic weather stations.

PADS is designed to help many western Canadians whose livelihood is affected by the weather. Use of advanced technology will ensure improved meteorological forecasts.

One of the highlights of PADS has been the recent opening of the satellite image receiving station in Richmond, British Columbia. This is able to receive both visible and infra-red pictures from the "GOES WEST" satellite, parked in fixed or "geostationary" orbit 35,000 km up in the stratosphere. Thanks to a \$2.5 million contract signed with MacDonald Dettwiler and Associates of Vancouver, the station will have an advanced weather information processing system, capable of receiving data from the U.S. National Environmental Satellite Service in Wallops Island, Virginia. A big plus is that flat background maps and satellite position changes can later be added in Vancouver, enabling photographic cloud views of the north Pacific to be produced in the Pacific Weather Centre. An even more sophisticated touch will be added in 1982 – installation of a data analysis system to allow meteorologists to study satellite images on a TV screen. They will use colors to determine cloud heights or distinguish between fog, ice and snow. Animated image sequences will show the

development of weather systems and will allow measurement of high altitude winds. From these sequences meteorologists will detect and follow storm centres, weather fronts, troughs and ridges as forecasting aids.

After rigorous and extensive testing in the Pacific Ocean, it was decided to add drifting buoys to the PADS program. These low cost weather sensors with life spans of 1-2 years, send air pressure and sea temperature readings to constantly orbiting polar satellites from remote Pacific locations. Buoy signals are then picked up and computed at such ground receiving stations as Vancouver, Edmonton and Winnipeg.

Since AES has had lots of experience using automatic weather stations, it was a logical step to include them in the PADS program. Three small Bristol Aerospace MAPS^R stations relying entirely on basic power sources like solar panels, have been installed on the rugged coasts of Charlotte Island and Vancouver Island, B.C. They send hourly reports on air pressure, temperature and winds to the GOES satellite which then go on to Wallops Island, Washington, Toronto and eventually* Vancouver, where the MAPS^R reports are very useful for issuing severe weather warnings.

Now in the process of assembly, the PADS system has the big advantage of being able to expand to keep pace with advances in meteorological and satellite technology.

Lifesaving course at AES

Fifteen employees from AES, Downsview, recently completed a twelve hour course in the administration of cardiopulmonary resuscitation.

May Hetherington, occupational health nurse, explains the importance and benefits of the course: "Cardiac arrest ranks as the number one cause of death in Canada. More than 60 per cent of these deaths occur within two hours after the onset of symptoms and before the victim receives proper medical treatment and attention. CPR is an emergency first aid procedure to maintain heartbeat and breathing until professional medical treatment is available and it has managed to save many lives."

More than 30 persons enrolled in the course but unfortunately only 15 could be

accommodated. "The remainder," says Mrs. Hetherington, "and others who want to broaden their awareness, especially first aid attendants, will get a chance to do so in subsequent courses. And they will probably be the shorter, four-hour, life-saver version."

In a letter of commendation to the course developer, the Ambulance Services Branch of the Canadian Heart Foundation, Phil Aber, Director of AES Training Branch writes: "I found the course interesting, well presented and practical. The material was completely relevant and I believe that I have gained a competence which increases my capabilities and my usefulness in the community at a very basic level."



The Breath of Life – how to administer it properly was learned in a special 12-hour course taken recently by more than a dozen AES staff members.

Task force will help improve links between AES, broadcasters

As a result of participating in a panel discussion at the Annual meeting of the Radio and Television News Directors Association (RTNDA) in Edmonton in June, ADMA Jim Bruce and Jim McCulloch, Director General field services, suggested the setting up of a joint Task Force to look into the whole question of delivery of weather information from AES to broadcasters and subsequently to the public.

The Task Force will outline the services AES presently supplies to Canadian radio and TV stations, ascertain what the broadcasters require, recommend methods of bridging the gap between available and required services, and establish an ongoing process for consultation.

The decision to establish the joint Task Force follows recent criticisms by Canadian broadcasters of services provided by AES. Their complaints focussed on slowness in receiving warnings of severe local storms, reduction in the number of forecasts, referrals to private meteorologists for special services, the size of forecast areas, and other problems related to budget cuts and resource constraints.

Barry Pauley of CHYM, Kitchener, new president of RTNDA accepted the idea of a joint Task Force on behalf of his organization, adding that he was greatly

encouraged by the broad goal of the task force, "that of developing a proposed new national policy statement on relations between AES and the broadcast media."

The task force findings and recommendations will be completed by December 1, 1981 and will go to both RTNDA and Environment Canada.

RTNDA has named Al MacKay of television station CJOH in Ottawa, and Mike Cleaver of radio station CJCA,

Edmonton to represent it on the Task Force. The AES team will consist of George McPherson, Ontario Regional Director, Toronto, Dick Nelis, OIC Atlantic Weather Centre, Bedford, Francis Bowkett, Chief of Weather Services, Edmonton, Mac MacLeod, Weather Services Division of Field Services Directorate and John Cameron, Director, Communications, ID, Ottawa.

Workshop on CO₂ effects

A workshop sponsored by the U.S. Department of Energy to discuss ways to develop a research program to detect the effect of increasing levels of CO₂, was attended recently by about 60 persons including Philip Merilees, chief scientist, Canada Climate Centre.

Dr. Merilees reports that the meeting included presentations and panel discussions focusing on CO₂ effects in polar, atmospheric, marine and biospheric situations. He was a member of the workshop's atmospheric panel.

"The two overriding issues," explained Dr. Merilees, "are the detection of cli-

mate change and the attribution of such change to CO₂. The first issue is complicated by the thermal inertia effects of the oceans which tend to delay atmospheric responses."

He added that there is some hope that further research will indicate that the climate change due to CO₂ will be distinguishable from changes caused by other sources, for example, solar modifications.

Standing a good chance of acceptance is a workshop recommendation for high quality monitoring in the spectrum of CO₂ emissions. Observations would be made from the ground as well as from satellites.

AES has innovative library week

The celebration of Library Week started on the morning of June 22 at AES Headquarters in Downsview. The festivities were attended by Dr. Warren Godson, acting ADM, and about 140 AES employees, who temporarily interrupted those reading newspapers and periodicals.

The Library staff, led by chief librarian Mary Skinner, displayed posters of various activities as well as a look into the future of library automation. Said Jan Glover, assistant chief librarian "Very few people seem to know that we now can offer computer on-line searching on many subjects and that we have materials on other than atmospheric sciences. We also have a number of paperback novels donated by AES personnel."



Taking a colourful part in celebrating Library Week at AES are, back row, left to right: Mary Skinner - Chief Librarian, Lilita Stripnieks, Karen Anderson, Daphne Sanderson, Valerie Anderson. Front row, left to right: Nora Burnett, Verna Gilchrist, Jan Glover, Huguette Ross.

Besides educational displays, there were fun events: a large jigsaw puzzle on lightning; a picture display of old photos and one of Library "funnies". Lilita Stripnieks, Reference Librarian, did computer searches all week on topics of any interest and colourful directional signs gave the library a festive atmosphere.

Ed Millar, AAF, won the door prize; he guessed that the number of years of library service represented by the library staff was 97. Correct answer was 97.2.

A proud Mary Skinner concluded: "The large participation in the Library Week gives promise for the event to become an annual occurrence." Activities were supplemented by a light buffet.

AES flies with CCOPE to learn what makes it rain



Clouds in the CCOPE project area as seen from the Canadian Twin Otter.

A dozen Environment Canada and National Research Council scientists and technicians this summer took part in one of the most comprehensive meteorological experiments held in America.

In announcing Canada's participation, John Roberts, Minister of the Environ-

ment and Minister of State for Science and Technology said: "These will be intensive studies of cloud types which bring life-giving rain to both the Canadian Prairies and the American High Plains during the summer. It is highly important to learn more about the behaviour of these

clouds if we are to understand and eventually alleviate drought on the Prairies."

The study was slated to last three months and was centered in Miles City, Montana where 200 scientists from the U.S., Canada, U.K., Italy and Switzerland using aircraft, satellite-linked ground stations and weather balloons examined the entire life cycles of clouds - from birth through maturity and death. The clouds investigated were as close as 140 km to the Saskatchewan border.

The project is called the Co-operative Convective Precipitation Experiment (CCOPE), organized by the U.S. National Centre for Atmospheric Research and the Bureau of Reclamation of the U.S. Department of the Interior, with participating Environment Canada scientists from the Cloud Physics Research Division of AES. The team, lead by Bob Schemenauer, used a specially equipped Twin Otter aircraft as part of its equipment.

On his return from Montana, Dr. Schemenauer explained that CCOPE did not engage in any cloud-seeding operations. "We will study in great detail natural rain formation in summer clouds. Only then can we determine the ultimate need and probable success of cloud-seeding programs to increase rainfall in the drought-threatened Prairies."

Saskatchewan has severe weather watch

Saskatchewan's severe weather watch program went into operation May 10, 1981. Managed by AES and supported by the province of Saskatchewan, the program aims to help prevent injury and loss of life and to reduce damage to personal property by providing timely and detailed warnings of severe summer thunderstorm activity.

According to Central Region director Mike Balshaw, severity and imminence of upcoming severe weather will be marked by three special terms:

- *severe weather watch* when thunderstorm conditions such as large hailstones, intense lightning, heavy rain, violent winds

or tornadoes appear likely in a forecast area, a severe weather watch bulletin will be issued. Issued six hours in advance, it is intended to alert the public to severe weather.

- a *severe weather warning* is issued when severe and dangerous thunderstorms occur or are imminent in parts of a forecast region. Information on the location and severity of storms will be provided to assist the public in taking precautions.

- a *tornado warning* is issued only if a tornado is known to be in the area, to allow the public to find refuge and make other emergency preparations.

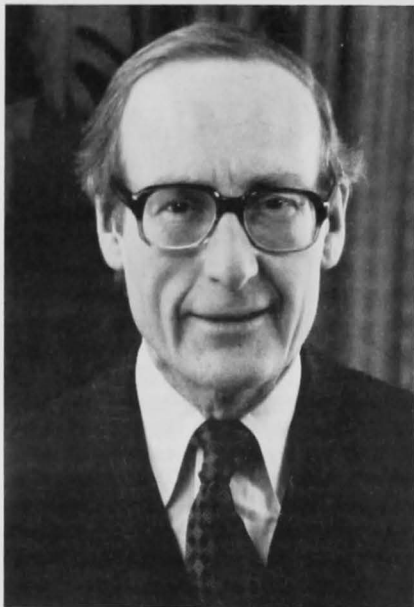
To transmit these warnings AES relies

on weather radar and a province-wide network of volunteers to detect thunderstorm activity.

Mr. Balshaw said more than 1,000 weather watchers to date have volunteered to support the program. He added that once the direction and severity of a thunderstorm had been determined, warnings would be broadcast immediately to the affected area by radio and television.

Concluded Mr. Balshaw: "While it must be recognized that the severe weather watch program cannot solve all the problems related to predicting, observing and disseminating information about violent thunderstorms, these new procedures are an important step in the right direction."

Blair Seaborn keynote speaker as AES sets its priorities



Blair Seaborn

When AES directors met in Cornwall to discuss current and future issues of the eighties, they wanted to put their deliberations in the context of the questions facing the Department of the Environment as a whole. The natural choice for a keynote speaker was deputy minister Blair Seaborn. The DM covered a wide range of topics concerning the department's current and proposed future activities. He explained that two of the government's major priorities – macro-economics and energy problems – are of vital interest to the department since DOE's position is that there is no conflict between environmental protection and management of environmental resources in support of economic development.

Mr. Seaborn said that the "Conservation Ethic," emphasizing the wise use of national resources, created a very positive role for DOE and went far beyond a merely regulatory or passively restraining stance. DOE is concerned, as well, with

minimizing man's adverse impact on the environment and with the reverse, adapting man's activities to the Canadian environment. It shares the macro-economic concerns of the government and its related energy policy. The Department has the expertise and major national responsibilities for such basic resources as land, air, water, forests, parks and wildlife. It has a base from which to also influence the management of other resources and this could be done with great effectiveness because DOE has *quality* knowledge which it knows how to use to affect management decision makers.

According to Mr. Seaborn, DOE's energy roles include the need to warn against unwise energy developments. In addition, the Department provides basic data and information for both traditional energy developments, such as hydropower, and alternate energy areas such as solar energy, biomass, wind and tidal power.

The DM warned DOE in its "delight" at being relevant to two top government programs, not to forget its internal in-

terests including national parks, the weather service, wildlife, inland waters, acid rain and toxics, the later two currently having a "very high priority" for DOE.

Turning to the role of AES within DOE, Mr. Seaborn stressed that AES is not the same as the former Meteorological Service of Canada – but much more. He added that AES employees' concern for environmental quality was a major responsibility and an integral part of their work, "It is a natural role for AES, given that the atmosphere is the most pervasive environmental element," he continued.

"In addition," the DM told delegates "AES forecasting services extend beyond air movement to include ice, sea-state and air quality conditions. Let us hope that iceberg movements will be added when the Ice submission paper finally gets Cabinet approval."

He concluded that AES must continue to be an effective and reliable weather and climate service, since, "AES is Canada's national weather service – and more."

AES – What does the future hold?

The past summer has seen the culmination of considerable effort by AES managers to chart a course for the Service's future. One of the main catalysts for this effort was the first draft of the AES Concept 1990, including the background papers and strategic recommendations, that were prepared by Roy Lee, director Administration Branch and Ray Fichaud, regional director, Quebec Region. The ideas and suggestion for future actions in these documents were gathered by the authors from AES employees across the country. In July the senior managers of AES met in Cornwall to review these

ideas and to formulate a set of Service priorities and goals for the next five years, which will form the basis for AES input to this year's Departmental planning cycle.

Following several working group and plenary sessions at Cornwall, a set of Service priorities for the period 1981-86 were produced, then formalized by the Atmospheric Environment Service Management Committee in August. Because these priorities will influence the direction that the Service will be heading over the next five years, they are being reprinted in *Zephyr* in full in order to reach as many AES employees as possible.

AES Priorities – 1981-86

Category A

In order to carry out these high priority programs, AES will seek new resources from outside of the Service. If unsuccessful, funding at an appropriate level will be reallocated from lower priority programs.

- *1. AES must give special attention to improving the dissemination, credibility, accuracy and its verification and utility of its Day-1 forecasts and weather warning services.
- *2. AES must establish air quality services with a special emphasis on an extended program to examine the Long Range Transport of Airborne Pollutants (which currently terminates in 1983/84), and on a program to deal with toxic chemicals. Special attention will be given to the development of regional monitoring and research.
- *3. AES must provide the people of Canada with comprehensive climate services by the development of the Canadian Climate Program which incorporates improved climate services, research on, and provision of climate predictions, and an enhanced understanding of the impact of climate variations and increasing Atmospheric CO₂ concentrations and other contaminants on the Canadian climate and society.
- *4. AES must improve its services in the French Language to Canadians.

Category B

AES will seek new resources from outside the Service (including cost recovery) to carry out these initiatives. If unsuccessful, improvements will be made without significant reallocation of resources.

- *1. AES will increase its support to the development of non-renewable and renewable energy forms by:
 - 1.1 improved environmental design, prediction, advisory and assessment services through expanded weather, climate and ice services programs.
 - 1.2 increased participation in programs which support the use of renewable energy forms including hydro-electric, biomass, solar and wind.
- *2. AES will significantly improve its weather services in support of aviation safety, consistent with the government decisions on the recommendations of the Dubin Inquiry.



When senior AES managers met in Cornwall this summer they posed for this photo in informal attire. They are seen front row: left to right; Ray Fichaud (QAED), Gord McKay (CCAD), Yolande Baldachin (ID), Jim Bruce (ADMA), Jim McCulloch (AFDG). Second row: Bob Vockeroth (AFPD), Morley Thomas (CCDG), Jack Mathieson (PAED), Avo Lepp (OAP), François Lemire (Met-L), Ian Rutherford (ARMD), Hugh O'Brien (A/MAED). Third row: Pat Pender (A/OAED), Hubert Allard (A/QAED), Alec Chisholm (ARPD), Jaan Kruus (ACSD), Howard Ferguson (ARQD), Brian Adamson (ADEC), Richard Asselin (DMETOC), Gord Shimizu (ADED), Don Smith (ACDG), Jim McTaggart-Cowan (APCO), Denis Webster (ADEC), Roy Lee (AABD). Back row: Bob Strachan (AFFC), Kirk Dawson (ACPD), Bill Markham (ACID), Warren Godson (ARDG), Phil Merilees (CCRD), Joe Boll (A/AABD), Bev Burns (WAED), Phil Aber (ACTD), Mike Balshaw (CAED), Fred Roots (Science Advisor, DOE), Brian O'Donnell (ADED).

3. AES will improve its services to sectors of the economy involved in food production, such as agriculture and fisheries.
4. AES will improve its contributions to Departmental programs in forestry.
5. AES will improve its capability to respond to environmental emergencies for both natural and man-made incidents.
6. AES will promote the recruitment and advancement of under-represented groups.

Category C

These items require policy redirection, or special emphasis, but no substantive or new funds will be sought or reallocated.

1. AES will use IMPAC projects as a vehicle for improving its human resource management, and management practices and controls.

2. AES will stimulate, and promote atmospheric science and engineering activities in Canada and cooperate with Canadian industry, universities and other levels of government to supplement and complement its own functions and competence.
3. AES will emphasize the exploitation of technological change to improve efficiency and effectiveness of its operations and services.
4. AES will review its policy on automation and develop an automation action plan.
5. AES will actively participate in initiatives involving the north.
6. AES will undertake to define core services and or policies on levels of services and keep the definition under continual review. □

**Major priorities.*

AES automates its upper air stations

by Ken Devine

AES is automating its 33 upper air stations. By using its new Aerological Data Reduction System (ADRES) it will end present manual computation and link general purpose minicomputers to its radiosonde (balloon) network.

The new ADRES as designed by SED systems (Saskatoon) was displayed at the Canadian Meteorological and Oceanographic Society's annual congress in Saskatoon last May. It showed ADRES' capability of acquiring wind data automatically and of computing all information quickly and efficiently, putting it out via punched message tape and using a sophisticated command language.

ADRES has also been operating experimentally for the past three years with five prototypes, at Eureka and Norman Wells, N.W.T., Shelburne, N.S. and two in Toronto for testing and training.

Seeking to automate wherever possible, AES first considered using computers for its upper air network in 1972. Reducing personnel could save costs. And since these isolated posts had always had considerable staff turnover, adding automation was not considered a threat to morale. In fact it could raise spirits by lessening the drudgery of manual computation.

The real advantage of automated computing is that it processes absolutely reliable information. In the past, the urgent need to prepare data for instant transmission caused errors. A computer-based system removes this time pressure and automatically controls the quality of the information.

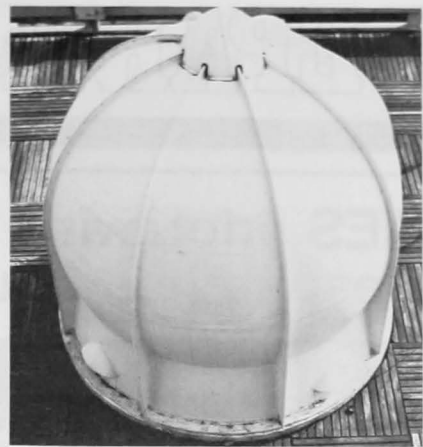
The new-style upper air station now contains an ADRES equipment rack and a printing terminal, forming the system's computerized nucleus. Manual data chart recorders still record temperature, humidity and pressure but the tape punch reads the radiosonde's pressure chart and delivers the total message. The printer is both an input and an output device. As before, the receiver is located in a dome atop the office building.

The heart of ADRES itself is the minicomputer. Its programs are retained on standard eight inch floppy disks. It's a dual disk system with one drive used for software and the other for the archiving. The software disk contains the data used for flight operations. The archiving disk stores simulated versions of old flights, allowing previously archived flights to be changed and recomputed.

Despite ADRES' highly automated character, the station operator is kept fully employed. For instance, when he sees met. data from the radiosonde traced on the record chart, he selects the significant information and enters it into the computer. Indeed, since the observer must be present, there would be no point in automating the meteorological data from the balloon flight. Involving him in actual data acquisition keeps him alert, reduces errors and prevents him becoming bored. Without prompting from the machine, he can enter, delete and modify data as required. The computer will automatically recompute results each time. The observer never has to compute data beforehand, so he can do without slide rules or plotting machines.



Author Ken Devine surveys the ADRES system, including minicomputer, paper tape reader punch, printing terminal and equipment rack, all standard gear in upper air stations. (Applied Photo)



Here's a fuller view of an AES upper air station dome. They form the roofs of the new, computerized ADRES offices.

Next to each computer is a custom electronics panel with built-in metering functions, antenna controls and computer command switches for radiosonde flights. There are also digital readouts and a remote control panel in the balloon release area. Using these displays an operator can release the radiosonde, move the ground meteorological device on target and tell the computer when wind data is valid.

The observer may display any information as needed but only the raw data may be changed. Any change in the input data automatically causes the system to recompute the calculations. The data is stored in memory during flight and transferred to the archive disk when required. It is then shipped to Data Quality Control at the rate of three disks per month.

ADRES is just one of the changes made in the upper air network over the years. Ever since the creation of remote stations with Canadian radiosonde and U.S. receivers in the 40s and 50s, the network has shown steady progress.

The introduction of ground meteorological devices (also known as theodolites or GMDs) in the late 1960s was the last major technological advance. Ground-based systems will remain the major data source for computer models in the near future, but there will probably be improvements, such as adding solid state receivers. As accuracy and detail improve, satellite data will certainly become more important. Work is also proceeding in the area of ground-based remote sensors which may one day replace some aspects of the radiosonde network.

All in all ADRES is another major advance in our upper air network, promising a faster, more reliable and more versatile output — in other words a better all-round product. □

Mr. Devine is ADRES project leader, Data Acquisition Services Branch, AES, Downsview.

DEPARTMENTS

AES supt. wins two awards despite heart surgery



Don Sumanik of the Atmospheric Environment Service in Whitehorse, wearing parka, is congratulated by Yukon Commissioner Doug Bell after being presented with the Commissioner's Award Medal. Mrs. Sumanik looks on.

Don Sumanik, superintendent of the Yukon Field Office of the Atmospheric Environment Service and a 15-year resident of Whitehorse, has received two awards for helping put the Yukon on the international cross-country ski map; this despite having to undergo two open heart surgery operations.

Last March, on the eve of the World Cup Cross-Country Skiing and the North American Cross Country Ski Championships, both held in Whitehorse, Don received the Yukon Commissioner's Award medal. He shared the award with his wife Elsie.

A couple of weeks later Mr. Sumanik

was nominated 1980 Citizen of the Year by Whitehorse Kiwanis.

Lastly he received a letter of congratulations from Environment minister John Roberts.

Previously Mr. Sumanik served as chairman for the hosting of the World Cup, the culmination of years of hard work devoted to the sport.

Before hosting the World Cup, Mr. Sumanik served for five years as chairman of the Yukon Cross-Country Ski Division and was responsible for the setting up of a system of world class lighted trails in Whitehorse. He was also past chairman of the Cross Country Ski Division of the Canadian Ski Association and was manager of the Yukon cross country ski team at the 1970 Arctic Winter Games. Finally, he helped build the new Whitehorse ski club chalet, said to be the envy of many other ski resorts across Canada.

In addition, Mr. Sumanik has coached minor hockey teams and Little League baseball teams over the years. He is also a square dance caller and a founding member of the Sourdough Stompers. Lastly he was a member of the Yukon Recreation Advisory Committee.

At the time of this second award, he was forced to enter a Vancouver hospital to undergo the second of two heart operations in three months. He is now recovering satisfactorily and hopes to be back on the job by late summer.

Bernice Sherman retires

Bernice Sherman has retired after 33 years with AES and its predecessors. Miss Sherman had been with the service since 1948 when it was the Meteorological Division of the Department of Transport. However, her professional career started long before that, in 1935, with the Western Assurance Company in Toronto.

After a successful start as a secretary and rapid growth in skills and responsibility, Miss Sherman became secretary to the director of administration in 1964. Five years later, she was promoted to administrative assistant to the ADM, a position she held until her retirement.

"Retirement to me," said Miss Sherman during the farewell gathering, "does not mean relaxing in a rocker. This fall I will

be a part-time instructor of neophyte secretaries at a business college."

The reception on July 9 in ADMA's boardroom was attended by about 60 persons, including ADMA Jim Bruce, former director general Field Services, Larry Campbell, current director general, Jim McCulloch, director general Canadian Climate Centre, Morley Thomas and former ADM Reg Noble.



On the occasion of her retirement, Bernice Sherman, administrative assistant to ADMA, receives a farewell gift from her friends and colleagues from a smiling Jim Bruce.

New data processing chief

Dr. Kirk Dawson, director Computing Services Branch, announces the appointment of Gerry E. Berlinguette as Chief of the Dorval Computing Centre. Mr. Berlinguette is a graduate of the University of Ottawa with honors in mathematics and physics. He has more than 20 years professional experience in both the scientific and business areas of computing.

After taking a Midofficer Nr 17 course with the Department of Transport, Toronto in 1960, Mr. Berlinguette spent six years with the Defence Research Board in

Ottawa. Between 1966 and 1968 he was with the National Research Council and until he joined Environment Canada in July 1981, he was with the National Capital Commission.

When computers were still in their infancy in the early 60s, Mr. Berlinguette got involved with programming and development of management systems. He also took part in the training program for meteorological officers and is familiar with AES activities.



Weatheradio in Edmonton

A new Weatheradio Canada station was officially opened in Edmonton, Alberta on April 24.

ADMA Jim Bruce welcomed 50 guests to the opening ceremony and then gave a speech praising the present usefulness and great future potential of weatheradio all over Canada.

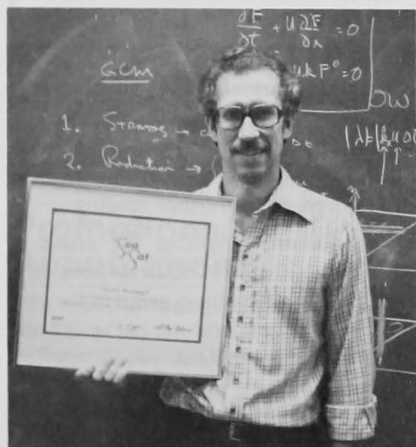
After a question and answer period,

Mr. Bruce presented each of the provincial representatives present at the ceremony with a weatheradio receiver. Others attending included school board officials, businessmen, and the press.

Edmonton Weatheradio joins the network of eight other AES radio stations operating on special frequencies in various centres across the country. The broad-

casts include temperatures, precipitation, winds, atmospheric pressure, humidity, short and long range forecasts and weather records.

The Edmonton station uses call letters LM 572, has a frequency of 162.40 megahertz (VHF/FM) and operates 24 hours a day from a studio in the Alberta Weather Centre with transmitters located at Looma, Alberta. It has a transmission range of approximately 65 kilometers.



After about 15 years of research and planning, the first "proof-of-concept" microwave remote sensing satellite, SEASAT 17, was launched in June 1978. Dr. Steven Peteherych of the Aerospace Meteorology Division, has been an active participant in the evaluation of this satellite.

He recently received two letters, one from NASA headquarters, Washington, and another from the SEASAT project, Jet Propulsion Laboratory, Pasadena, Calif. acknowledging his contribution to the success of the mission. In addition, he received a commemorative certificate from the SEASAT project (seen above) for his efforts.

William D. Wyllie retires

After 32 years as a meteorologist, William D. Wyllie retired on July 31, 1981. A farewell luncheon attended by Patrick Pender, acting Ontario regional director, and Mr. Wyllie's friends and colleagues, was arranged by Steve Lapczak and Linda Maguire.

After graduation from the University of Western Ontario (Mathematics and Physics) in 1949, Mr. Wyllie started his AES career at the Dorval office. After a two-

year stint in Winnipeg, he returned to Dorval and in 1956 he took on an assignment as supervisor in Goose Bay, Labrador.

Between 1960 and 1972 he was assigned to the Toronto weather office and then, until his retirement, to the Ontario regional office, Scientific Services section.

Mr. Wyllie says he hopes to spend part of his retirement taking some meteorologically-related computer courses.

Graduation roast

Friends and colleagues recently gathered for a surprise roast for John Knox, who retired from AES in 1975, on the successful completion of his Ph.D. studies at the University of British Columbia.

Mr. Knox joined AES in June, 1941 as a meteorological officer assigned to the RCAF's British Empire Plan as a teacher and forecaster. After completing his wartime duties, he became a forecaster at Toronto International Airport and was

eventually appointed regional director Pacific Region in Vancouver.

After his retirement Mr. Knox enrolled in the University of British Columbia's climatology program and complemented these studies with courses in Dynamic Meteorology and General Circulation at the University of Seattle, Washington.

"I was really very surprised," said Mr. Knox, "to find so many of my old friends and associates at the roast."

DEPARTMENTS

WOMEN ON THE MOVE

First Day-Care Centre

Environment Minister John Roberts recently announced that the AES will be one of four federal government buildings to have a day-care centre. The Treasury Board has approved four pilot projects and Environment Canada's Downsview building will be one of them.

Joan Masterson, a climatologist, and one of the original organizers of the project, said "It has been slow but I am happy we are finally under way." Both she and Evelyn Wilson, of the Equal Opportunities for Women Coordinating Committee (EOW), AES, say that the decision is a landmark within the public service. "The response by parents was excellent," she said. "So far parents of more than 60 children have expressed an interest."

The plans call for facilities for 40 children aged three months to five years. Who will decide which children will be accepted? "That is something the parent committee will have to work out," said Mrs. Wilson. She also advises that a legal, non-profit corporation will be formed

by the parents and it will be responsible for funding and hiring staff.

Renovations will be necessary to create suitable space—170 square metres inside, 220 outside, and this will take the major share of the cost. The day-care centre is planned to be in operation within one year.

At a working group meeting held at the AES building September 1, it was announced that preparations would begin during this fiscal year.

Wins administrative post

Shirley Smith was recently promoted to directorate administrative officer of the Central Services Directorate.

Ms. Smith, who was born in France, came to Canada with her parents in 1956 and attended McMaster University in Hamilton. She joined the Department of Supply and Services in 1971 where she worked as a junior buyer in close co-



Shirley Smith

operation with AES, eventually moving from Stores to Field Services.

Ms. Smith attributes her latest career achievement to the Special Officer Development Program to which she was introduced by Herb Kruger in 1974 when he was Chief of Observational Systems Division.

In her spare time, Ms. Smith enjoys helping her parents build a barn on their farm and she is also fond of gardening. For physical fitness she is active in golf, tennis and swimming.

BOOK REVIEW

Climate and Human Variability

Second edition. By Derek F. Roberts. Cummings Publishing Company, Inc., Menlo Park, California, 1978. 123 pages, paperback.

Reviewed by Abdel R. Maarouf

The author is Head of the Department of Human Genetics in the University of Newcastle upon Tyne, a department which he initiated in 1966. He holds a Ph.D. from Oxford and D.Sc. from Cambridge.

The book is divided in three parts. The first deals with the association between climate and adult physique. The author presents statistical relationships of basal metabolism, body weight and body shape with the mean annual temperature in different climates. The statistical significance of the correlation coefficients should satisfy the reader of the marked relationship between the morphology of the body and the climate of the region inhabited by indigenous peoples. The author then ex-

plores the physiological basis for these relationships, and reviews morphological and ethnic differences in response to climatic stress. The morphological variations are shown to be of potential significance in survival under climatic stress.

The second section considers the developmental aspects of the associations, the way in which they are brought about. The climatic relationship of body shape is discernible in childhood. A graph is shown relating the weight of newborns to the mean annual temperature. It seems, also, that babies born in hot months are smaller than ones born in cold months. However, genetic contribution cannot be discounted. While nutrition may contribute to some degree in the arctic, it exerts only a minor effect in the tropics. Direct climatic influence on growth rate is small.

The third section concerns a miscellany of characters, with particular attention to nose shape, form of head and face and

skin pigmentation. The evidence for an association of nasal shape with climate is strong. For variation in skin colour, several distinct mechanisms appear to be involved. The author then cites well over 100 references for further reading.

The author recognizes the effect of other climatic factors such as humidity, insolation, precipitation and wind speed, in addition to temperature, but selects the latter in almost all his proofs. A few examples showing the effect of the other climatic parameters may have added a flavour to the book. The book is not written for the layman or casual reader. With the detail given and many technical terms used, it is for those studying, or interested in, physical anthropology, adaptive physiology or evolutionary genetics. Nevertheless, many people in AES should find it interesting, especially those who wonder why they look or behave differently from their ancestors who lived in an entirely different climate.

Mr. Maarouf is with the Forecast Research Division, AES, Downsview.

Herman Gerger

Herman Gerger, for many years the chief of Atmospheric Instruments Engineering, died in Toronto on July 18, 1981 after a lengthy illness.

Mr. Gerger was born in Hungary in 1925 and grew up in Saskatchewan. After two years in the Royal Canadian Air Force and graduation in Engineering Physics from the University of Saskatchewan, he joined the Meteorological Service of Canada in 1950. He served at Uplands and St. Hubert, and after obtaining an MA from the University of



Toronto in 1954, at Malton, Moncton and Goose Bay. He was the Officer-in-Charge at the Goose Bay meteorological office from 1958 to 1963. He then moved to headquarters and worked for eighteen years as a manager in the Atmospheric Instruments Branch. In his last six months of full time duty, he was the acting director of the newly formed Data Acquisition Services Branch.

Mr. Gerger is survived by his wife Lynn, four daughters and one son.

Ted Martyn

The long-time voice of weather services for Chatham, Leamington and Windsor radio stations was stilled recently with the death at 54 of D.E. (Ted) Martyn of Windsor.

An employee of AES, Mr. Martyn transferred from the Canadian Forces Weather Service to the Department of Transport in 1968 and came to the Area Weather Office at Windsor Airport the

same year.

He was instrumental in developing the steadily increasing weather services for the Essex-Kent area and also aided greatly in developing the present severe weather watch and warning system.

Born and educated in London, Ontario, Mr. Martyn joined the Army's Royal Canadian Corps of Signals in 1946, then transferred to the Royal Canadian Air

Force in 1948 to become a weather services specialist.

On leaving the military, he held the rank of Warrant Officer, and had been awarded the Canadian Forces Decoration.

Mr. Martyn was a dedicated weather services officer whose life was devoted to his work. He leaves his wife of 31 years, Shirley, two sons, one daughter and nine grandchildren.

STAFF CHANGES

Promotions/ Appointments

T. Allan (CR-3) Clerk, LSCO, Downsview, Ont.

A. Beauvais (EG-1) Observer, QAEEO, Chibougamau, P.Q.

G.E. Berlinguette (CS-5) Chief, Computer Centre, Dorval, P.Q.

J. Botari (CS-3) Supervisor, ARMS, Downsview, Ont.

R.V. Colpitts (MT-5) Meteorologist, Maritimes W.O. Bedford, N.S.

H. Davidovich (CR-3) Clerk, AAF, Downsview, Ont.

G. Eddy (CR-2) Clerk, AAGR, Downsview, Ont.

B.W. Finch (EG-8) Reg. Supt. OAEWR, Toronto, Ont.

K. Fluto (MT-8) Meteorologist, Officer-in-Charge, Weather Centre, Winnipeg, Man.

P.W. Galbraith (MT-7) Meteorologist, Maritimes W.O. Bedford, N.S.

J.L.A. Gamelin (CM-6) CMC, Dorval, P.Q.

R.A. Gillespie (EG-2) Sfc. Tech. WS4, Wynyard, Sask.

T. Goos (MT-5) Meteorologist, WO1, Yukon W.O. Whitehorse, Y.T.

C. Grant (CR-3) Clerk, ARQN, Downsview, Ont.

K. Grant (EG-5) Pres. & Obs. Tech., WO3, Yellowknife, N.W.T.

W. Green (EG-2) U/A Tech. W.O. 4, Hope, B.C.

M. Hacksley (MT-7) Chief, Data Acquisition, CAED, Winnipeg, Man.

G. Harris (EG-5) Pres. & Obs. Tech. WO4, Fort St. John, B.C.

O. Jacobsen (EG-5) Met. Tech. W.O. Victoria, B.C.

B. Jahnke (EG-4) Officer-in-Charge, WS3, Pincher Creek, Alta.

H.J. Janes (EG-7) Officer-in-Charge, WO4, St. John's, Nfld.

A. Janzen (EG-4) Officer-in-Charge, WS4, Kindersley, Sask.

R.L. Jones (AS-7) Service Evaluation Officer, ADED, Ottawa, Ont.

B. Kessler (EG-2) Met. Tech. WAED, Edmonton, Alta.

J.L. LaCroix (EG-7) Instructor, TCTI, Cornwall, Ont.

D. Langevin (EG-1) Observer, QAEEO, WS3, Baie Comeau, P.Q.

D. Law (EG-8) Supt. Tech. Services, CAED, Winnipeg, Man.

J. Lesieur (EG-1) Observer, QAEEO, Chibougamau, P.Q.

J. Marcoux (EG-1) Observer, QAEEO, Mirabel, P.Q.

E. Mathis (SCY-2) Secretary, ARQL, Downsview, Ont.

D. McCulloch (MT-3) Meteorologist, CFWS, Trenton, Ont.

D. McDonough (CR-3) Clerk, AAGR, Downsview, Ont.

G. McGaraghty (CM-6) CMC, Dorval, P.Q.

R. McRae (EG-2) Met. Tech. WS3, Slave Lake, Alta.

R.L. Milo (MT-3) Meteorologist, CFWS, Ottawa, Ont.

H. Morin (EG-1) Observer, QAEEO, Mirabel, P.Q.

R.J. Morris (MT-6) Meteorologist, LSCO, Downsview, Ont.

DEPARTMENTS

D. Nearing (CS-1) Applications PGMR, Ontario W.C. Toronto, Ont.

G. Racicot (EG-1) Observer, QAEEO, Dorval, P.Q.

M.A. Riley (EG-5) Supervisor Data Processing, PAED, Vancouver, B.C.

H. Ritchie (MT-3) Meteorologist, ARMN, Downsview, Ont.

D. Rousseau (EG-1) Observer, QAEEO, WS3, Baie Comeau, P.Q.

D.J. Russell (MT-6) Meteorologist, ACEV, Downsview, Ont.

H. Salomon (CS-2) CMC, Dorval, P.Q.

K. Sawers (SCY-3) Secretary, ARQD, Downsview, Ont.

D.M. Steves (CS-2) Systems Analyst/Programmer, Maritimes W.O. Bedford, N.S.

R.H. Sweet (CM-6) Supervisor Communicator, Maritimes W.O. Bedford, N.S.

J. Waitschat (CS-3) Head, ACRO, Training Branch, Downsview, Ont.

R.A. Webster (EG-5) Pres. Tech. Edmonton Int'l. Airport, Edmonton, Alta.

G.E. Wells (MT-8) Meteorologist, PWC, Vancouver, B.C.

P.J. Yarema (EG-6) Met. Tech. PAED, Vancouver, B.C.

Transfers

A. Caillet (MT-5) Meteorologist, Supervisor, Advanced Training, TCTI, Cornwall, Ont.

P.E. Carlson (RES-2) ARPP, Downsview, Ont.

J. Chapman (EG-5) Pres. Tech. WO1, Whitehorse, Y.T.

W. Davidson (EG-2) Observer, QAEEO, Ste-Agathe, P.Q.

G. Deschenes (EG-1) Observer, QAEEO, Cape Dyer, P.Q.

R. Desjardins (EG-2) Observer, QAEEO, Ste-Agathe, P.Q.

L. Dusseault (EG-5) Officer-in-Charge, QAEEO, Clyde River, P.Q.

D. Engemoen (EG-4) U/A Tech. WS4, Eureka, N.W.T.

G. Julseth (EG-5) Pres. Tech. WO4, Saskatoon, Sask.

M. Lazare (MT-2) Meteorologist, CFWO Trenton, Ont.

L. Mann (EG-4) U/A Tech. WS4, Alert, N.W.T.

N.B. Middler (EG-4) U/A Tech. WS4, Eureka, N.W.T.

R.J. Morris (MT-6) Meteorologist, ARQD, Downsview, Ont.

F. Panet-Raymond (MT-2) Meteorologist, Arctic WC, Edmonton, Alta.

J.E. Parker (GT-5) Head Maintenance Pubs. ACSM, Downsview, Ont.

D. Polutnik (EG-2) Met. Tech. WS3, Cape Parry, N.W.T.

W.G. Richards (MT-3) Meteorologist, Maritimes W.O. Bedford, N.S.

A. Robichaud (MT-2) Meteorologist, Arctic WC, Edmonton, Alta.

T. Sainsbury (EG-4) U/A Tech. WS2, Stony Plain, Alta.

B. Scallion (EG-3) U/A Tech. WS1, Shelburne, N.S.

R. Servranckx (MT-2) Meteorologist, Ontario W.C. Toronto, Ont.

P. Vaillancourt (MT-2) Meteorologist, Arctic W.C. Edmonton, Alta.

T.C. Yip (MT-2) Meteorologist, Ontario W.C. Toronto, Ont.

Departures from AES

Y. Baldachin, ID, Downsview, Ont. to DREE, Toronto, Ont.

M. Brisebois, QAED, St-Laurent, P.Q. to Employment and Immigration

J.S. Bruce, WS1, Trout Lake, Ont.

M. Byatt, WS2, Norman Wells, N.W.T.

M.A. Cardwell, Upper Air, Port Hardy, B.C.

P.M. Carroll, Pacific Weather Centre, Vancouver, B.C.

E. Dillon, ARQA, Downsview, Ont.

R. Dinardo, AAGD, Downsview, Ont.

G. Docherty, Clerk, AAGR, Downsview, Ont. Returned to school.

B. Downey, WS4, Estevan, Sask.

R. Eade, WAED, Edmonton, Alta. to Alberta Government.

S. Fruno, PAED, to MOT.

C. Gauthier, ARQT, Downsview, Ont.

K. Haslam, WO4, Grande Prairie, Alta. to Customs & Excise.

D. Hodgson, WS3, Slave Lake, Alta. to Transport Canada.

A. Jubinville, Ste-Agathe, P.Q.

F.D. MacDonald-McGee, ADED, Ottawa to MOSST Ottawa, Ont.

H. MacDougall, Aerospace Met. Div. to Industry

A. Melenchenko, WS4, Estevan, Sask.

J. Paquet, Ste-Agathe, P.Q. to SEBJ.

A. Pilon, QAED, St-Laurent, P.Q. to Communications Canada.

G. Purba, PAED, Vancouver, B.C.

D. Robertson, Numerical Forecasting, Dorval, P.Q. to Med. Range Weather Forecasting, U.K. (6 mths.)

J. Sawchuk, WS4, Broadview, Sask.

D. Smith, WS2, Fort Nelson, B.C.

J. Stewart, WeatherShip, Victoria, B.C.

M.J. Stinson, Cape St. James, B.C.

G. Toth, Pacific Weather Centre, Vancouver, B.C.

M. Vickery, WS3, Fort Reliance, N.W.T. to DIAND

R.E. Woodbridge, AFFC, Downsview, Ont. Statistics Canada, Ottawa, Ont.

M. Woodroff, Hope, B.C.

Temporary or Acting Positions

C.B. Adamson (SE-REM-1) ADEC, Downsview, Ont.

L. Birmann (SCY-3) Secretary, CCDG, Downsview, Ont.

J. Dmytriw (MT-5) Meteorologist, Project Officer, AFOC, Downsview, Ont.

K. Kanthak (CR-2) Clerk, AAGD, Downsview, Ont.

I.R. McLean (Eng-2) Engineer, ARMA, Downsview, Ont.

J. Megyes (CS-1) Applications Programmer, CCAA, Downsview, Ont.

M.L. Phillips (SE-RES-3) ARDG, Downsview, Ont.

D. Simeonoff (CR-3) Clerk, AAF, Downsview, Ont.

A. Sirois (MT-2) Project Meteorologist, ARQT, Downsview, Ont.

Retirements

C. Brown, AFOI, Downsview, Ont. August 28, 1981

N.J. Fowler, Weather Services, Hamilton, Ont. June 1981

L.W. Hubbert, CMC, Dorval, P.Q. October 1981

D.H. Parkinson, Canadian Forces Weather Office, Trenton, Ont. July 1981

B.E. Sherman, ADMA, Downsview, Ont. July 1981

W.D. Wylie, SSD, OAED, Toronto, Ont. July 1981

Deaths

H. Gerger, Chief, ACSE, Downsview, Ont. July 18, 1981

D.E. Martyn, Weather Services, Windsor, Ont. June 14, 1981

Promotions, appointments, transfers, temporary or acting positions sections provide information on new postings including location. Only temporary or acting positions which involve a change of location are listed. Retirements and departures indicate the last posting.

Abbreviations used are:

MT – meteorologist
EG – engineering & scientific support
SE-RES – research scientist
PC – physical scientist
ES – economist, sociologist, or statistician
SX – senior executive
DA-PRO – data processing
EL – electronics technologist
ENG – engineer
GL-VHE – general trades
ST – secretary
FI – financial officer