

# ZEPHYR

JUNE 1977 JUIN



Fisheries  
and Environment  
Canada

Pêches  
et Environnement  
Canada

Atmospheric  
Environment

Environnement  
atmosphérique

**ZEPHYR****JUNE 1977 JUIN**

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**TYPE B WORKSHOP**  
**PRAIRIE WEATHER CENTRE**

by  
A.W. Cott

A Type B Workshop was conducted by the staff of the Prairie Weather Centre, Winnipeg, during the winter and early spring of 1976-77. The project was carried out in two sessions, Session I taking place from 3-11 February, 1977 and Session II from 30 March to 7 April, 1977. The modules of each session were presented twice in two three day periods. One day of each session was a seminar day devoted to providing information on certain portions of the weather service.

The objective of the workshop was to examine the philosophy and methodology of specific techniques which when implemented would increase the efficiency and quality of the operational output of the Prairie Weather Centre. The philosophy underlying the Type B Workshop was that the research and development, presentations and laboratory case studies be conducted entirely by human and material resources from within the Prairie Weather Centre with advice and guidance provided by personnel from ACEC, AES Headquarters. The expertise and knowledge achieved by the participating meteorologists would thus remain with the PRWC and contribute to the efficiency and implementation of routine programs in the office.

The modules presented were operationally significant and could be implemented directly into the office routine. Assessment and evaluation of NWP Guidance was developed and presented by project leader Fred Sebastian assisted by Carr McLeod. The purpose of the module was the development of skills in the evaluation of Numerical Weather Guidance products in the light of an assessment of the thermal, height, thickness and wind fields. Mark Hacksley was project leader for the Winter Storms and Heavy Snow Forecasting module with assistance from Jay Anderson and Rick Raddatz. The purpose of this module was the development of skills and techniques in forecasting the quantitative and areal extent of heavy snowfall. The third module of Session I was developed and presented by project leader Larry Romaniuk assisted by Heather Routledge and Doris Siemieniuk. It dealt with Verification and Quality Control in the output of public and aviation forecasts.

Module I of Session II was concerned with techniques in Severe Summer Storms analysis and prediction. It was developed and presented by Mike Shewel and John Bullas and emphasized the techniques developed by the Severe Local Storms Centre (SELS) in Kansas City for the evaluation of severe weather threats. Three case studies were presented demonstrating the application of the techniques to delineate areas where severe thunderstorm activity was likely and to assess the severity of the weather which might occur in the area. To complete this module Carr McLeod gave a presentation on the interpretation of returns on the "C Band" Weather Radar.

Module II of this session was on Extended Range Forecasting and was presented by Brian Crowe and Henry Stanski. It dealt with Economics of Forecasting, Agricultural Forecasting, Weather and Circulation Patterns and the Verification of Extended Range Forecasts.

On the first seminar day Hugh Fraser of the Central Region, Scientific Services Unit, gave a talk on the function of this unit. Einar Einarsson of the SSU gave a presentation on the dispersion of smoke pollution associated with peat fires in southern Manitoba. The

second seminar day was devoted to presentations by John Junson, the PRWC Climat Specialist, by Bernie Aftanas and Jack Armstrong on the PRWC computer section and by Dale Henry and Bob Beal on verification techniques presently employed in the PRWC.

The workshop was deemed a success since it was oriented toward operational problems. The concepts taught in evaluating numerical weather prediction and heavy snow-fall forecasting have been implemented into the operational routine of the PRWC. The expertise developed in the severe weather module will be employed in the severe summer storms program for 1977 and re-inforces skills already developed in this field in previous summers. In addition to pointing out the value of extended range forecasts to various consumers, the module on long range forecasting showed how far the service is from producing a really useful long range forecast. Although some skill was indicated for the third day of the forecast, little or none was demonstrated in the fourth or fifth days. It was concluded that until better long range guidance is provided the forecaster is well advised to avoid categorical forecasts of weather parameters over a long period of time. Such forecasts would be more useful if they attempted only to indicate what trends are likely over the extended period.

Resource assistance was provided by Réal Gagnon and Dave Gardner from ACEC, AES Headquarters. Technical support in the development of slides and the production and collation of maps used in the modules were provided by Doug Rosler, Ed Dobrzanski, Phil Wright, Glen Nicholas, Ron Carman and George Feher of the PRWC operational technician staff. PRWC co-ordinator of Workshop I was Fred Sebastian and of Workshop II was Wes Cott.



*Brian Crowe Instructing "Extended Range Forecasting."  
M. Brian Crowe fait un cours sur les prévisions à période prolongée.*

## JOURNÉES D'ÉTUDE DE TYPE B CENTRE MÉTÉOROLOGIQUE DES PRAIRIES

par

A.W. Cott

Le personnel du Centre météorologique des Prairies, à Winnipeg, a dirigé des journées d'étude de type B au cours de l'hiver et au début du printemps de 1976-1977. Le programme s'est déroulé en deux sessions, la première du 3 au 11 février 1977, et la deuxième, du 30 mars au 7 avril 1977. Les modules de chaque session, d'une durée de trois jours, ont été présentés deux fois. On a consacré une journée de chaque session à un séminaire sur la fourniture de renseignements relatifs à certains secteurs de l'assistance météorologique.

Ces journées d'étude avaient pour objectif d'étudier les grands principes et la méthodologie de techniques particulières qui, une fois appliquées, accroîtraient l'efficacité et la qualité de la production en exploitation du Centre météorologique des Prairies. Un principe sous-tendait ces journées d'étude de type B: le Centre météorologique des Prairies devait faire appel à ses propres ressources en hommes et en matériel pour mener la recherche et le développement, les exposés et les études de cas pratiques. Le personnel de l'ACEC, de l'Administration centrale du SEA, devait, quant à lui, fournir aide et conseils. Les connaissances et la compétence acquises par les météorologistes participants resteraient ainsi au Centre météorologique des Prairies et contribueraient à l'efficacité des programmes courants et à leur application dans le bureau.

Les modules présentés étaient directement exploitables et applicables immédiatement dans les service courant. M. Fred Sebastian, directeur de projets, assisté de M. Carr McLeod, a mis au point et présenté l'évaluation des documents de prévision météorologique numérique (PMN). Le module se proposait de développer la capacité à évaluer les documents de prévision météorologique numérique sur la base d'une évaluation des champs de températures, de hauteurs, d'épaisseurs et de vent. M. Mark Hacksley, assisté de MM. Jay Anderson et Rick Raddatz, était le directeur de projets du module consacré à la prévision des tempêtes de neige et des fortes chutes de neige. Ce module se proposait de développer les qualités et méthodes nécessaires pour prévoir la hauteur et l'étendue des Fortes chutes de neige. Le troisième module de la première session, mis au point et présenté par M. Larry Romaniuk, directeur de projets, assisté de Mmes Heather Routledge et Doris Siemieniuk, portait sur la vérification et le contrôle de la qualité des messages sortie de prévisions destinées au public et de prévisions pour l'aviation.

Le premier module de la deuxième session portait sur les techniques d'analyse et de prévision des violentes tempêtes d'été. Mis au point et présenté par MM. Mike Shewel et John Bullas, il insistait sur les méthodes d'évaluation des menaces météorologiques graves élaborées par le *Severe Local Storms Center* (SELS), situé à Kansas City. Les trois études de cas présentées ont démontré l'application des techniques pour déterminer les régions où une grave activité orageuse est probable et pour évaluer la gravité des conditions météorologiques qui peuvent se produire dans la région. M. Carr McLeod a complété ce module en présentant un exposé sur l'interprétation des échos de radar météorologique transmis sur la bande C.

Le deuxième module de cette même session, présenté par MM. Brian Crowe et Henry Stanski et consacré aux prévisions à période prolongée portait sur l'économie des prévisions, les prévisions pour l'agriculture, la situation météorologique et la configuration de la circulation atmosphérique, et la vérification des prévisions à période prolongée.

Lors du premier séminaire, M. Hugh Fraser, de la sous-section des services scientifiques de la Région du Centre, est venu parler du rôle de cette sous-section. M. Einar Einarson, de la SSSS, a présenté un exposé sur la dispersion de la pollution due à la fumée provenant des incendies de tourbe, dans le sud du Manitoba. Le second séminaire comprenait des exposés présentés par M. John Junson, spécialiste en climatologie du Centre météorologique des Prairies (CMPR), MM. Bernie Aftanas et Jack Armstrong de la section informatique du CMPR tandis que MM. Dale Henry et Bob Beal ont traité des méthodes de vérification actuellement utilisées au CMPR.

Ces journées d'étude étaient vouées au succès car elles étaient axées sur les problèmes d'exploitation. On a mis en application dans le service courant du Centre météorologique des Prairies les notions enseignées pour l'évaluation des prévisions météorologiques numériques et des prévisions de fortes chutes de neige. Le module sur le temps rigoureux a permis d'améliorer les connaissances dans ce domaine et cet acquis servira lors du programme de 1977 sur les violentes tempêtes d'été, s'ajoutant aux compétences déjà établies dans ce domaine les étés précédents. Outre qu'il a fait ressortir la valeur, pour divers usagers, des prévisions à période prolongée, le module portant sur ce sujet a montré comme ce service est loin de fournir une prévision à période prolongée vraiment utile. Il ressort bien une certaine qualité de la prévision pour le troisième jour mais les prévisions pour le quatrième ou le cinquième jour n'en ont guère ou même pas du tout. En conclusion, et dans l'attente de meilleurs documents pour la prévision à long terme, le prévisionniste prudent doit éviter de faire des prévisions catégoriques des paramètres météorologiques pour une longue période. De telles prévisions seraient plus utiles si elles étaient limitées aux tendances probables au cours de la période prolongée.

MM. Réal Gagnon et Dave Gardner, de l'ACEC de l'Administration centrale du SEA, ont mis leurs ressources à notre disposition. MM. Doug Rosler, Ed Dobrzanski, Phil Wright, Glen Nicholas, Ron Carman et George Feher, membres du personnel technique d'exploitation du CMPR, ont fourni l'aide technique à la mise au point de diapositives et à la production et au rassemblement des cartes utilisées dans les modules. C'est M. Fred Sebastian qui a assuré la coordination de la première session des journées d'étude du CMPR et M. Wes Cott, celle de la deuxième.

### 1976 PATTERSON MEDAL AWARD



*Mr. J.R.H. Noble*

The Patterson Medal for 1976 has been awarded to Mr. J.R.H. Noble in recognition of forty years of distinguished service to meteorology.

Mr. Noble's career, as a practising meteorologist, as a developer of meteorological services for National Defence, as a distinguished administrator and as a promoter of meteorology in Canada and internationally, was a part of the most exciting and fruitful era in the history of meteorology.

The presentation was made by Mr. Roy Lee at the Awards Banquet during The Eleventh Annual Canadian Meteorological Society Congress, Winnipeg, on June 2, 1977.

### GAUSS BICENTENNIAL

Symposium held at The Ontario Science Centre, Toronto, 3-4 June 1977. Sponsored by The Royal Society of Canada and The Ontario Science Centre.

This symposium was held to mark the bicentenary of the birth of Carl Friedrich Gauss (30 April, 1777), one of the greatest mathematicians of all times. Seven invited papers were presented, six dealing with the contributions of Gauss in specific areas of mathematics, astronomy and geophysics, and the seventh presented by Professor K.O. May, University of Toronto, a noted biographer of Gauss, discussed the life and overall work of the great Geometer.

Dr. G.D. Garland in his address on Geomagnetism outlined the history of The Toronto Magnetic Observatory where meteorological observations were taken. This observatory later became the meteorological office and the magnetic observatory was moved to a new location. Sir Henry Lefroy who was the second director of the Meteorological Service was responsible for the establishing of the Magnetic Observatory, and also travelled through Western Canada taking magnetic observations.

The Atmospheric Environment Service Headquarters loaned historical, magnetic instruments, hand written records and photographs to the display held in conjunction with the Bicentennial Symposium.

Other papers tracing Gauss's influence on later developments of the subjects were: Algebra and Analysis by J.A. Dieudonné, doyen de la faculté des sciences, Université de Nice, Nice, France; Astronomy, by E. Forbes, Department of History, University of Edinburgh, Edinburgh, Scotland; Geometry by H.S.M. Coxeter, Department of Mathematics, University of Toronto, Toronto, Ontario; Number Theory by A. Selberg, Institute for Advanced Studies, University of Princeton, Princeton, N.J.; and Statistics by D.A. Sprott, Department of Mathematics, University of Waterloo, Waterloo, Ontario.

### SATELLITE PHOTO SUPPORTS WEATHER ANALYSIS TERMINOLOGY (?)

by

R. Raddatz

"A tongue of warm air over an occluded front has been positively (?) identified as a TROWAL supporting the Canadian Weather - analysis terminology and symbols. This significant (?) meteorological discovery resulted from the attached satellite photograph of January 2, 1977."





## LE CANADA EST PRÊT POUR LE CHAUFFAGE SOLAIRE

### Le Droit

Waterloo, Ontario. (PC) — Un rapport publié à la suite d'une étude qui a duré deux ans à l'Université de Waterloo, sur les possibilités de l'énergie solaire, soutient qu'il est désormais économiquement possible d'utiliser la chaleur solaire au Canada.

M. Terry Hollands, professeur d'ingénierie mécanique, et M. James Orgill, ingénieur, ont entrepris cette étude à la demande du Conseil national de recherches, et grâce à des subventions du gouvernement fédéral. Voici quelques-unes de leurs conclusions:

L'énergie solaire devrait être efficace dans les centres urbains de tout le Canada, en dépit des conditions variables du climat.

Le type de construction le plus pratique pour utiliser la chaleur solaire, c'est le logement "multiplex" — un immeuble composé de "maisons de ville" ou de petits appartements — parce que l'énergie solaire peut suffire aux besoins d'eau chaude au niveau résidentiel.

En division à 50-50 le chauffage des logements multiplex, (motié chaleur solaire, moitié chauffage conventionnel), on réaliserait une économie dès maintenant, en particulier si le chauffage d'appoint était l'huile. L'économie serait encore plus remarquable vers 1980, alors que le Canada devra payer les prix mondiaux pour le pétrole.

En Ontario et au Nouveau-Brunswick, une division similaire à 50-50 s'est révélée économique, par comparaison avec un système de chauffage à 100 pour cent électrique.

### Equations mathématiques

Les conclusions auxquelles les chercheurs en sont venus étaient basées sur des équations mathématiques reflétant le fonctionnement des systèmes de chaleur solaire confiés à un ordinateur, en même temps que des données météorologiques se rapportant à sept villes canadiennes.

L'évaluation économique effectuée par les chercheurs tenait compte de divers types de collecteurs, y compris des systèmes à base d'air ou de liquide comportant diverses capacités d'entreposage; elle était basée également sur les frais d'entretien, sur la durée de fonctionnement des systèmes avant de devoir être remplacés, sur l'effet des taux d'intérêt sur l'argent emprunté pour les installer, et sur les coûts futurs des fuels conventionnels.

Les chercheurs ont basé leurs calculs hypothécaires sur des taux d'intérêt de neuf et 11.5 pour cent.

M. Hollands dit que le facteur le plus important est le prix futur de l'huile. "Si les prix du pétrole continuent de monter plus vite que le coût de la vie, et si on pouvait obtenir un financement à bon marché, disons à neuf pour cent, pour installer un système à 50-50 avec l'huile comme fuel d'appoint, alors il semble qu'il soit économique, aujourd'hui, d'installer un système à chaleur solaire, particulièrement dans le cas des maisons "en rangée" ou de tout autre type d'édifice à logements multiples.

“Même si les prix du pétrole après 1980 ne montent pas plus vite que le coût de la vie, la chaleur solaire demeure intéressante si on songe à un arrangement à 35-65. un système qui pourvoit à environ 35 pour cent des besoins de chauffage – toujours en supposant qu’on puisse obtenir de l’argent à neuf pour cent.”

### **Concessions suggérées**

Même à des taux d’intérêt de 11.5 pour cent et en supposant que les prix de l’huile restent peu élevés, ont dit les chercheurs, le chauffage solaire ne coûterait qu’environ 20 pour cent de plus que le chauffage à l’huile.

Les gouvernements intéressés à conserver les ressources en pétrole devraient songer à faire des concessions dans les taux d’intérêt aux entrepreneurs qui construisent des installations solaires, ont ajouté les chercheurs.

Les commissions d’énergie paient environ neuf pour cent sur l’argent emprunté pour de nouvelles centrales nucléaires ou activées au charbon, tandis que les particuliers doivent payer environ 11.5 pour cent pour des prêts hypothécaires. Si ce dernier taux était réduit, il y aurait plus de maisons à chauffage solaire, et on aurait besoin de moins de centrales électriques.

M. Hollands a fait remarquer que les estimations faites par les chercheurs étaient basées sur la technologie existante, laquelle selon toute probabilité s’améliorera en même temps que le marché grandira.

Les chercheurs ont dit estimer qu’un système de chauffage solaire durerait environ 20 ans, M. Hollands a cité le cas d’un système en Floride, installé en 1948 et encore satisfaisant, ainsi que d’autres systèmes en Israël et en Australie, qui fonctionnent bien après 18 et 20 ans.

## **RECENT MILESTONES IN THE ICE BRANCH**

### **INTERNATIONAL ICE SYMBOLOGY**

At the December 1976 meetings of the WMO Commission on Maritime Meteorology, an urgent requirement to agree on the international ice symbols for facsimile charts was identified. The only effective way of achieving this goal seemed to be by operational trials, and Canada invited several countries to provide experts to participate. In remarkably short response time the trials were held in early March, 1977 in Gander, Newfoundland. They consisted of very detailed discussions arriving at proposals, following which operational tests took place in CF-NAY, the AES ice reconnaissance aircraft based in Gander.

The experts present were: Dr. Thomas Thompson from Sweden, Dr. V. Loschilov from USSR, Lt. Commander Thomas Nelson, USA, and Bill Markham from Canada. In addition, G. Verploegh attended from WMO as an observer and in effect became a writer of the WMO report. Mrs. Tanya Thorpe was provided by the Canadian government

as an English/Russian interpreter, Bill Webb was the AES Ice Reconnaissance Field Manager, and Bill Ganong acted as overall coordinator. An objective approach was taken toward the composition of an international ice symbology, with some of the best features of various national practices being adopted. A comprehensive set of symbols was developed with the basic one being in the shape of an oval inside and around which the ice information was plotted. As the shape of the symbol was somewhat like an egg, the result was informally referred to as the "egg code" developed by a group of "egg heads" who were referred to as "eggsperts".

#### **ACCIDENT TO CF-NAZ**

On March 31, 1977 at Summerside, Prince Edward Island, an accident occurred in which ice reconnaissance aircraft CF-NAZ was seriously damaged. There was no one on board the ice reconnaissance aircraft which was parked at the time. Unfortunately, there were casualties in the military aircraft involved. Actions have taken place to provide a substitute aircraft which will be Electra CF-NAX, also owned by Nordair. This will be available for ice patrol in the Arctic from July to October of this year. In order to fill the gap, the DC-3 from Millardair used for ice patrol on the Great Lakes this past winter was deployed to the east coast for May and the final half of June. It will be used in the Western Arctic during the latter part of June and early July.

#### **THE NEW ICE OBSERVER COMPLEX IN FROBISHER**

In order to provide accommodation for the Ice Observers during the summer and autumn reconnaissance period in the Frobisher area, a basic accommodation consisting of four ATCO trailers was planned and assembled there through the organizational leadership of Tom Kilpatrick. On the occasion of the Arctic Round Robin in May of this year, the complex was duly opened and commissioned by the Ice Observer team under Brian Kirkpatrick. Amongst the guests present was Dr. A.E. Collin, Assistant Deputy Minister of Ocean and Aquatic Sciences, who cut the traditional red ribbon and declared the facility operational.

#### **FIRST FEMALE ICE OBSERVER**

Old traditions change. In this particular case, another "male" bastion fell to the fair sex on June 13, when Miss Cheryl Leyten joined the Ice Branch as an ice observer.

Miss Leyten joined AES in 1972 with initial training and assignment as a surface technician at Edson, Alberta, followed by postings to Fort Nelson, B.C. and Watson Lake, Y.T. Upper air training in 1974 led to tours at Eureka, Resolute, Mould Bay and Coral Harbour. She completed the Ice Observer training course at AES HQ in 1975.

Good luck Cheryl!

**HAVE YOU MADE YOUR WILL**

**My Last Will and Testament**

Being of sound mind and memory, I \_\_\_\_\_, do hereby publish this as my last Will and Testament.

FIRST I give my wife only one-third of my possessions, and I give my children the remaining two-thirds.

(A) I direct that my heirs be not compelled to remain in undivided ownership and that my wife take action against the tutor to be appointed to my children for the partition of my estate.

(B) The Superior Court will assess the value of my estate, and all my property is to be sold to strangers and the proceeds of the sale be distributed as follows, one-third to my wife, two-thirds to my children.

(C) As a final safeguard, my children shall have the right to demand and receive a complete accounting from their mother (if she has been appointed guardian) of all of her financial actions with their money as soon as they reach legal age.

(D) Each child at the age of 21 shall have full rights to withdraw and spend his (her) share of my estate. No one shall have any right to question my children's actions on how they decide to spend their respective shares.

SECOND Should my wife remarry, her second husband, upon her death, shall be entitled to one-third of everything my wife possesses. Should my children need some of this share for their support, the second husband shall not be bound to spend any part of his share on my children's behalf.

(A) The second husband shall have sole right to decide who is to get his share, even to the exclusion of my children.

THIRD Should my wife predecease me or die while any of my children are minors, I direct my relatives and friends to get together and select a guardian by mutual agreement with the approval of the Superior Court. In the event that they fail to agree on a guardian, I direct the Superior Court to make the selection. If the court wishes, it may appoint a stranger acceptable to it.

FOURTH Under existing tax law, there are certain legitimate avenues open to me to lower death rates. Since I prefer to have my money used for governmental purposes rather than for the benefit of my wife and children, I direct that no effort be made to lower taxes.

IN WITNESS WHEREOF, I have set my hand to this my LAST WILL AND TESTAMENT  
This \_\_\_\_\_ day of \_\_\_\_\_ 19 \_\_\_\_\_.

*THIS IS THE "WILL" WHICH BECOMES OPERATIVE IF A MAN FAILS TO MAKE HIS OWN WILL.*

OIC's CONFERENCE  
GENERAL WEATHER SERVICES

CONFÉRENCE DES RESPONSABLES DES SERVICES MÉTÉOROLOGIQUES  
GÉNÉRAUX



Attending the OIC's Conference, Atlantic Region, held at Regional Headquarters, Bedford, N.S., May 16-18, 1977 were:

Assistaient à la conférence des responsables de la Région de l'Atlantique qui a eu lieu à l'Administration régionale à Bedford (N.-E.) du 16 au 18 mai 1977:

Seated: (L to R) — J.B. Elliott (QX), R.H. O'Brien (RSGWS),  
J.A.W. McCulloch (RD), J.A. Sutherland (RSWOS).

Standing: (L to R) — P.B. Young (YR), G.J. Porter (HZ),  
F.R.B. Decker (QY), H.A. Kinden (QM),  
S.J. Hickey (SJ), J.T. Spears (YG),  
F. Rowe (YT), L.A. Veinot (FC).

Assis: (de gauche à droite)  
MM. J.B. Elliott (QX), R.H. O'Brien (SRSMG),  
J.A.W. McCulloch (DR), J.A. Sutherland (SRSOM).

Debout: (de gauche à droite)  
MM. P.B. Young (YR), G.J. Porter (HZ),  
F.R.B. Decker (QY), H.A. Kinden (QM),  
S.J. Hickey (SJ), J.T. Spears (YG),  
F. Rowe (YT), L.A. Veinot (FC).

*IN MEMORIAM***EDWARD COOPER**

His many friends throughout the AES will regret to learn of the sudden passing of Edward (Ed) Cooper on May 7, 1977. Ed had over thirty-three years of service, mostly at the Gander Weather Office. His first posting was at Goose Bay and then on to Gander. He proved himself in a number of positions including that of Senior Technician. He became a Presentation Technician some ten years ago and served with distinction. He was held in high esteem by all who knew him. He brought to his work a sense of dedication and extraordinary zeal that won him many tributes. We extend our sincere sympathy to the family.

**LE TEMPS ET L'EAU  
LE DÉFI ÉCOLOGIQUE**

Au cours des dernières années, le monde a pris de plus en plus conscience de ce que l'homme pollue l'atmosphère et les eaux de la terre. La gravité de la situation a incité les gouvernements du globe à instituer le programme des Nations Unies pour l'environnement, qui a développé considérablement les possibilités offertes aux savants de s'attaquer aux problèmes relatifs à l'environnement. Les hydrologistes et les météorologistes ont une contribution particulièrement importante à apporter à ces activités, l'OMM étant, de par sa nature même, une organisation appelée à s'occuper de l'environnement.

l'OMM a relevé avec énergie le défi écologique. Elle a déjà lancé un certain nombre de projets, dont certains traitent de la pollution de l'environnement du fait de l'homme, alors que d'autres visent à protéger celui-ci contre quelques-uns des phénomènes naturels les plus dramatiques, tels que les cyclones tropicaux; d'autres projets encore protègent l'homme contre la menace plus insidieuse des sécheresses et des changements climatiques, dont les effets sont néanmoins tout aussi destructeurs. Pour toutes ces activités, l'OMM a collaboré pleinement avec le PNUE et d'autres organismes inter-gouvernementaux, comme la Commission économique et sociale pour l'Asie et le Pacifique (CESAP), et avec le Bureau du coordonnateur des Nations Unies pour les secours en cas de catastrophe (UNDRO). Un programme capital du PNUE est le Système mondial de surveillance continue de l'environnement (GEMS), dans le cadre duquel l'OMM apportera une importante contribution au projet de surveillance de la qualité des eaux.

Au cours de la dernière décennie, les chefs de gouvernements et les savants se sont rendus compte que les problèmes posés par les ressources en eau dépassent ceux qu'engendrent la crise alimentaire mondiale et la pollution de l'environnement. Certaines activités internationales, comme le Programme d'hydrologie opérationnelle de l'OMM, ainsi que l'éducation du public à la suite de la Décennie hydrologique internationale, ont énormément contribué à améliorer nos connaissances sur la nature et le volume des ressources en eau dont dispose l'homme pour répondre à ses besoins. Ressources et besoins en eau doivent être continuellement contrôlés: il est toutefois urgent maintenant de déterminer, pour l'avenir, la stratégie du développement et de l'utilisation des ressources

mondiales en eau en tenant compte des progrès de la technique. L'Organisation des Nations Unies convoque à cette fin une Conférence sur l'eau, qui se tiendra en Argentine. Les hydrologistes et les météorologistes du monde entier, les services nationaux et organismes régionaux s'occupant de l'hydrologie et des ressources en eau, tous autant qu'ils sont, sont vivement intéressés par cette conférence à laquelle l'OMM apporte une contribution importante.

Nous avons pu constater combien est étroit le lien entre le temps et l'eau ou, en d'autres termes, entre les météorologistes, d'une part, et les hydrologistes, de l'autre. Si des progrès substantiels doivent être réalisés dans le combat séculaire livré pour faire face à une situation de trop grande abondance ou de pénurie d'eau, il faudra poursuivre et intensifier la collaboration entre savants et techniciens spécialisés dans ces importantes disciplines.

Au cours des dernières années, on s'est de plus en plus rendu compte de l'interdépendance et de la complexité des problèmes en jeu, prise de conscience qui s'est manifestée de plusieurs façons. Nous avons noté la décision des milieux internationaux, en 1975, de modifier la Convention de l'Organisation météorologique mondiale pour permettre à celle-ci d'inclure l'hydrologie opérationnelle parmi ses activités. Plus récemment, nous avons vu que l'Organisation des Nations Unies a décidé d'organiser une Conférence sur l'eau.

Un certain optimisme est justifié, car, en réalité, les météorologistes et les hydrologistes ont instauré, aux niveaux tant national qu'international, une fructueuse collaboration, sans réserve, qui continue à se développer. Les efforts conjugués qu'ils ne cessent de déployer offrent le meilleur espoir de trouver des solutions aux problèmes qui harcèlent l'humanité dans ce domaine depuis les temps les plus reculés.



## RETIREMENT

### GEORGE HAYLOCK – OFFICER-IN-CHARGE, GODERICH WEATHER STATION

George Haylock retired from the Atmospheric Environment Service on March 31, 1977, after nineteen years in the Ontario Region. George acquired an interest in meteorology during wartime service as a flying instructor and a post-war period working in the forestry industry.

During his time with the A.E.S., George served as an observer at Toronto Weather Office, Kapuskasing, and London. For a short period he was a meteorological instructor at the Air Services Training School and for the past seven and a half years has been the officer-in-charge at Goderich Weather Station.

Don Hall and Bob Verge of Ontario Region Headquarters motored to Goderich on April 6, to take George and his wife, Betty, to dinner. Bob presented George with his retirement certificate and a gift certificate which was purchased thanks to the contributions of George's many friends in the Ontario Region.

**PERSONNEL**

**The following have accepted positions as a result of competitions:  
Les personnes suivantes ont accepté ces postes après concours:**

76-DOE-WIN-CC-525	Presentation Technician EG-ESS 5 Churchill A.W. Miskolczi
77-DFE-WIN-CC-500	Officer-in-Charge EG-ESS 6 Churchill Weather Office S. Metcalf
76-DOE-WPNA-CC-189	Supervising Meteorologist MT 6 Arctic Weather Centre A.P. Leganchuk
77-DOE-CC-AES-4	Senior Meteorologist MT 5 Maritimes Weather Office B.J. Wallworth
76-MDE-RQN-CC-14	EG-6 instructeur à la Faculté de Météo- EG-ESS 6 rologie à l'Ecode du MDT à Ottawa, promu à EG-6, inspecteur en météorologie de surface à la Région du Québec. Girard, G.
76-MDE-RQN-CC-15	MT-5 au BPQ, promu à MT-6 aux Services MT 6 Scientifiques de la Région du Québec. P. Ducharme

**Appointments:  
Nominations:**

E.W. Brandon	Scientific Services Meteorologist MT 7 to Acting Superintendent, Scientific Services, Atlantic Region.
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**New Appointment:  
Personne nouvellement engagée:**

B.J. Paruk	Reported for duty at the Ontario Weather MT 2 Centre, Toronto International Airport.
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The following transfer took place:  
La mutation suivante a été effectuée:

G. Hykawy	From: De Edmonton MT 3
	To: A Resolute

Resignation:  
Démission:

Jay E. Campbell	Program Development and Evaluation Branch MT 7 AES HQ
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Retirement:  
Départ à la retraite:

C.J. Robinson	Regional Met. Inspector EG-ESS 6 retired from Central Region Office in April of 1977.
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Deceased:  
Décès:

Edward Cooper	Gander Weather Office passed EG-ESS 6 away suddenly on May 7, 1977. Mr. Cooper was with the Government Service for 34 years.
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Recent Graduates of AOTC:  
Nouveaux diplômés de CFOA:

J. Kivisto	To: A Isachsen
R. Prior	To: A Isachsen
C. Chambers	To: A Mould Bay
R. Ziolkoski	To: A Resolute
A. Gillespie	To: A Resolute
M.I. Darr	To: A Trout Lake

Recent Graduates of TCTI:  
Nouveaux diplômés de TCTI:

G. Kunz	To: A Atikokan
G. Apperly	To: A Atikokan
K. Grant	To: A Broadview
B. Feher	To: A Gimli
D. Ullberg	To: A Island Lake

TRIVIA

"Man is disturbed not by events, but by his view of these events."  
Epictetus

"In all the world there is nothing more powerful than an idea whose time has come."  
Rousseau

"Fight for your highest attainable aim but do not put up resistance in vain."  
Selyé

\* \* \* \* \*

The only exercise many business men get is jumping to conclusions,  
sidestepping responsibilities, and pushing their luck.

\* \* \* \* \*

Sound marriage is not based upon complete frankness but upon sensible reticence.

\* \* \* \* \*

If the clouds go north a skipping, they will come back a dripping.

\* \* \* \* \*

Your ideals, as they are applied, may become stumbling blocks  
or stepping stones.

\* \* \* \* \*

Use words that are soft and sweet,  
for you may have to eat them.

\* \* \* \* \*

FAMOUS YEARS

- 1878 — Thomas Edison makes light of his inventions.
- 1937 — German hairdresser Freda Brot, teases her Herr.
- 1976 — Heckler needles speaker at acupuncture convention.
- 1873 — Alexander Graham Bell first ding-a-ling.
- 30 BC — Forum chef caught watching Caesar dressing.
- 1951 — Two Gregorian Monks meet by chants.
- 1969 — Topless musicians become band in Boston.

Source de pollution par le plomb tout à fait inattendue: les pages en couleurs des illustrés! Surtout des illustrés sur beau papier, satiné ou couché. Lavez-vous donc les mains après les avoir feuilletés.

\* \* \* \* \*

Pollution à haute altitude: une expédition polonaise vient de relever de très nombreuses traces de pollution chimique sur les pics les plus élevés de l'Himalaya.

\* \* \* \* \*

M. Geoff Arthurs, un Australien, fait cuire ses “hot dogs” grâce à l'énergie solaire. Il a, en effet, réussi à construire – entre autres appareils domestiques utilisant l'énergie solaire – un petit réchaud transportable qui utilise un miroir parabolique en métal, garni de petits miroirs orientables, pour concentrer la chaleur sur un plateau où cuisent les aliments.

### TIME

Take time to think – thoughts are the source of power.

Take time to play – play is the secret of perpetual youth.

Take time to read – reading is the fountain of wisdom.

Take time to pray – prayer can be a rock of strength in time of trouble.

Take time to love – loving is what makes living worthwhile.

Take time to be friendly – friendships give life a delicious flavour.

Take time to laugh – laughter is the music of the soul.

Take time to give – any day of the year is too short for selfishness.

Take time to do your work well – pride in your work, no matter what it is,  
nourishes the ego and the spirit.

Take time to show appreciation – thanks is the frosting on the cake of life.

### DES PROVERBES QUÉBÉCOIS

“Si les roses ont des épines, sous les épines se cachent les roses.” – Une apparence rébarbative cache un cœur d'or.

“Dieu est parti, les enfants s'amuse.” – Énoncé ayant souvent trait à la météorologie: à propos d'une période de mauvais temps qui se prolonge.

“Pierre qui roule n'amasse pas mousse.” – Trop de changement empêche d'accumuler quoi que ce soit.

“Quand la corde est trop raide, elle casse.” – Quand la situation est trop tendue, elle éclate.

“L'arbre tombe toujours du côté où il penche.” – On agit toujours selon ses inclinations.

“C'est en forgeant qu'on devient forgeron.” – C'est en travaillant qu'on acquiert de l'expérience.

## LETTERS TO THE EDITOR

Dear Editor

A rather lamentable state of affairs exists in Canada's handling and recording of tornado statistics. In spite of the fact that the tornado is the most destructive form of localized energy release in the atmosphere (Davies-Jones, Kessler, 1974); in spite of the fact that hundreds are known to have occurred from coast to coast across the nation; in spite of the fact that over the years at least 150 people have died as a direct result of tornado activity, many more injured or made homeless, and multi-millions of dollars worth of property damaged; in spite of all this, Canada does not have a national policy of recording them, studying them, or maintaining a tornado inventory. Frankly, I am surprised that the meteorological community has not been called to account long ago. This lack of interest in tornadoes is all the more bewildering in view of the time which has been spent in gathering such unproductive statistics as phenological information and noctilucent cloud data.

This is not to say that tornado information in Canada is completely lacking. A significant effort has been made by interested individuals and groups to discover something about tornado climatology and behaviour. Most notable is the work of A.B. Lowe and G.A. McKay. During the 1950's and early 1960's they compiled data for western Canada dating back to the 1800's. Their work, now available in the form of a booklet and three published papers, still stands as the most comprehensive listing of the phenomena. To some extent, their efforts have been updated by others, but as far as eastern Canada is concerned we are abysmally ignorant. Furthermore, Canadian studies of tornado dynamics and thermodynamics can be counted on the fingers of one hand.

To some degree this neglect of the tornado has been due to the misguided belief that they seldom occur in this country. The following headline, published in a Canadian newspaper of 1890 will serve to illustrate;

### CYCLONELESS CANADA

#### A TERROR INDIGENOUS TO THE UNITED STATES

Why Canada escapes while the United States  
is scourged by tornadoes year after year.

At about the same time, the newspapers reported a dialogue between General Greely (head of the U.S. Signal Service) and his Canadian counterpart, Prof. Carpmael, in which they discussed the (apparent) lack of tornadoes in Canada. If they had only read the newspapers of the time they would have discovered how very wrong they were. For example, the Niagara Mail reported a storm on the 18th of April 1855 which "came from the north, or NNE, apparently leaping in its course, and striking the ground at intervals with redoubled force. The rush of wind lasted about five minutes and was at its height not more than one minute. But the damage it did was tremendous. It struck the Niagara Car works, and in an instant levelled two large finishing shops, each 175 feet by 50, and two stories high containing a number of new cars . . . a passenger car was lifted bodily off the track near the station house and thrown to some distance from where it stood . . . etc.

The Montreal Witness and the Huntingdon Gleaner reported a horrific tornado which tracked from St. Zotique to Valleyfield, Quebec on the 16th of August 1888. This storm left a death toll of 9 (one man, Giuseppe Sauve, was found impaled to the mud by a

piece of picket fence which had pierced his neck and protruded from his left temple), an injured list of 14, and numbers homeless. The lighthouse keeper at Grosse Point, where the storm crossed the St. Lawrence River, described the situation as follows:

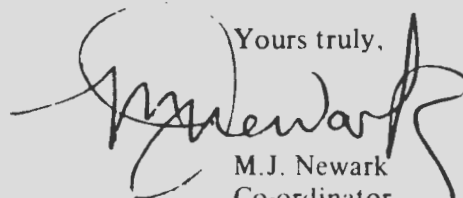
"the cloud passed not over 100 feet west of the lighthouse. It was like a great wall of green smoke, accompanied with hay, straw, pieces of board and all sorts of debris. The cloud was funnel-shaped and seemed to work like a cork-screw. Wherever it struck, the water rose high in the air . . . striking land close to the feeder, the house of Francois Daoust was laid low. He was thrown up into the air and his wife with her young baby was thrown in a ditch some distance off."

As long as 18 years ago, Lowe and McKay alluded to the prevalent belief that tornadoes seldom happen in Canada, and pointed out just how erroneous it is. As recently as 1973, in a submission to the Solandt Commission, McKay found it necessary to make the same point over again.

In an effort to discover more about the climatology of tornadoes in eastern Canada, I have started a private project to gather information from newspaper sources. Besides myself there are two other project team members from the Ontario Weather Centre, namely Arlene Yakely-Pender and Peter Elms. Locally available clipping files have been reviewed and nearly 70 dailies in eastern Canada will be approached with a request for information from their library files. In Ontario, where we have the backing of the regional director of the A.E.S., the letters have already been mailed and a response is now being received. The second phase of the project will be to update the information for western Canada and amalgamate it with that for the east into a national summary of tornado activity.

Besides the newspapers, another important source of tornado information is the meteorological community itself. Since the CMS Newsletter, The Forecaster and Zephyr are avenues of communication with this group, may I ask you as editor, to publish an appeal for tornado information. Details concerning location, date and time, deaths, damage, peculiarities, meteorological circumstances, etc., for any tornado event within Canada would be most happily received at the above address. Even if detail is lacking, and only an approximate time or location may be available, this information would still be useful. I should perhaps point out that for purposes of the project, a tornado event is defined as follows;

- either (a) a funnel cloud has been sighted, touching the ground,
- and/or (b) a storm report (by whatever source) indicates the typical characteristics of a tornado, i.e., a narrow swath of damage, capricious and unusual consequences, large and heavy objects thrown through the air, unusual atmospheric sounds and colouration, death and/or destruction.

Yours truly,  
  
M.J. Newark  
Co-ordinator  
Tornado Project.

Ed. NOTE:

Anyone having information can get in touch with the Co-ordinator at:  
10 Woodbrook Drive  
Brampton, Ontario.  
L6W 1W5

Dear Editor,

I do not know where you got your story on the origin of Murphy's Law in the 1940's (Zephyr, February, 1977) but it is entirely erroneous. Several forms of the law were already well-known to graduate students of Physics in the 1930's. About 1936 I rephrased one of these laws (possibly while under the influence of Einstein's Theory of Relativity) to read as follows:—

“Events order themselves in such a way to maximize the difficulties they cause.”

You will readily recognize the similarity to the laws Nos. 1, 9, 12, 13 and 14 of your article.

It is also possible that Murphy's Law is just a reformulation of “Kuznetsov's Rule”, which appeared in the Russian literature in the late nineteenth century. Literal translation of this rule has, however, always been censored.

Yours sincerely,

Clarence Penner

P.S. This letter will, ipso facto, demonstrate the validity of laws Nos. 2, 5, 6, 7 and 15 of your article.