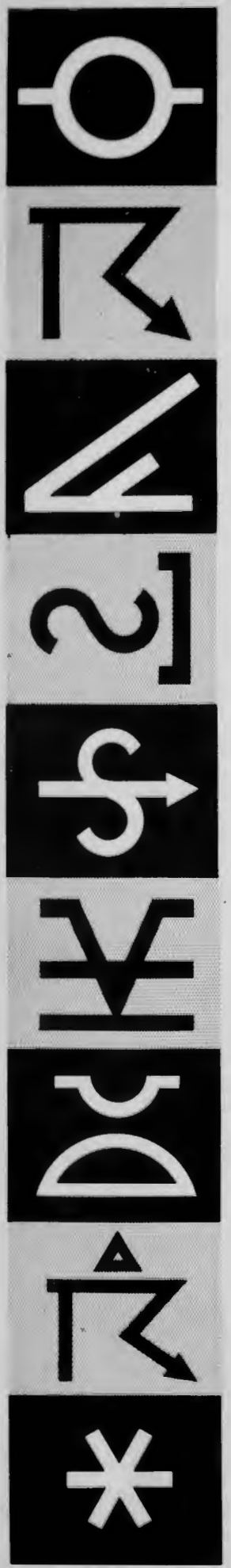

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MARCH 1974 MARS

Environment Canada
Atmospheric Environment

Environnement Canada
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CANADA TO PLAY KEY ROLE IN INTERNATIONAL WEATHER EXPERIMENT

Specially equipped with computers, radar and some of the world's most sophisticated meteorological devices, the Canadian weather ship *Quadra* sails from Victoria, B.C., May 17, to join the largest international weather study ever attempted.

Quadra, her crew augmented by more than 30 scientists and technicians, will be playing a key role in the GARP Atlantic Tropical Experiment, generally referred to as GATE. GARP stands for Global Atmospheric Research Program, which is a joint venture of the World Meteorological Organization and the International Council of Scientific Unions.

The GATE project is the first major observational experiment in the Global Atmospheric Research Program, whose primary object is to extend the range and accuracy of weather forecasts. With the use of computers and mathematical models, scientists hope the data obtained from GATE and other world-wide studies will enable them to predict the weather up to 15 days in advance and possibly forecast weather trends several years ahead.

Canada is one of 11 nations taking part in GATE which gets underway in mid-June in the equatorial Atlantic Ocean and continues until late September. Other participating countries are Brazil, Britain, East Germany, France, Mexico, the Netherlands, Portugal, the United States, the Soviet Union and West Germany.

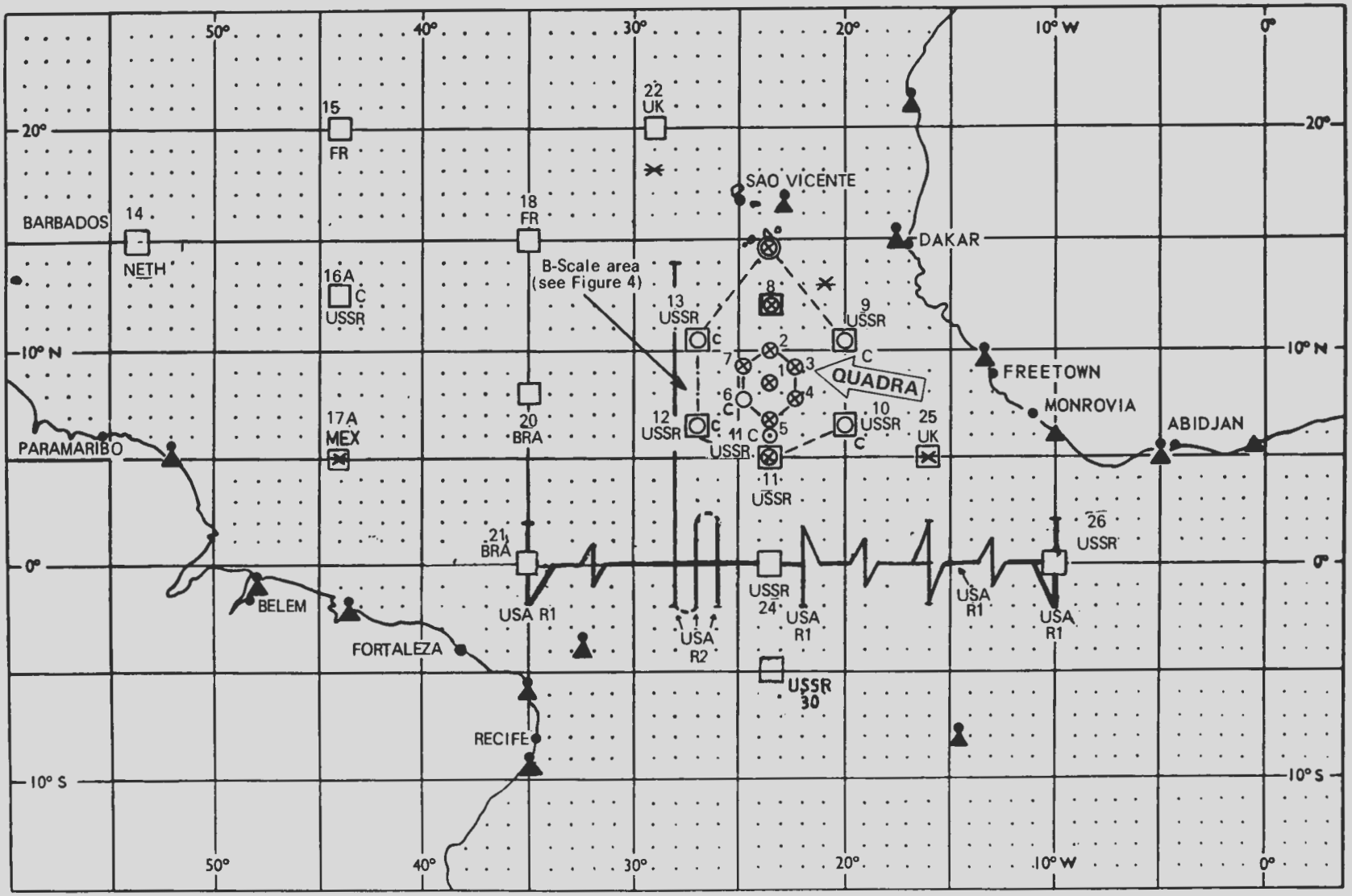
An armada of 36 research vessels will amass a mind-boggling accumulation of data at pre-arranged stations extending 2,400 miles across the Atlantic equatorial belt from Barbados to West Africa. Other observations will be made by land stations, aircraft and a geostationary satellite. *Quadra* will be one of seven key ships stationed in the core area 600 miles southwest of Dakar, Senegal, which will serve as headquarters for the entire operation.

Included in the special instrumentation aboard the *Quadra* is powerful rain-detecting radar, and specialized meteorological sensors which will be carried aloft by a tethered "blimp" to measure wind, temperature and humidity in the lower 3000 feet of the atmosphere above the tropical Atlantic.

Data obtained by the *Quadra* during the three-month exercise is expected to fill 2,400,000 feet of magnetic tape. This information will be validated and put on tape at the Atmospheric Environment Service headquarters in Toronto and then forwarded to world data centres in Russia and the United States for use in subsequent scientific programs.

GATE co-ordinator of Canadian scientific programs, Dr. Rao J. Polavarapu, of the AES's Boundary Layer Research Division, describes the experiment as "an expedition of unprecedented scale and complexity that will test the ability of many nations to work together in a co-ordinated attack on a scientific problem of global importance." Other AES personnel directly involved with GATE include B.S.V. Cudbird, Canadian Data Manager for GATE, Dr. G.A. McBean, Boundary Layer Program Co-ordinator plus close to twenty meteorologists and technicians who will serve on board the *Quadra* during the various phases of the experiment.

"CCGS QUADRA" Courtesy Marine Sciences Directorate, DOE



Ship Distributions for the A-Scale Area, phase 1

OUVERTURE OFFICIELLE

du

CENTRE MÉTÉOROLOGIQUE CANADIEN

par

M. D.E. McClellan

L'ouverture officielle des nouveaux locaux du Centre météorologique canadien, à Dorval (Québec), a eu lieu le mardi, 5 mars 1974. Il y a eu, en même temps, le dévoilement de l'ordinateur CYBER 76 de la société Control Data.

Depuis 1952, le Centre (autrefois le Bureau central d'analyse) et le groupe adjoint de la Division de la recherche sur la prévision dynamique étaient situés dans les immeubles administratifs de la Royal Air Force Ferry Command, à l'aéroport de Dorval. Un certain nombre de facteurs les ont amenés à chercher de nouveaux locaux en 1973. Le personnel du Service de l'environnement atmosphérique avait besoin de plus d'espace et le ministère des Transports, qui louait les locaux, avait aussi besoin d'espace et on avait, en outre, commandé un ordinateur beaucoup plus gros.

Il a fallu faire d'importantes modifications au West Isle Tower, édifice moderne de cinq étages, afin de satisfaire aux exigences du Service. L'installation de l'ordinateur s'est révélée un véritable défi à relever pour l'architecte, les spécialistes de la société Control Data, les ingénieurs chargés de surveiller les systèmes complexes de climatisation et d'électricité, et surtout pour MM Jim Leaver, Ralph Anderson et Joe Simle qui ont presque dû faire des inspections quotidiennes sur les lieux. Les locaux étant situés à deux milles seulement au nord-ouest de l'aéroport (quatre milles environ par la route), il a fallu isoler complètement la salle de l'ordinateur pour annuler les effets du radar de l'aéroport.

Le déménagement s'est fait par étapes. D'abord la Division de la recherche sur la prévision dynamique s'est installée au cinquième étage, à l'été de 1973, puis une partie du personnel de la Division des services informatiques a intégré ses locaux en octobre afin de faire des essais avec le nouvel ordinateur. Les groupes de l'administration et des opérations ont ensuite déménagé au rez-de-chaussée et au deuxième étage, le 5 décembre. Les troisième et quatrième étages sont occupés par d'autres locataires.

Les trois mois précédant l'ouverture officielle ont été mouvementés. On a vécu de véritables cauchemars quand l'ordinateur a cessé de fonctionner, que l'unité de disques a fait défaut et qu'on a éprouvé certaines difficultés avec le traceur de courbes et le télétype. En même temps, Gisèle Marcella, l'agent administratif chargé de l'ameublement, de veiller a l'installation du service téléphonique et de refaire les provisions de papier épuisées, a dû faire face à la pénurie, difficulté qui a touché aussi le reste du personnel.

Lorsqu'on a fixé l'heure de l'ouverture officielle à 14 h 30, le 5 mars, un groupe expérimenté des services météorologiques préparait au mois de décembre, à Toronto, des plans préliminaires. À mesure qu'approchait l'heure H, on a délégué les pouvoirs, Les Tibbles et Don McClellan s'occupant du transport tandis que Bryan Adamson était chargé des discours. Les détails à considérer étaient entre autres choses les signes à faire aux caméras filmant l'événement, la préparation des installations pour les discours, etc. Roger Lancup a même donné 7 couches de peinture dorée aux ciseaux devant servir à couper le ruban.

Entre-temps, Peter Lowery, le représentant des relations publiques de Control Data a pu donner d'excellents conseils. Un groupe du personnel de la Division de la recherche sur la prévision dynamique au Centre s'est familiarisé avec tous les aspects de fonctionnement de diverses unités afin de servir de guide aux invités qui désireraient visiter les locaux. Cette expérience a été très enrichissante pour MM Benmergui, Bourassa, Dagenais, Hubbert, Kellie et Robinson puisqu'ils ont pu apprendre de nombreux détails sur le travail des autres employés.

Le jour de l'ouverture, à la suite de quelques jours de temps très doux pour la saison, la neige avait fondu à l'entrée de l'édifice où la cérémonie, prévue pour l'extérieur, devait avoir lieu. Mais malgré les 40 degrés Farenheit (5°C), les vents vifs et les averses fréquentes ont menacé de chasser tout le monde à l'intérieur; puis, à 14 h 20, une éclaircie de ciel bleu a donné le signal comme prévu. La pluie a cessé pendant les 20 minutes de cérémonie conduite par M. André Robert, nouveau directeur du Centre. Les exposés ont été donnés par M. Réal Beaudet des Travaux publics, M. Mike Zunenshine, au nom des propriétaires de l'immeuble et le sous-ministre de l'Environnement, M. R.F. Shaw, qui a coupé le ruban. Comme s'il obéissait à un ordre, le soleil se mit à briller pendant le discours de M. Shaw.

Puis on se rendit à la salle d'informatique ou M. Ray Fichaud, directeur de la région du Québec, M. Ken Campbell de la société Control Data et M. Karl Johannssen, directeur adjoint de NOAA ont dit quelques mots. M. Reg Noble, sous-ministre adjoint, a ensuite parlé puis pressé les boutons appropriés, ordonnant à l'ordinateur d'exécuter un programme donné qui racontait les événements en détail au moyen de l'imprimante ligne par ligne. Même le traceur de courbe obstiné a enfin condescendu à fonctionner sur commande.

On remarquait parmi les invités, M. Jim Leaver, directeur à la retraite du Centre, M. Garry Glover, président de la société Control Data of Canada, de nombreux hauts fonctionnaires d'Ottawa et du siège du Service de l'environnement atmosphérique, des représentants de diverses universités et tous les directeurs régionaux du Service qui avaient organisé leur réunion pour les deux jours suivants.

Le Cyber 76 du Centre, est un appareil extrêmement puissant et complexe. On l'utilisera bientôt à pleine capacité, le premier essai du nouveau modèle de prévision à équation primitive ayant été fait un jour avant l'ouverture. Il s'agit là de l'un des ordinateurs les plus rapides du Canada, pouvant exécuter 15 millions d'opérations à la seconde. On peut s'attendre que les nouveaux locaux du Centre auront bientôt du matériel de prévision plus exact.

Lors de la préparation M. Frank Benum, le directeur général du Service de l'environnement atmosphérique, a précisé que l'ouverture devrait être intéressante et réussie. Grâce au travail et à la collaboration de tout le personnel, elle l'a été et grâce aux boissons servies au Centre, elle a aussi été très agréable.

West Isle Office Tower

Dr. André Robert – newly announced Director of CMC

M. André Robert – nouveau Directeur du Centre

Photos – Courtesy R. Fournier, CMC

Photographies – Courtoisie de R. Fournier, CMC

Mr. R.F. Shaw – Deputy-Minister for Environment

M. R.F. Shaw – le sous-ministre de l'Environnement

Left to Right: Mr. J.R.H. Noble, Mr. G. Glover, Mr. J. Leaver, Mr. R.F. Shaw

G à D: M. G. Glover, M. R.F. Shaw, M. J.R.H. Noble

OFFICIAL OPENING OF THE CANADIAN METEOROLOGICAL CENTRE

by

D.E. McClellan

The official opening of the Canadian Meteorological Centre at its new location in Dorval, Québec took place on Tuesday, March 5, 1974. Also featured was the unveiling of the Control Data Cyber 76 computer.

Since 1952 the CMC (formerly Central Analysis Office) and the associated group from the Dynamic Prediction Research Division were located in the original Royal Air Force Ferry Command administrative buildings at the Dorval Airport. A combination of factors led to the search for new quarters in 1973. Our AES group needed more space, the landlord Department of Transport also had pressing space requirements and finally a new and significantly larger computer installation was on order.

Major modifications were necessary to the selected West Isle Tower, a modern five storey building, to meet the AES requirements. In particular the computer installation proved a challenge to the architect, Control Data Specialists, engineers supervising the complex electrical and air conditioning systems, and above all to Jim Leaver, Ralph Anderson and Joe Simla who made almost daily inspection trips to the site. The location just 2 miles northwest of the airport (about 4 miles by road) even needed complete shielding of the computer room to negate the effects of the airport radar.

Staged moves first by the Dynamic Prediction Research Division to the fifth floor in the summer of 1973, then by some of the Computer Services Division staff in October to test the new computer, were completed when the operational and administrative groups moved to the ground floor and second floor on December 5. The third and fourth floors are occupied by other tenants.

The three months leading up to the official opening were hectic. Computer breakdowns, malfunctioning of the disc storage file, coupled with curve plotter and teletype problems made the operations at times a nightmare. Meanwhile the apparently straight forward tasks of procuring new furniture, arranging telephone service and restocking the depleted paper inventory proved in these days of shortages to be an extremely frustrating experience for Gisèle Marcella, the Administrative Officer, and at times led to serious inconveniences for the remainder of the staff.

Upon fixing the time for the official opening at 2:30 p.m., March 5, preliminary plans were prepared in December in Toronto by an experienced group from Forecast Services. As the deadline approached, delegation of responsibility accelerated with Les Tibbles and Don McClellan looking after the logistics while Bryan Adamson became concerned with speeches. Details ranged from providing background signs for cameras recording the event to arranging for a public address system. The scissors for the ribbon cutting ceremony were even given 7 layers of gold paint by Roger Lancup. Meanwhile, helpful consultation was provided by Peter Lowery, Control Data's public relations representative. A group from the CMC-DPR staff familiarized themselves with all aspects of the operations of the various units in order to act as guides for guests who might wish to visit the operational areas. This activity by Messrs. Benmergui, Bourassa, Dagenais, Hubbert,

Kellie and Robinson proved to have rewarding side benefits as each learned many details about what the man in the next office does.

On "opening" day, following an unseasonable mild spell, snow had receded from the area at the front of the building where outside ceremonies had been scheduled. But despite favourable 40 degree (5 Celsius) temperatures, brisk winds coupled with frequent showers threatened to cause a retreat to an indoor location; then at 2:20 a patch of blue sky signalled GO as planned. The rains held off for the 20 minutes while Dr. André Robert, the newly-announced Director of CMC, carried on as Master of Ceremonies. Speakers included Réal Beaudet for Public Works, Mike Zunenshine for the building owners and the Deputy Minister for Environment R. Shaw who also performed the ribbon-cutting ceremony. As if on order the sun came out brightly while Mr. Shaw was speaking.

Then to the computer room where Ray Fichaud, Director Québec Region, Ken Campbell of Control Data and Dr. Karl Johannssen Asst. Director NOAA made brief speeches. Mr. Reg Noble, ADMA followed with a speech and pressed the appropriate buttons ordering the computer into a prepared program which detailed the events on a line printer output. Even the balky curve plotter responded to the morning attention and responded on command.

Prominent among the guests were Jim Leaver the recently retired Director of CMC, Mr. Gary Glover President of Control Data of Canada, many AES Headquarters and Ottawa officials, representatives from various Universities plus all of the Regional Directors, AES, who had scheduled meetings for the two following days.

The CDC 76 Cyber has proved to be an extremely powerful and complex computer. Gradually its full potential is becoming utilized with the first trial runs of the new Primitive Equation predictive model being ready just a day before the opening. Certainly this is one of Canada's fastest computers with a capacity of performing 15,000,000 operations a second. From the new and more spacious quarters of the CMC we can count on more accurate forecast material being available in the future.

In the original plans AES Director General, Frank Benum specified that the opening event should be interesting and successful. Thanks to hard work and the full cooperation of the entire staff it was and thanks to CDC refreshments were most enjoyable too.

THE TOURISM AND OUTDOOR RECREATION CLIMATE OF THE CANADIAN PRAIRIES

by

R.B. Crowe

Since September, 1974, the Atmospheric Environment Service has been involved in preparing a climatic study of the Prairies for recreation and tourism. Funded by DREE, the socio-economic study should be useful to planners, developers and conservationists at the federal, provincial and municipal levels. It will also assist private enterprise to rationalize if and where it can best locate a business of a recreational – tourism nature.

A geographer, Ms. Joan Masterton, is project officer, and is preparing the report for the Recreation and Tourism Unit of the Applications and Consultation Division. In December, Mr. Norman Poulton joined the project team to provide technical support. Norm is a geography graduate, but will be returning to university for postgraduate work following the termination of the project this fall.

The report will be divided into three main sections:

1. The recreation and tourism seasons of the Prairies.
2. The quality analysis of the Prairie climate for various specific activities.
3. The general Prairie climate as it affects recreation and tourism.

The specifics of the above sectional breakdown and the order of their presentation in the final report are yet to be finalized.

Most of the seasonal analysis has been completed. For recreation and tourism, a two-seasonal approach, winter and summer, has been formulated. Winter is defined as beginning on the median date of the first one-inch snow cover in the autumn and ending, similarly, on the median date of the last one-inch snow cover in the spring. Due to the unreliability of early and late season snowfalls, the actual snow-cover season for winter sports is considerably shorter, of course, than the complete winter season. It is assumed that following the winter season there is a two-week "drying-up" period, the spring thaw, before the onset of the summer. The complete summer season, then, is considered to be the "dry terrain" season suitable for most outdoor activities, such as sports, picnicking, etc. Summer is conveniently divided into a spring shoulder, high summer, and an autumn shoulder. During high summer, daily maximum temperatures normally exceed 65°F, and minimal clothing may be worn comfortably. Activities are mostly water-based, such as swimming and beaching, at this time.

The quality analysis for specific activities within a season is determined by the percentage frequency of suitable days for a pursuit, such as landscape touring, beaching, passive activities, vigorous activities, skiing and snowmobiling. A computer analysis of twenty years of hourly weather records, combined with snow-depth data, are used to obtain these values. For any given day to be acceptable, at least five hours, not necessarily consecutive, between the hours of 10:00 a.m. and 6:00 p.m., local standard time, must meet various conditions simultaneously for recreation satisfaction. For example, specific levels of snow-cover, temperature, humidity, visibility, thick cloud cover, wind and occurrence, non-occurrence or type of precipitation must be satisfied for skiing. The criteria depend upon the activity. For example, for beaching, the temperature has to be greater than 64°F, the

visibility greater than one mile, the sky cover less than eight-tenths thick cloud, the wind less or equal to 15 m.p.h., and no precipitation falling at the time of the hourly report. The computer analysis was carried out for about 50 stations in the Prairies and for adjoining areas of Ontario, the Northwest Territories, British Columbia and the United States. Considerable work remains to be done in interpretation and hand analysis of the computer output. Smoothing, both in time by station and areally, is necessary, and some subjective adjustments will no doubt, have to be made. The final analysis will emphasize the relative strengths of quality across the Prairies.

The general Prairie climate study will deal specifically in presentation of the usual climate elements in a way that is useful for recreation planning or development. Much of this analysis will likely be presented as frequency data.

At the end of March, the project was half completed, and it was highly desirable for the project team to visit the Prairies for discussions with users in the recreation field. Ms. Masterton and Messrs. Bristow, Chief, Climatological Services Division; Baker, a recreation consultant to DREE; and Crowe met with officials of the various provincial governments in Winnipeg, Regina and Edmonton during the week of April 1-5. Representatives from DREE and the AES Central and Western Regions also attended. The purpose of the meetings was to present the study to date and to obtain user reaction to both the preliminary result (mainly the seasonal analysis) and to the proposals for the outline of the remainder of the study. The meetings proved fruitful, and provincial government representatives showed strong interest in the study. We gained a better understanding of some of the special regional problems through personal contact that otherwise would not have been possible. In addition, the visit to the area under consideration helped in appreciating its physical and economic geography. As a sidelight, while we were in Regina, the airport closed down due to fog, and we could not travel to Edmonton by air. We had to settle for an overnight bus ride to Calgary, thus furthering our appreciation of the physical geography of the Prairies!

The analysis should be completed by September and the final report available by the end of the year.

MSRB PLANS AND PROGRAMS DOCUMENT

Since the formation of the Meteorological Services Research Branch, November 19, 1969 (then Forecast Research Section) the R & D programs of the Branch have been undergoing continuous updating. A substantial management effort has gone into the development of a totally integrated Branch program and the associated formulation of long-range R & D goals. In doing this the problem has been three-fold: to bring the Branch goals and programs in line with broader Service and Departmental goals and objectives, during this period of initial growth of the Branch to meet existing and immediate needs from within the Service for consultation, advice and research products; and finally to organize the initially assigned resources and build toward an organization of scientific and technological experts that would have both individually and collectively the training and experience to carry out a program with heavily mission-oriented responsibilities.

A new organization, given broad national research responsibilities, must earn the respect and confidence of those groups it has been set up to serve. This is achieved both through acceptance of its concepts, plans and ideas as sound, far-reaching and practical, and through the production of high-quality and useful R & D results. Both these acceptance "criteria" require an adequate means of communication between the research group and its users (in this case offices spread far and wide across the country).

The means of communicating its concepts and planning proposals has presented to the Branch a complex problem of trying to advise on its ideas to the operational arms of the Service and, at the same time, permit and encourage critical feedback into the Branch planning process. It was realized quite early in the game that a Branch document of some sort was needed as a basic reference, built around a formulation of the long-range plans and ideas of the research management, and eventually to be updated on a one or two year basis. A very considerable effort has been expended each year by the Branch Director, his Division Chiefs and others on the staff, to attempt to put in words, in one document, a description of the collective, or organizational, thrust of the Branch, of where it thinks it should be going and what it thinks it should be doing. The degree to which detail has been included has varied, the format has changed and there has been some shift in emphasis in many parts of the program – hopefully this has largely reflected the constructive criticism aimed both at the programs and at the document itself.

Earlier this year the document "MSRB Programs and Plans" was distributed to all interested components throughout the Service (and the DND). The format is different this year in that it has been organized so as to separate program (i.e., ongoing sub-activity) descriptions, long-range goals, shorter-term objectives (Targets – approximately 2 years hence), fairly detailed project actions for the next year or so, and special "concept" or "idea" papers. In this way anyone can easily pick out the Chapter (or portion of a Chapter) that he has reason to refer to, and not have to wade through the entire document. This year the statements of the long-range goals and programs of the Branch have been formulated with relatively high degrees of solidarity and completeness – so much so that we expect it will be sufficient to review these broad statements on an average of every few years, rather than annually. Targets and actions will be updated annually as in the past. Progress reports and related resource expenditures will be the subject of separate documents.

Comment is welcomed, and will be taken into account, on any aspect of the document (subject matter content, format, purpose, etc.). "MSRB Programs and Plans" is considered the single most important document in the Branch for providing an up-to-date and overall description of its purpose and direction and a certain amount of detail on its current R & D effort.

SESSION ON ICE AGE STRUCTURE AND DYNAMICS

by

J.A.W. McCulloch

One of the more interesting sessions at the American Geophysical Union/ American Meteorological Society spring meetings in Washington (Apr. 8–12) was one on "Ice Age Structure and Dynamics." A survey paper on the chronology of ice age climates over the last million years opened the session, and the second paper concentrated on the last 15% of that interval. Cores taken in Barbados and in the Far East revealed the large fluctuations of sea level associated with the advance and retreat of the ice over the last 150,000 years. A third paper looked at the global ice distribution during the last "ice age" some 18,000 years ago, and another synthesized sea surface isotherms at that time and contrasted them to the present.

The final paper of the eight presented at the session presented some perspectives on climatic change over the mega year interval. This summary touched on five major points:

(1) What are the salient features over the last million years? – While there is not much detail, we are now getting some quantitative ideas on ice volumes, water temperatures, the distribution of salinity in the oceans and the like. We see a cycle of period of about 100,000 years, where both the peaks and the troughs are greatly flattened. Other oscillations of 40,000 and 20,000 years are suggested, perhaps astronomical in origin. When one concentrates on the most recent period, other shorter period fluctuations seem to appear.

(2) Where are we today in relation to usual climatic conditions in the past? – We are warmer than the average over the last million years, and the last decades are warmer than the average over the "high" since the last ice age. The speaker called this the "Sword of Damocles hanging over our head."

(3) What causes climatic change? – This is not yet clear, but present experiments are pointing the direction to new ones that might shed light on this. We are dealing with many phenomena in a stochastic system, and the real challenge is to determine to what extent we are dealing with non-randomness.

(4) Is climatic change predictable? – While we can relate past climates to physical processes, we cannot necessarily predict. For example, there may be two equally probable climatic conditions that can result from the same set of physical conditions, and there may be no way to decide rationally which will occur. Furthermore, we may be able to link changes to events such as solar activity or volcanic eruptions, altering the problem to the equally difficult situation of predicting these events.

(5) What will be our future climate, allowing for the impact of human activities? – We have no real insight into this. If we think we know how environmental factors will change in the future, we can do experiments to synthesize climate. But we must consider the atmosphere, the oceans and the ice caps as a single system, not look at them individually. There may be no need to disturb the system from the outside to initiate a process of change, but if this is necessary, there are many astronomical and

geological changes available for this purpose. Furthermore, there is need of much further work to understand how human activity affects climate.

In final summary, the speaker stated that at the present, we are uncommonly warm. There is little doubt that we are going to enter a cooling phase, but not necessarily soon.

La météorologie selon les Anciens –

LE SOLEIL

texte tiré de l'Histoire naturelle de Pline

Pur à son lever, sans être brûlant, il annonce un jour serein; mais pâle il annonce une grêle orageuse. Si se couchant serein il se lève le lendemain serein aussi, l'assurance du beau temps est encore plus grande. S'il se lève caché dans les nuages, il présage de la pluie; il présage du vent quand les nuages rougissent avant qu'il se lève, et en outre de la pluie quand des nuages noirs sont mêlés parmi les rouges. Quand ses rayons sont rouges au lever et au coucher, les pluies seront abondantes. Si les nuages sont rouges à son coucher, ils promettent du beau temps pour le lendemain. Si au lever ils se dispersent partie au midi, partie à l'Aquilon, bien que le ciel soit serein autour du soleil, néanmoins c'est une annonce de pluie ou de vents; de pluie, si ses rayons paraissent contractés à son lever ou à son coucher. S'il pleut au moment de son coucher, ou si les rayons attirent à eux les nuages, c'est l'annonce d'un violent orage pour le lendemain. Quand au lever les rayons ne sont pas vifs, bien qu'ils ne soient pas entourés de nuages, ils présagent la pluie. Si avant le lever, les nuages se pelotonnent, ils indiquent un violent orage; si repoussés du levant ils vont vers le couchant; le beau temps. Si les nuages cernent le soleil, moins ils laisseront de lumière plus la tempête sera forte; s'ils forment un double cercle elle sera plus terrible encore; si cela arrive au lever de manière que les nuages rougissent, c'est l'indice d'une tempête très grande; si les nuages s'appuient sur le soleil sans l'environner, ils présagent le vent du côté où ils vont, et en outre de la pluie s'ils sont au midi. Si à son lever le soleil est entouré d'un cercle, il y aura du vent du côté où le cercle s'ouvrira; si le cercle s'évanouit également, il indique du beau temps. Si à son lever le soleil prolonge au loin ses rayons à travers les nuages, et que le milieu soit vide, ce sera de la pluie; si les rayons se montrent avant le lever; de l'eau et du vent. S'il y a un cercle blanc à son coucher, légère tempête pour la nuit; s'il y a un nuage, tempête plus violente; si le soleil paraît blanc lui-même, il y aura du vent; si le cercle est noir, grand vent du côté où le cercle s'ouvrira.

PRESENTING 1973 AWARDS TO VOLUNTARY CLIMATOLOGICAL OBSERVERS ABOVE THE ARCTIC CIRCLE

Broughton Island is one of the sites of our climatological network, above the Arctic Circle. The Island is situated off the rugged east shores of Baffin Island in the Davis Strait at 67°N latitude and 64°W longitude. The photograph shows Mrs. J. Deyell receiving from Mr. M.J. Koruluk, Meteorological Inspector, Dewline, a token award – a desk-type barometer – for taking voluntary climatological observations at Broughton Island.

AES AIR QUALITY NETWORK EXPANDS

Canada's contribution to the World Meteorological Organization Global Air Quality Monitoring Network was initiated in July, 1973 at the Mt. Forest Surface Weather Station (Zephyr, Aug. 1973).

Five more stations in Canada have since been added to the network. Turbidity observations and precipitation sampling programs are now in force at the following Surface Weather Stations:

Fort Simpson A, N.W.T. as of Dec., 1973
Edson A, Alta. as of Jan., 1974
Armstrong, Ont. as of Feb., 1974
Wynyard, Sask. as of Feb., 1974
Puntzi Mountain, B.C. as of March, 1974

These stations are part of the Regional Monitoring network, intended to document long term changes in atmospheric turbidity and chemical composition of precipitation over a relatively local area. The Regional sites in Eastern Canada are now being selected with installations planned for the summer of 1974. Mould Bay, in the high Arctic, will also join the network this summer.

As expected, the selection of suitable sites for the AES Baseline Network Stations has proved to be most difficult. These stations are expected to provide data for the documentation of long term trends, on a global scale, in the background levels of carbon dioxide, turbidity, and chemical composition of precipitation. As such, they must be chosen to minimize the local and regional influences of such factors as vegetation and human activities. However, several possible sites have been selected and testing of their suitability is expected to begin in the near future.

We are indebted to Miss Elva H. Spence, climatological observer Plum Point, Nfld., for the following. The interest, humour and wit displayed by Miss Spence are to be envied. (The following explanatory notes sent with Climatology report)

NOTE

The temperatures for the evening of February 1, 1974 are marked in red because they are not official. I was dumb enough to go to Flowers Cove that morning and get caught in a fierce blizzard.

My spare observer was also at Flowers Cove – in the hospital with a new baby. My aunt next door, whom I'd instructed after her daughter-in-law became pregnant, is like the snow clearing equipment – she doesn't operate in heavy drifting – so I didn't even phone her.

(Just imagine the poor soul out in that 60 mile an hour wind and heavy drifting, trying to keep the door of the Stevenson screen from flapping and holding on to her breath, a pen, notebook and flashlight and adjusting her bifocals to read those mercury thermometers!)

However, the uncle we live with was at home and he has a good quality Indoor-Outdoor thermometer on the side of the window. At night when the fires are out it keeps the same temperature as the ones in the screen. Daytime at that time of the winter it usually registered three degrees higher while the house was warm.

My uncle told me that at supper time (6 p.m.) that thermometer registered 6 or 7 degrees above, so I based my evening reading on that, calling it 3 degrees. As soon as I got home next day, at twelve-twenty-five, I took observations. I know that the high then was the high for the p.m. reading, and the low was accurate for that morning, so I set up these figures, thinking they were better than none.

You wonder why I haven't taught my uncle to take observations? Well, he's been known to twist necks off bottles, and once pitched a baseball through the side of a

shed (clapboarded). If he tried to shake down the Maximum he'd probably flip it right out of the case!

The snowfall measurements should be all written in red. They're one big guess. Maybe I don't have half a dozen accurate ones. It's been blowing all winter. It's so frustrating to go to measure snow and not be able to find it.

Even the ground measurements are hopeless. I know the snow has fallen, I've seen it falling, but it just doesn't appear to be on the ground. In desperation I went out with a small dipper and got a dipperful each of loose snow and hard packed. When melted the loose measured six ounces the hard packed thirteen. Now I know where the snow went, we're walking over it.

I wish you'd send me an anemometer. I'm sure we wouldn't get so much wind if I had something to measure it with!

(Miss Elva H. Spence
P.O. Box 17, Plum Point, Nfld.)

WORLD METEOROLOGICAL DAY 1974 – WINNIPEG

Press releases for WMO Day this year were forwarded to the Winnipeg Free Press and the Winnipeg Tribune on March 11, 1974. In addition, the release was sent to fifteen Winnipeg weekly papers. Invitations to an AES Open House at the International Airport were also extended to all members of the news media.

WMO Day was first publicized locally by CBC-TV on March 18 at which time Doris Siemieniuk was interviewed for seven minutes on the daily noon television show "Four Corners." On March 21, Doris was again interviewed, for the Friday evening CBC-TV show "Twenty Four Hours."

The Open House for the media included slides of the "Weathermen at Work," coloured pictures and posters were displayed along with satellite pictures and the Guide to Satellite Cloud Photo Interpretation. In addition to the tours and interviews that were conducted, Murray McNeill, from the Tribune, and Jerry Cairns, from the Free Press, prepared articles for their papers. These were published in the respective papers on March 25 and are included with this report.

Two radio stations called regarding the tour, but failed to put in an appearance due to the record breaking cold spell that lasted for several days. Mrs. Sylvia Kuzik, from CKY-TV, spent approximately a half an hour touring the offices in preparation for a weather show she will be doing for that station.

Two members from the computer section and five members of the local centre of the Canadian Meteorological Society were present to conduct tours, which from all the publicity received turned out to be a successful WMO Day 1974.

WINNIPEG WEATHER OFFICE "OPEN HOUSE"

WMO DAY – CENTRAL REGION – CHURCHILL WEATHER OFFICE

The Churchill Weather Office held an "Open House" on March 30. It was observed a week late to avoid a conflict with the Churchill Winter Carnival. There was an exhibition of satellite pictures, posters, maps and meteorological instruments. Three films were shown; "In One Day," "Above the Horizon" and "Camille." Pamphlets, including "Whiteout" which was previously forwarded to your office, were distributed.

Although the press and media publicized the day, there was a poor turnout. Partly, this is due to the small population at the Fort and the town is 5 miles away. It is encouraging that "Whiteout" was well received and the Churchill staff is to be commended for their efforts; each member of the staff developed their own particular display project and all staff members were on hand to show visitors around and answer questions.

VOLUNTEER OBSERVERS IN ONTARIO AWARDED HONOUR FOR SERVICE TO CLIMATOLOGY

Awards to volunteer climatological observers in the Ontario Region for outstanding contributions to climatology in Canada have been announced by R.C. Graham, Regional Director, for the Atmospheric Environment Service.

Suitably inscribed desk barometers will be given to each of the following:

C. Watson – Roberts Lake, Parry Sound
Staff – Water Pollution Control Plant, Brockville
Staff – – Water Pollution Control Plant No. 1, Stamford – Niagara
L. Radder – Bradford – Springdale
Staff – Water Pollution Control Plant, Huntsville.

TÉMOIGNAGE DE RECONNAISSANCE AUX OBSERVATEURS BÉNÉVOLES DE L'ONTARIO POUR SERVICES RENDUS À LA CLIMATOLOGIE

M. R.C. Graham, directeur régional du Service de l'Environnement atmosphérique, a annoncé les prix décernés aux observateurs climatologistes bénévoles de l'Ontario en vue de l'importance de leur contribution à la climatologie au Canada.

Les personnes et les groupes suivants recevront un baromètre de table portant une plaque commémorative:

C. Watson – Roberts Lake, Parry Sound
Le personnel de l'usine d'épuration de l'eau de Brockville
Le personnel de l'usine d'épuration de l'eau nº 1 de Stamford, Niagara
L. Radder – Bradford, Springdale
Le personnel de l'usine d'épuration de l'eau de Huntsville.

FILM SUR LE SEA

On a approuvé la réalisation d'un nouveau film montrant le travail du Service de l'Environnement atmosphérique. Le film, que produira l'Office national du film, portera sur l'application des renseignements météorologiques à la vie et aux moyens d'existence des Canadiens. Le film aura recours à des moyens dramatiques et visuels pour montrer les rapports entre le temps et le climat, d'une part, et l'agriculture, les transports et les études sur l'environnement, d'autre part. On a prévu de réaliser le film en deux versions: l'une française, l'autre anglaise.

La production du film est assurée par M. Desmond Dew, cinéaste plein d'expérience à qui l'on doit la production du film "LE LABYRINTHE" à l'EXPO 67; quant à la direction, elle reviendra à M. Bernard Devlin qui compte à son actif bien des films de l'Office national parmi les plus connus. Le tournage du film doit commencer incessamment. M. R.A. Miller, du Bureau des services de renseignements, est l'agent de liaison du SEA en ce qui concerne ce projet.

AES FILM

A new film on the work of the Atmospheric Environment Service has been approved. The film to be produced for the AES by the National Film Board will concentrate on the application of weather information to the lives and livelihoods of Canadians. The film will use dramatic and visual effects to show the relationship of weather and climate to agriculture, transportation and environmental studies. Both French and English versions are planned.

The film is being produced by Mr. Desmond Dew, a veteran film maker, who was project manager for LABYRINTH at EXPO '67 and will be directed by Mr. Bernard Devlin, who has to his credit many of the NFB's best-known productions. The shooting on the film is expected to begin immediately. Mr. R.A. Miller, of the Information Services Office, is the AES's liaison man on the project.

VANCOUVER PORT METEOROLOGICAL OFFICERS HONOURED

The Automated Mutual-Assistance Vessel Rescue System (AMVER) is operated by the U.S. Coast Guard and is designed to promote the safety of merchant vessels on the high seas. Merchant vessels are encouraged to report their positions and sail plans and this information is funneled to a computer in New York which calculates and projects the positions of all ships throughout their voyages. Whenever there is an emergency at sea, the system can produce a computer-predicted list of ships in the vicinity of the emergency and can also provide information on the medical facilities available and the radio watches maintained by those ships.

Alex Gibb (left), and John Hegbin

Port Meteorological Officers assist in recruiting ships to cooperate in the AMVER program. Alex Gibb and John Hegbin, Vancouver's PMO's, have been active in this program and were recently awarded the AMVER pennant. The Coast Guard's letter accompanying the award stated: "THANK YOU FOR YOUR OUTSTANDING ASSISTANCE, I AM SENDING YOU A RARE ITEM . . . THE RED AMVER PENNANT WHICH WAS ORIGINALLY INTENDED FOR THE 2ND AMVER AWARD, HAS BEEN HANGING IN MY OFFICE. I THINK IN RECOGNITION TO YOUR ASSISTANCE TO THE PROGRAM YOU SHOULD HAVE IT."

Congratulations to Alex Gibb and John Hegbin!

PERSONNEL

The following transfers took place:

D.D. Bishop	From: Montreal WO To: CMC, Montreal
A. Laferriere	From: Toronto WO To: Montreal WO
M. Stauder	From: Toronto WO To: FSD, AES Headquarters, Downsview

The following are on temporary duty or project assignments:

I.H. Baerg	From: Vancouver WO To: FSD, AES Headquarters, Downsview
D.S. McGeary	From: Prairie WC, Winnipeg To: FSD, AES Headquarters, Downsview
H.B. Woronko	From: Montreal WO To: CMC, Montreal

The following have accepted positions as a result of competition:

73-DOE-TOR-CC-198	Meteorology MT6 Meteorology Instructor Professional Training Division CSD, AES HQ, Downsview D.J. Webster
73-DOE-TOR-CC-182	Meteorology MT8 Head, Hydrometeorological Projects Section Meteorological Applications Branch CSD, AES HQ, Downsview W.I. Pugsley

TRIVIA

"We travel together, passengers on a little spaceship; dependent on its vulnerable reserve of air and soil; all committed for our safety to its security and peace; preserved from annihilation only by the care, the work, and the love we give to our craft."

by Adlai Stevenson

"Man, in common with all other life on this earth, is born, passes his entire existence and dies without ever emerging from water in which he is surrounded –, this fluid fills the lower depressions of the earth's surface in the liquid form but above the sea and the land, it wraps the entire globe in an all prevailing sheath of water-vapor that mingles with the atmosphere. – In the cold of the polar regions this water blanket is rigid and solid, and mantles the earth with ice floes which attain the dimensions of continents."

In 210 B.C., Petronius Arbiter wrote, "We trained hard – but every time we were beginning to form up into teams, we would be reorganized. I was to learn later in life that we tend to meet any new situation by reorganizing – and a wonderful method it can be for creating the illusion of progress while producing confusion, inefficiency, and demoralization".

Ottawa Joke – The Successor to the Newfie Joke

The Ottawa Public Servant who bought roller skates because he wanted to make skating on the Rideau Canal a year-round sport.

* * *

Freudian Slip?

"Since the plan is based on the *calssification* system, no further progress can be made until . . . . . .

* * *

. . . And then there was the AES employee who took two weeks holiday as a dry run on retirement, before the two weeks were up his wife invited him to return to work and forget about retiring.

DICTONS MÉTÉOROLOGIQUES

par

Louis Dufour

Soleil rouge le matin,
Fait trembler le marin.

Vois le coucher du soleil,
S'il est rose ou bien vermeil,
Tu peux compter pour demain,
Avoir un beau temps certain.

Rouge le soir, blanc le matin,
Fait cheminer le pèlerin.

Soleil qui luyserne au matin,
Femme qui parle latin,
Et enfant nourri de vin,
Ne viennent jamais à bonne fin.

La lune pâle est pluvieuse,
La rougeâtre est toujours venteuse,
La blanche amène le temps beau.

Ciel vêtu de laine,
Eau peu lointaine.