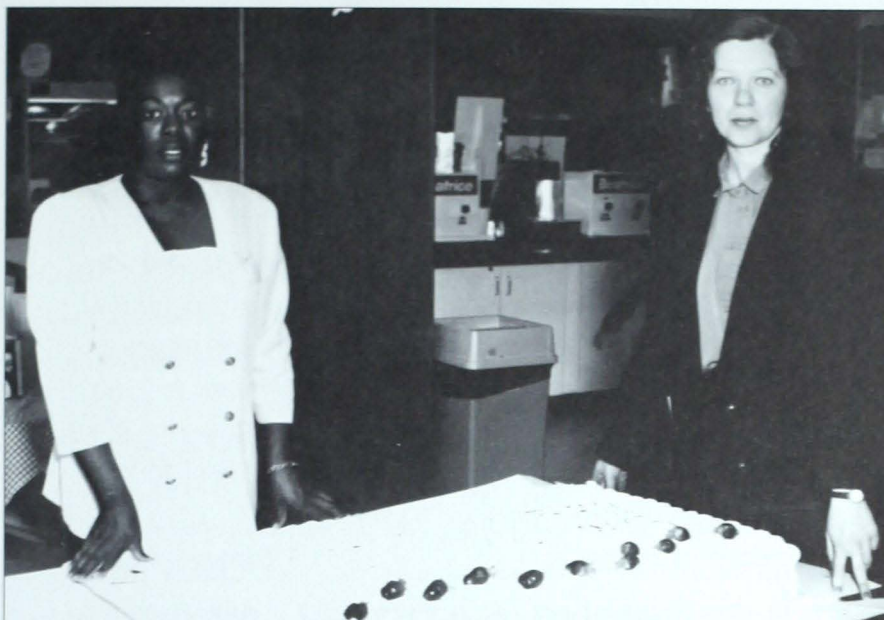


FOND MEMORIES, WARM FAREWELLS



THE ATMOSPHERIC ENVIRONMENT PROGRAM'S LARGEST RETIREMENT PARTY EVER TOOK PLACE MAY 18 IN DOWNSVIEW. AS 109 LONG-TIME FRIENDS AND COLLEAGUES SAID FAREWELL, THEY REFLECTED ON FOND MEMORIES OF THEIR COLLECTIVE 1000 YEARS' SERVICE WITH THE DEPARTMENT AND SHARED THEIR DREAMS FOR THE

FUTURE. ASSISTANT DEPUTY MINISTER GORDON McBEAN WISHED THE RETIREES WELL AND THANKED THEM FOR THEIR ACHIEVEMENTS. AMONG THE ORGANIZERS WHO MADE THE EVENT A SUCCESS WERE VERNE LORDE (LEFT) AND DEBORAH BAXTER (RIGHT), AS WELL AS KATHY HAYES, DAVID PHILLIPS, MARY ANNE TEETER AND THERESSA ARSENAULT.

Phil Merilees wins national award

On May 31, for distinguished service to meteorology in Canada, Phil Merilees received the 1994 Patterson Medal.

Held at the annual Canadian Meteorological and Oceanographic Society (CMOS) Congress in Kelowna, B.C., the award ceremony was attended by numerous representatives of the Atmospheric Environment Program, former staff and dignitaries. Currently AES' highly respected Director General for Climate and Atmospheric Research, Phil was presented with the award by Jim Bruce, former AES Assistant Deputy Minister.

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A t m o s p h e r i c E n v i r o n m e n t S e r v i c e



Environment
Canada

Environnement
Canada



THE CANADIAN WEATHER TRIVIA CALENDAR IS BACK!

The *Canadian Weather Trivia Calendar*, created by Environment Canada's David Phillips, is a national bestseller that sold over 40,000 copies the last time it appeared. It has been unavailable since 1991, but will be back and better than ever for 1996.

The *Canadian Weather Trivia Calendar 1996* includes daily weather history, weather records and anecdotes from Canada and around the world, zany weather trivia, the popular weather quiz, and twelve exceptional full-colour weather photographs by professional photogra-

phers from across the country.

And, unlike other wall calendars, this one comes with a mini-magazine supplement. "Weather Flashes," a 16-page insert exclusive to the *Canadian Weather Trivia Calendar 1996*, is jam-packed with information, illustrations, and bizarre weather tales the whole family will enjoy.

Watch this summer for the *Canadian Weather Trivia Calendar 1996* on the shelves of book stores for the price of \$13.95.

Étienne Grégoire

PHIL MERILEES WINS NATIONAL AWARD

Continued from page 1

"Dr. Merilees is recognized as an individual who has had a profound influence on meteorology in Canada as a researcher, scientific administrator, educator, and leader in the meteorological community," Mr. Bruce said. "His collaborative efforts have produced the world-class level of research excellence which characterizes the atmospheric sciences and operational meteorology in Canada."

Joining AES in 1977 as a research scientist, Phil later became chief scientist of the Canadian Climate Centre. He has played a leading role in promoting research in the public and private sectors and the academic community. Phil was also instrumental in forging strong Canadian university programs in atmospheric sciences and in establishing CMOS' At-



Phil Merilees (right) accepts the Patterson Medal from Jim Bruce.

mosphere-Ocean as a scientific publication in meteorology of the highest international standard.

The Patterson Medal was named in honour of Dr. John Patterson, controller of meteorological services in Canada from 1929 to 1946 and recipient of the first award 40 years ago.

Beverly Pasian

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Published by the Communications Directorate of Environment Canada, *Zephyr* is a newsletter for and about the staff of the Atmospheric Environment Program.

Our mission is to provide quality service through science for the sustainable benefit of Canadians and our environment.

Zephyr is **your** newsletter. We would like to hear from you. Your submissions, story ideas, graphics and pictures are most welcome.

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Environment Canada's weather kids

EACH SCHOOL DAY, EIGHTH GRADERS AT THREE NORTHERN SASKATCHEWAN SCHOOLS GO OUTSIDE TO READ THERMOMETERS AND RAIN GAUGES AND TAKE WEATHER OBSERVATIONS FOR ENVIRONMENT CANADA. IT'S ALL PART OF AN ENVIRONMENT CANADA PILOT PROGRAM THAT HELPS TEACH STUDENTS ABOUT THE WORLD THEY LIVE IN. SINCE LATE FEBRUARY, STUDENTS AT THE THREE SCHOOLS (OPAWIKOSCIKAN SCHOOL IN PELICAN NARROWS, JOHNNY STEWART SCHOOL IN CUMBERLAND HOUSE, AND BERNARD CONSTANT COMMUNITY SCHOOL ON THE JAMES SMITH RESERVE) HAVE BEEN LEARNING ABOUT THE WEATHER AND THE ENVIRONMENT. THE DATA THEY COLLECT IS SENT TO ENVIRONMENT CANADA, WHERE IT HELPS FORECASTERS GET A BETTER IDEA OF THE WEATHER CONDITIONS IN THESE AREAS. TRANSPORT CANADA'S FLIGHT SERVICE OFFICE ALSO RECEIVES THE OBSERVATIONS. "THE STUDENTS' OBSERVATIONS ARE VERY USEFUL," SAID JOHN BULLAS, MANAGER OF THE SASKATCHEWAN ENVIRONMENTAL SERVICES CENTRE IN SASKATOON. "WE DON'T HAVE OUR OWN



Students make posters about weather observing for Environment Canada. Departmental staff supplied equipment and training.

REPORTING STATIONS IN THOSE SMALL COMMUNITIES. WEATHER CAN BE VERY LOCALIZED, SO EVERY WEATHER OBSERVATION WE RECEIVE HELPS US." STUDENTS ARE ENTHUSIASTIC ABOUT THE PROGRAM. "I LEARNED TO READ A THERMOMETER AND MORE ABOUT SCIENCE AND THE WEATHER," SAID ONE STUDENT FROM BERNARD CONSTANT COMMUNITY SCHOOL. "EVERYTHING WAS FUN TO DO." - MARIELLE GAUTHIER

WMO salutes ultraviolet pioneers

Jim Kerr and Tom McElroy of Air Quality Research Branch are the 1995 winners of the prestigious Gerbier-Mumm International Award for meteorology.

The World Meteorological Organization grants the prize in recognition of "an outstanding original scientific paper".

The two scientists were the first to prove definitively that there have been increases in ultraviolet-B radiation on Earth as a result of ozone depletion. Their research paper appeared in the American journal *Science* on November 12, 1993, and became the subject of articles in dozens of newspapers around the world.

"We were happy to hear that our paper made such an impact on the scientific community," said Jim.

He, Tom and their colleague David Wardle designed the first reliable UV sensor and measured ultraviolet-B radiation and ozone at Toronto from

1989 to 1993. They found that the intensity of light at wavelengths near 300 nanometres (the short wavelength end of ultraviolet light from the sun) increased by 35 per cent per year in winter and 7 per cent per year in summer. At the same time, ozone decreased by 4.1 per cent per year in winter and 1.8 per cent in summer.

"In the early days, there were no accurate UV instruments," said Tom. The instruments were difficult to calibrate and maintain, and measured only broad-band UV-B radiation, which varies with many factors other than stratospheric ozone. Clouds, for example, can reduce UV radiation before it gets to Earth.

The AES researchers' instrument got around these problems. It's easy to calibrate independently and measures radiation at a range of UV wavelengths

so that the influence of clouds, haze and pollutants can be distinguished from the effects of ozone change.

The Brewer Ozone Spectrophotometer is now used at Environment Canada monitoring stations and in nearly 30 countries around the world. It is manufactured by Sci-Tec Instruments Limited of Saskatoon under a royalty agreement with Environment Canada.

Jim and Tom said their research was motivated by concerns about "possible detrimental effects on human health and other biological systems that might follow from increased levels of ultraviolet-B radiation."

They plan to continue monitoring UV and ozone, to expand the UV monitoring network, and to see whether controls on ozone-depleting substances under the Montreal Protocol are actually helping the ozone layer.

Wendy Steere



Job search: *set a new course in life*

Making a career transition or finding a new job is never easy. Where to begin?

Human Resources offers many helpful services: counselling, books, job referrals and more. But perhaps the best way to deal with a job loss is to take responsibility and initiative for yourself. You have a new job: as marketing director in charge of selling yourself to new employers.

Before setting out, you must have a good knowledge of the product—you—and the kind of work that would suit you.

The key is not to let your job define you—as a meteorologist or engineer or whatever you do now. Instead, define yourself first and discover several jobs that match your unique characteristics.

Brainstorm. Think about what you have done in your life—not just at work but everywhere—and write down your experiences, achievements, skills and knowledge. The following questions can help.

1. *What kind of work have you done?* Consider your duties during a regular work day and a regular work week. Write down the tasks that you performed at your last job and in previous jobs.
2. *What are your hobbies?* List your leisure activities, clubs or associations that you belong to, community work, volunteer work, and any special interests that you may have.
3. *What do you like to do most? What do you do best?* Look at your responses from the earlier questions and write down five to ten things. (Wouldn't it be great if you could identify your favourite activities and make them part of your next job!)

4. *Have you received any formal training and/or education?* List high school, college and university experience, as well as special courses and certificates.

6. *What are your transferable skills?* Check those at right that you have. If you can think of others, write them down too.

Now you're ready to prepare your resume.



"IF YOU PROSPECT ENOUGH, THINGS ALWAYS PAN OUT."

RESUME TIPS

Your resume is your advertising flyer. It tells employers your qualifications, work experience and education, and should include:

- Name, address and telephone number.
- Educational background: university, college, secondary school, technical school; the dates you attended, and your diplomas, degrees, certificates or awards.
- Work experience: employer, location and a brief description of duties.
- Volunteer work or extracurricular activities, particularly those that relate to

the job you are seeking.

- Skills and abilities.

Your resume can be chronological or functional, or a combination of the two. The chronological resume is a chronological record of education and work history. It's easy to develop and familiar to managers, and highlights steady employment, but it may not emphasize accomplishments and shows gaps in employment or education.

The functional resume is a record of qualifications or skills and accomplishments without dates. It hides gaps in employment and highlights talents, but takes some time to develop and is less familiar to managers.

DOS AND DON'TS

Do use simple words, short sentences, clear language, and action verbs. Pay attention to presentation: lots of white space, no more than two pages, no typos or grammar mistakes. And revise, condense, and revise.

Don't use jargon, abbreviations, acronyms, long paragraphs, narrative form or exaggerations. Don't list your marital status, children, race, age, sex, religion, S.I.N. or P.R.I., previous salaries, or availability date.

Whether your resume is junk mail or welcome information depends on how you use it. Don't send it out in a scatter-gun approach; it will likely end up in the garbage. Target employers who need someone like you now or very soon.

How do you find these employers? Through networking.





"CLIMB EVERY MOUNTAIN...FOLLOW EVERY RAINBOW...UNTIL YOU FIND YOUR DREAM."

ACTION WORDS FOR TRANSFERABLE SKILLS

- A ADMINISTER, ANALYZE, ASSEMBLE
- B BUDGET
- C CALCULATE, COMPILE, CONSTRUCT, COORDINATE, COUNSEL, CREATE, COACH
- D DECIDE, DELEGATE, DESIGN, DIRECT
- E EDIT, ESTABLISH, ESTIMATE, EVALUATE, EXAMINE, EXPERIMENT, EXPLAIN
- F FACILITATE, FORMULATE, FIND
- G GUIDE
- I INSPECT, INFORM, INSTALL, INTERPRET, INTERVIEW
- J JUDGE
- M MAINTAIN, MODIFY, MANAGE, MATCH, MONITOR, MOTIVATE
- N NEGOTIATE
- O OBSERVE, ORDER, OPERATE, ORGANIZE, ORIENT
- P PLAN, PRESENT, PROGRAM, PRODUCE, PROMOTE
- R RECOMMEND, RECORD, RECRUIT, REGULATE, REPAIR, REPRESENT, RESEARCH, RESTRUCTURE
- S SELL, SERVE, SKETCH, SUPERVISE
- T TEACH, TRANSLATE, TRAIN, TYPE, TROUBLESHOOT
- V VERIFY
- W WRITE

Don't just wait, network!

Don't sit waiting for the phone to ring: develop your own job leads through networking. The more contacts you make, the more likely you are to find a new job. Set yourself a goal of contacting, say, 10 people a day.

Sources of job leads include:

- Friends, relatives and acquaintances
- Former employers and colleagues
- School or college placement offices
- Private employment agencies • JOBS on-line bulletin board • Competition posters • Public Service Commission
- Newspaper ads • Yellow pages
- Volunteer or community associations
- Canada Employment Centre • Library resource directories • Internet.

RESEARCH THE EMPLOYER

Once you have found a few job leads, learn all you can about the job and employer—remember, "Knowledge is power."

Talk to people who are working in the position that you are researching. They will be able to give you the most realistic picture and describe the pros and cons of the job. Every time you speak to someone, it is a good idea to get their name and address. Send a thank-you note for taking the time to meet with you and answer your questions, which could include:

- How did you get interested in this work and how did you get hired?
- What excites you or interests you the most about it?
- What do you find is the thing you like the least about it?

- What kinds of challenges or problems do you have to deal with in this job?
- What skills do you need to meet those challenges or problems?

Get written information: Libraries carry professional, trade and business association publications as well as pamphlets, booklets, brochures and annual reports (or main estimates) from companies and government departments.

- Get the name, address and telephone number of the employer.
- Who are the top officials?
- How old and how big is the organization? How many people does it employ?
- Is it a local, national or international organization? Where is the head office?
- Has the organization been growing steadily over the past five or ten years?

MAKE CONTACT

Research done, you're ready to put your best foot forward and contact employers, by telephone or in person. Apply for a specific job whether or not one has been advertised. Employers are impressed by people with initiative.

Here is a sample script. Ask to speak to the manager of the area that interests you. Introduce yourself; outline your abilities and try to arrange an interview. Offer to leave your resume and ask, "Do you know anyone else who might be hiring? Would you mind if I said that you suggested I call when I speak with them? Would you mind if I check back with you in case a position does become available?"

Record the time, date, company, contact person, and the outcome of your call. Follow up on new leads.



Your job interview should be an exciting time. The employer is obviously interested in you. Now it is up to you to show that you are the most qualified person to fill the job.

To prepare for the interview, think of likely questions and practice your answers. You'll get some clues to the questions from reading the job description, organization chart and statement of qualifications and from researching the employer, industry and job.

TYPICAL QUESTIONS

1. Tell me about yourself.

Purpose: To put you at ease. To learn from you why they should or should not hire you. To find out if your mind is on what you can offer an employer or if it is on personal concerns that may interfere with your work performance. To learn a little bit about your background.

Suggestions: Briefly touch on your qualifications and experience related to the job, your attributes, including your

THE JOY OF THE JOB INTERVIEW



ability to get along with others and appropriate personal information to show stability and a well-rounded character.

2. Tell me about your experience with this type of work.

Purpose: To find out whether you can do the job.

Suggestions: If you have done this

work, state where and give examples of your achievements. If you have done related work, state your transferable skills. Show your interest in the position and your willingness to learn. If you have not done this work, mention other work-related attributes and skills. Quickly show your interest in on-the-job training.

3. Why do you want to work here?

Purpose: To find out what you know and like about the organization and if you would stay. To see if your work qualifications fit their requirements and approach. To find out if you are genuinely interested in contributing to the company or only the security, benefits and prestige they offer.

Suggestions: Describe what you know about the company. If appropriate, compliment the company (ie. reputation, service, growth, product). Mention the effort you have put into collecting background information. Say that you like the work you do and show how your skills match their requirements.

Interview checklist

- ✓ Appear neat and dress in the manner appropriate for the job.
- ✓ Bring: a copy of your resume, letters of recommendation, a list of references, samples of your work (if applicable), the information that you have gathered about the organization, as well as a list of questions.
- ✓ Arrive no more than ten minutes ahead of time. Take a few minutes to relax and review your notes or job-related material. Be friendly and business-like with everyone.
- ✓ Greet the interviewer and introduce yourself. Shake an offered hand. Follow the lead of the interviewer; stay on topic and ask for clarification where necessary. Be attentive, enthusiastic and maintain eye contact. Act confident without bragging.
- ✓ Ask questions about the company and job that demonstrate

your knowledge and interest. Interviews are a two-way street. On the one hand, they give the employer an opportunity to get to know you. On the other hand, they give you the opportunity to get to know the employer. The questions you ask are as critical as those that the employer will ask. The following are a few suggestions.

- What is the size of the department/branch/section?
- Who would I report to directly? How long has this person been with the company? What is his/her background?
- What is the organization's management philosophy? Does the organization have plans for expansion or reduction?
- What are my opportunities for advancement? Do you have a training program? Could you please describe it?
- How many people are being interviewed for this position?



4. What are your strengths?

Purpose: To discover reasons for hiring you. To find out how well you know yourself. To find out if you believe in yourself and if you are the right person for the position.

Suggestions: Mention that besides the work skills, training and experience that you would offer, you also offer job-related qualities such as reliability, enthusiasm, dependability, flexibility and efficiency. If time permits, back up these qualities with examples.

5. What are your weaknesses?

Purpose: To discover if you are wrong for the job as a result of a lack of experience or training, poor people skills, poor attitude, or laziness.

Suggestions: Describe a positive attitude, then continue with a statement of reassurance. For example, "I feel that it is very important to meet deadlines, satisfy the customer. I have to really make myself be patient, diplomatic, firm, when I see that this is not happening." Honestly describe an obvious weakness, then describe factors that make up for it. Remember, when you raise a doubt, explain it immediately. If you cannot think of any weaknesses, tell the employer this.

6. What are your long-range goals?

Purpose: To discover whether you will stay with the company. To find out what it is that you really want. To identify your career plans. To see if your goals fit with those of the company.

Suggestions: Keep your answer work-related, with this company in mind. State your interest in and commitment to staying and growing in this field of work.

7. Can you work under pressure or

tight deadlines?

Purpose: To find out your attitude towards pressure and your ability to deal with it.

Suggestions: Give job-related examples from your past experience showing your ability to cope with pressure. Describe what you consider normal pressures for the type of work you would be doing. If you cannot cope with pressure, first state some positive points (ie. your thoroughness, cheerful attitude, punctuality). Add that you prefer knowing deadlines in advance and work better in that situation.

8. What would you do in "this" situation.

Purpose: To assess your ability to handle unexpected questions and to judge and handle real-life situations. To learn of experiences you have had. To discover if you are aware of policy and rules.

Suggestions: Mention your commitment to follow company guidelines and to consult your supervisor where appropriate. Describe a time when you successfully dealt with such a situation. Describe related situations, skills and experience.

INTERVIEW FOLLOW-UP

As soon as possible after the interview, take a few minutes to reflect on your experience. If you believe that you did not do well in one particular area, you may want to consider what went wrong and how you could improve the next time around.

You should also follow up with a phone call or letter. Thank the interviewer for meeting with you and inform-

HELP FROM HUMAN RESOURCES

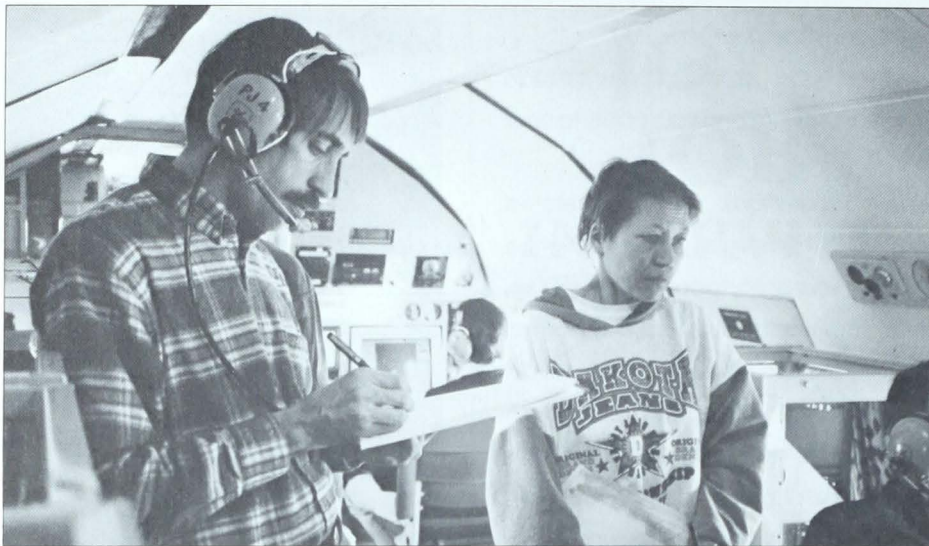
HUMAN RESOURCES OFFERS LOTS OF SUPPORT FOR SURPLUS EMPLOYEES:

- SERVICES OF A WORK FORCE ADJUSTMENT ADVISOR;
- A BRIEFING ON THE WORK FORCE ADJUSTMENT DIRECTIVE;
- CAREER COUNSELLING;
- INFORMATION ON THE ENVIRONMENT CANADA/PUBLIC SERVICE COMMISSION CLEARANCE SYSTEMS;
- ASSISTANCE WITH RESUMES, JOB SEARCH STRATEGIES AND INTERVIEWS;
- BROCHURES, BOOKS, VIDEOS AND A SPECIALIZED LIBRARY;
- COUNSELLING ON PENSION, SEVERANCE PAY, ANNUAL LEAVE, REGISTERED RETIREMENT SAVINGS PLANS, EARLY RETIREMENT INCENTIVE AND EARLY DEPARTURE INCENTIVE;
- THE EMPLOYEE ASSISTANCE PROGRAM, SHORT-TERM, CONFIDENTIAL PROFESSIONAL COUNSELLING FOR EMPLOYEES HAVING DIFFICULTY COPING WITH CHANGES IN THEIR LIVES. IN ONTARIO, CALL 1-800-387-4765 (ENGLISH) OR 1-800-361-5676 (FRENCH); IN MANITOBA, 1-800-282-8069; ELSEWHERE, 1-800-268-7708.

ing you about the job, and restate your interest, skills and experience.

Finding the right job is not an easy task. Don't be discouraged if you don't get a job after your first few interviews. You must persevere. Look at each interview as good experience and concentrate your efforts on the next one. Eventually, you'll succeed: all it takes is for just one employer to say, "You're hired!"





Atmospheric Environment researchers Alexi Korolev and Anna Glazer take notes during a flight into freezing drizzle. This study aims for better forecasts and safer aviation.

Flights study freezing drizzle and airplane icing

"American Eagle Flight 4184 had been holding (aloft) for 32 minutes in a chilly drizzle last October when air traffic controllers in Chicago cleared the pilots to make a routine descent from 10,000 to 8,000 feet....A dangerous ridge of ice had built up on the wings, and in a fraction of a second...the pilots lost control of the ATR-72 turbo prop....All 68 people aboard were killed when the plane slammed into a soybean field near Roselawn, Indiana." (The New York Times, February 26, 1995)

Ice is a swift, silent killer for aircraft. Yet the formation of freezing drizzle and its effects on aircraft aerodynamics are not completely understood. To learn more, intrepid federal researchers deliberately flew not once, but 11 times, into regions of freezing drizzle near St. John's in March.

The National Research Council's Convair 580 turboprop was fitted with sensors to measure the size of atmospheric water droplets and ice particles, to detect ice build-up on the aircraft, and to monitor its response to icing.

"This study is the first in the world to document the microphysical characteristics of freezing precipitation, from the aircraft perspective," said George Isaac,

Chief of Cloud Physics Research for the Atmospheric Environment Service in Downsview. "It should lead to more accurate forecasts, and safer aviation."

One assumption about freezing precipitation—that it only forms when ice crystals fall through a warm layer, melt and then supercool in a cold layer below—proved wrong. Freezing precipitation can form directly from cloud droplets without the presence of ice crystals.

"Numerical model forecasts do not account for development of this non-classical freezing precipitation, which amounts to more than 50 per cent of reported freezing precipitation events on the east coast," said George.

New met journal on Internet

It's new, electronic and environmentally friendly. It's *Canadian Meteorology*, the quarterly scientific journal by and for Environment Canada employees working in applied and operational meteorology.

The first issue appeared on the Internet in January and the second in April. Topics have included commercialization, a rare winter waterspout sighting, public weather services of New Zealand and Singapore, and a very insightful look at the future role of humans in weather forecasting.

Letters, photographs, weather event of the issue, book reviews, upcoming conferences and "Who's Who in Canadian Meteorology" are some of the regular features planned.

"Reactions are very good," said journal coordinator Bernard Miville, a meteorologist with Ice Services in Ottawa. "Help would be really appreciated in finding articles to publish and in the writing of some special articles such as the weather event and letters," he added.

You can send articles, comments or suggestions to Bernard at 373 Sussex Drive, Block E, third floor, Ottawa, Ontario K1A 0H3. Fax (613) 241-8483. Phone (613) 996-1550. E-mail mivilleb@ice.ncr.doe.ca.

The URL for *Canadian Meteorology's* home page is <http://www.dow.on.doe.ca/ice/canmet/canmet.html>. Watch for the next edition!



America's Cup

AES helps put wind in Australia's sails

Australian yachtsmen challenged for the prestigious America's Cup this spring with help from Environment Canada meteorology.

The finals of the race got under way in the Pacific Ocean near San Diego May 6. The United States was the defending champion, having won on every occasion except 1983.

To determine the Americans' challenger, seven teams competed. In the challengers' finals were Australia and New Zealand.

New Zealand had a superior boat but Australia had superior information about wind speeds and directions, thanks to Canadian computer models of the atmosphere.

Daily via Internet, the Canadian Meteorological Centre sent data from the regional forecast model. The Australian team's meteorologists then used this data to drive MC2, a precise, computerized atmospheric model, to produce high-resolution wind forecasts for the race course.

MC2 is a state-of-the-art meso-scale model made available to the research community by RPN (Recherche en prévision numérique), a division



Australia's yacht

of Meteorological Research Branch.

When RPN began preparing for the race in February, two main difficulties had to be overcome: the remote installation via Internet and proper running of MC2 in Australia, and the timely transfer of daily data for input into MC2.

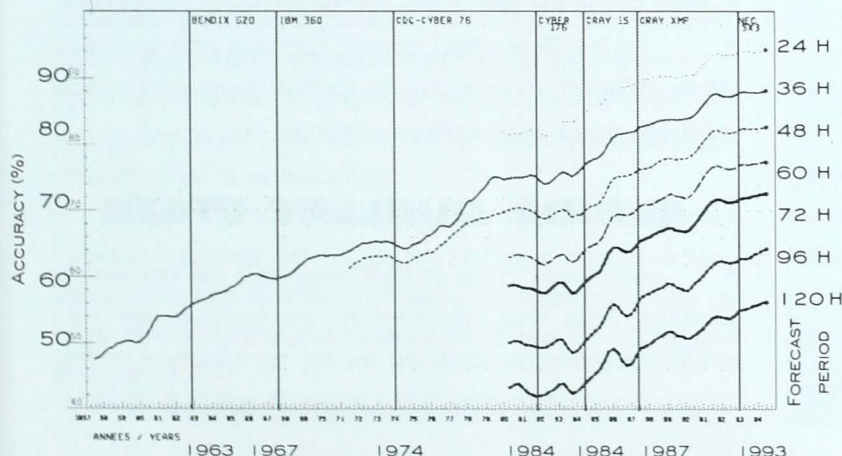
These challenges were solved by a team consisting of Michel Desgagné, MC2's model librarian and meteorologist, Robert Benoit, MC2 project leader, Gérard Croteau, a meteorologist in CMC's Operations Branch, and Russell Morison of the

University of New South Wales, Australia.

The MC2 forecasts were used to answer two questions. First, *how would the low-level wind field vary during the race?* This information is vital in sail selection: minimizing the range of sail types minimizes the weight of the boat. And second, *when and what would be the first wind shift after the race starts?* If the boats are similar in speed, the boat that gets the first wind shift will gain the upper hand.

While New Zealand's stronger boat muscled its way into the finals against the Americans (and eventually won the Cup), the Australians dominated sections of the race where skill with winds was the determining factor.

The Australian forecasters praised RPN and CMC's scientific and technical support and judged MC2 better than any other model, particularly for fine-scale features such as eddies. The model's performance statistics will be published in the *Bulletin of the American Meteorological Society*. This free, unbiased evaluation and international recognition are invaluable prizes for MC2 from the America's Cup.



Canadian forecast models: world-class accuracy

THE OPERATIONAL FORECAST MODELS OF THE CANADIAN METEOROLOGICAL CENTRE RANK AMONG THE TOP THREE IN THE WORLD. THE GRAPH SHOWS HOW THE ACCURACY OF FORECAST WEATHER MAPS FROM CANADIAN COMPUTER MODELS HAS IMPROVED OVER THE LAST 35 YEARS, AS MODELS BECAME MORE SOPHISTICATED DUE TO INCREASED SCIENTIFIC KNOWLEDGE AND COMPUTER POWER. TODAY'S 60-HOUR MAPS ARE AS ACCURATE AS THE 36-HOUR MAPS WERE IN THE MID-1980S.



Achievements and milestones

CITATIONS OF EXCELLENCE

Awarded to:

- Maria Bozickovic, "in recognition of the high level of performance and dedication demonstrated in the provision of circulation and interlibrary loan services" in Downsview.
- Jean-François Gagnon and Louis Lefebvre "for their remarkable and exceptional contribution to multimedia productions and a temporary exhibit about the St. Lawrence River at the Biosphere in Montreal."
- Pierre Tourigny and Nina Fernandez in Downsview, "in recognition of the high level of performance over an extended period of time demonstrated in the preparation of Part III of the Main Estimates submission for the Atmospheric Environment Service, and in the leadership provided to all of Environment Canada on the form and content of future submissions."
- Robin Barker, Claire Cosentino, Ada Dabek, Hamida Datto, Lisa Davis, Maryanne Davis, Ron De Zeeuw, Sharyn Fearon, Dan Jefferson, Walter Pampano, Carol Perry, Rob Pigozzo, Stephen Tippins and Willy Walker, for "dedication, teamwork and high level of performance demonstrated in the design and implementation of service standards for the Finance and Administration Branch, Burlington Operations".

These employees of the Canadian Meteorological Centre in Dorval also received Citations of Excellence:

- Jacques Lavigne, for his work on Environmental Citizenship in Quebec.
- Richard Hogue, for putting into operation the new com-

LONG SERVICE AWARDS

35 years: Jacques Deslauriers, Claude Payette, Art Russell. **25 years:** Dwight Anderson, Ian Astle, Noble Bowes, Peter Brooksbank, Richard Bruneau, Normand Brunet, John Bullas, Cécilien Charette, Clément Chouinard, Edgar Cormier, Martha Danks, Gilles Desautels, Claude Fortier, R.D. Holdham, Al Kellie, Max Krol, Lionel Lane, Jean-Claude Leblanc, Art Leganchuk, Gaston Lemieux, Roger Léonard, Ed Loder, Tsuyoshi Maruoka, Brian O'Donnell, Karl Rasl, Andrej Saulesleja, Shin-Young Shiau, Brenda Smith, Richard Stockley, Gary Teeter, Eileen Veinot, Joan Watts.



Raymond Sorokowsky (right), who worked at the King Radar north of Toronto, accepts his retirement certificate from Director General Phil Merilees (centre) and Assistant Deputy Minister Gordon McBean.

puterized three-dimensional analysis of the atmosphere.

- Gilles Babin and Denis Vigneux, for training meteorologists on SCRIBE and liaising between the developers and users.
- Michel Flibotte, for liaison between software developers and users and the smooth introduction of Edigraf software.
- Charles Anderson, for his diligent quality control of North and Central American surface observations for the World Meteorological Organization.
- Gary Toth, for his dedicated work with the International Training Desks and evaluation of operational and parallel runs.
- Normand Brunet, André Méthot, Alain Patoine, Gérard Pellerin and Réal Sarrazin of the Numerical Weather Prediction Division, for developing a 50-km resolution for the regional finite element model.
- Réal d'Amours and René Servranckx for their contributions to the success of the European Tracer Experiment.
- Louise Desjardins, Manon Lacasse and Marcelle White of CMC's Finance Division, for their dedicated service following major organizational change.

ALCIDE OUELLET PRIZE

- Jean-Guy Cantin of CMC received the Prix Alcide Ouellet from the *Association professionnelle des météorologistes du Québec* for his contribution to the progress and promotion of the meteorological profession.



Achievements and milestones

RETIREMENTS

Ken Abel, Dwight Anderson, Fred Androschuk, Tom Barluk, George Beauchamp, Lou Berthelot, James Bobby, Glen Bond, Noble Bowes, Francis Bowkett, Don Bowlby, Otto Braun, Peter Brooksbank, Dave Burnett, Don Champ, Jacques Charron, Tom Chivers, Ray Clyde, Richard Code, Brian Crowe, Tom Dame, Samir Das, Doug Dixon, Edward Dobrzanski, Robert Douglas, John Dublin, Terence Dwyer, Lorne Enns, Evonna Evanoff-Mathis, Bruce Findlay, David Fyffe, Louis Gagnon, Raymond Gagnon, Art Gilmore, Gerald Gordanier, Gwyneth Graham, Mark Hacksley, Ian Hamilton, Cliff Hannah, Lionel Haughn, Red Henderson, Bill Henwood, Howard Herscovitch, Edwin Holtzman, Ralph Horne, David Irwin, Robert Jamieson, Harry Janes, Ken Jones, Madge Jones, Mitch Kallaur, John Keefe, Nicholas Koshyk, Gerard Langevin, Raymond Larocque, Boyd Laventure, Don Layton, Jean-Luc Leblanc, Richard Lee,



Howard Herscovitch receives his retirement plaque while his wife, Diana Herscovitch, looks on. Howard, a meteorologist who developed software for climate archives, had worked for AES 31 years.

William Lee, Fred Luciow, George MacMillan, Tsuyoshi Maruoka, Ralph Martinson, Jim McLeod, Brent McVean, Neil Meadows, Tom Medlicott, Brian Moore, John Munroe, Kenneth Oikawa, Marvin Olson, Kaz Pacholik, William Palmer, Neil Parker, Marv Pierce, Matti Pindam, Jim Ploc, Richard Poersch, Arnold Pohl, William Prent, Klaus Rackow, Don Rehberg, Edmond Roete, Larry Romaniuk, Doug Rosler, Art Russell, Ivor Schledewitz, Helmut Schneider, Joan Selig, Ed Semchuk, Andy Serna, Eleanor Sheehy, Richard Shewchuk, Shin-Young Shiau, Donald Simard,

Harold Skidmore, Dave Smith, Rod Smith, Raymond Sorokowsky, Jim Spears, Eric Stanzeleit, Christine Stuart, Reg Sweet, Gilles Tardif, Gary Teeter, Gaston Tessier, Grant Thompson, Lloyd Veinot, Roy Voak, Toni Wagner, Mike Webb, Larry Winstone, Gerry Wolfe, Stan Woronko, Art Worth, Albert Wright, Ed Yaholkoskie, Mike Yaremchuk.

IN MEMORIAM

Roger Van Cauwenberghe was a leader and visionary with a broad spectrum of capabilities and knowledge. He joined the Atmospheric Environment Service on May 3, 1971, and developed the advanced concepts of automatic weather observing systems, along with many other highly technical projects. He led the Test and Evaluation Section, creating unique solutions and software for a complex data acquisition platform that evaluated meteorological and hydrological sensors. He also made major contributions to the challenging development of ice accretion, visibility and present weather sensors, and freely provided technical expertise to manufacturers.

When the World Meteorological Organization invited Canada to co-host with France the First Present Weather Sensors/Systems Intercomparison, Roger was the obvious choice as project leader responsible for all experiments at the AES test site in St. John's.

Roger's high standards and faith in others went with him

on his sailboat, *Whisper*. He was once introduced as "a gentle man, and then a sailor". A gentleman is how he will be remembered by all of his friends, on and off the water.

Mike Hall and Thomas Stapf

Don Scott joined the Department of Transport's Meteorological Branch in 1953 and was posted as a meteorologist to Halifax, Ottawa, Trenton and Zweibrücken, Germany. In 1960, he became officer-in-charge of the London Weather Office, and gave weather broadcasts on local television and radio until he moved to Toronto in 1975 to join the newly formed Atmospheric Environment Service. Attached to Public Weather Services at headquarters, he recruited university science graduates as meteorologists. In 1984, he was seconded to the Communications Directorate until his retirement in March 1991. Don is survived by his wife Margo and his sisters Eleanor and Thelma. He is greatly missed by all for his unfailing good humour and joie de vivre.

Ed Elliotson



Forecasts boost solar car racers

In competing in Sunrayce 95, an international solar-powered car race from Indianapolis to Denver June 20 to 29, engineering students from Queen's University in Kingston, Ontario had a carefully guarded advantage: full weather support from the Atmospheric Environment Program.

The weather team consisted of key strategist Étienne Grégoire from the Ottawa Regional Centre and Andrew Toms of Queen's. To keep their "cover" from the 37 competing teams, the duo began each day at 4 a.m. and maintained a weather vigil until midnight. Their routine also meant parking their weather van in the most unlikely locations—including the middle of a corn field in Indiana!

As for equipment, the Department of National Defence lent a mobile work station, while TelSat provided a satellite dish and link-up, with satellite imagery provided by Woodhouse Communication. In Terre Haute, Indiana, the command centre even attracted the attention of a U.S. military helicopter.

Back at home, the Ottawa Regional Centre faxed solar flux data gen-

erated by the Canadian Meteorological Centre's Global Numerical Weather Model to the van each day. The weather team relied on the satellite dish for observations, forecasts, charts, radar composites and upper air data. This state-of-the-art operations centre and the on-site expertise helped Queen's gain a competitive edge in their racing strategies and in the solar car's performance.

Right from the start, Queen's captured media and peer recognition by obtaining the pole position during the first qualifying sessions. It wasn't until the final day of qualifying that the Massachusetts Institute of Technology and Minnesota State University were able to surpass the mark set by the Queen's team.

This solar car race was carefully regulated, with Sunrayce officials monitoring each team and issuing penalties for such infractions as replacing a bat-

ttery or breaking highway regulations, including speeding (most cars were capable of velocities above the 55 mile-per-hour speed limit).

Using the solar array, cars were allowed to charge their batteries during the race and after each leg until sunset. The technology used on solar cars is highly advanced and the budget of each



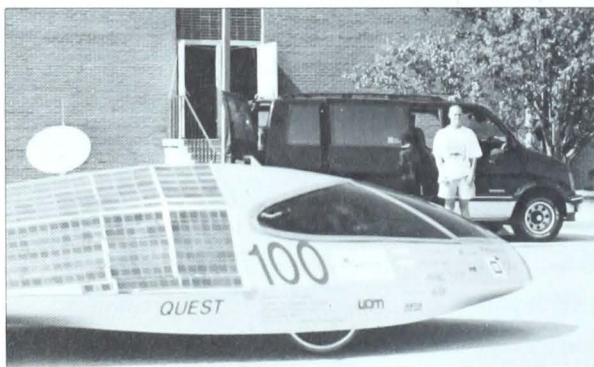
Étienne Grégoire prepares a roadside weather forecast to give Queen's University an edge in Sunrayce 95.

team varied from \$30,000 to \$1.5 million. An electric motor alone can cost as much as \$40,000.

With so much at stake, Queen's strongly believed that accurate special weather services were the deciding factor for the winning team in Sunrayce 93. Acting on that belief, Queen's University had approached the Ottawa Regional Centre in March to arrange on-site weather support for Sunrayce 95.

During each leg of Sunrayce 95, Queen's consistently placed in the top ranks, never far behind the leaders. The weather was Queen's key to success. On days with variable weather, Queen's made up valuable ground by incorporating the most up-to-date weather information into their racing strategy.

This approach worked well. Twice opposing teams raced too hard, wondering why Queen's wasn't, and were left behind either charging on route or without power reserve for the next race day. On Day 4, many teams raced hard, expecting to charge their batteries under sunny breaks, which were present early in the day but quickly disappeared



Queen's racing car passes the weather van and Andrew Toms. Note the car's rooftop solar array for collecting sun power.



by noon. By the end of Day 4, these teams had no power to spare and were unable to complete the next day of racing, which also started off cloudy.

Participants in Sunrayce 95 logged more than 1800 km through five states: Indiana, Illinois, Missouri, Kansas and Colorado.

In Goodland, Kansas, the weather team stopped in at the NOAA Weather Center. "The staff was terrific," said Étienne. "They allowed us to use their equipment and have an early look at the model output before the racing began on Day 8. That day, we raced with confidence."

Queen's started the last day of racing, Day 9, in fifth place. The team was confident it would retain this position and possibly move up to fourth. On this rainy and foggy day (as predicted), the strategy was to go slowly and conserve enough energy to finish.

"What was not considered in our strategy, however, was the possibility that Sunrayce officials would stop the race three hours early due to bad weather," said Étienne. "When they did, the team was nine miles short of the finish line and officials imposed penalties for each mile not completed."

Although penalties dropped the team to sixth (of 38), and the winner was MIT, Sunrayce officials recognized Queen's University by presenting them with a teamwork award.

At the end of the race, Étienne and Andrew told opposing teams what they had been doing in the unmarked blue Safari van. "Some teams had weather information but all were amazed at what Queen's had done to secure the

RADARSAT blasts off

ICE SERVICES EMPLOYEES ARE KEENLY ANTICIPATING THE LAUNCH OF RADARSAT, WHICH WILL BLAST OFF ABOARD A NASA DELTA ROCKET FROM WESTERN RANGE, CALIFORNIA SEPTEMBER 20.

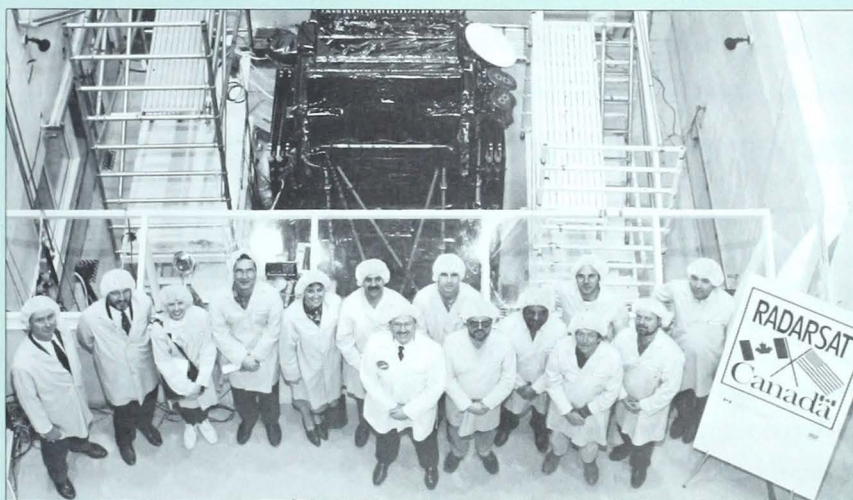
BEGINNING IN JANUARY, CANADA'S FIRST EARTH OBSERVATION SATELLITE WILL PROVIDE DAILY IMAGES OF THE VAST ICE FIELDS ALONG THIS COUNTRY'S COASTS AND EVEN THE FAR NORTH, WHICH NOW GETS INFREQUENT COVERAGE. THIS ICE INFORMATION IS INVALUABLE TO THE SAFETY AND EFFICIENCY OF THE CANADIAN COAST GUARD'S ICEBREAKER OPERATIONS, NATIONAL AND INTERNATIONAL SHIPPING, OFFSHORE OIL EXPLORATION, FISHERMEN AND MARINE SCIENTISTS.

THANKS TO ITS ADVANCED SYNTHETIC APERTURE RADAR, RADARSAT CAN MONITOR CONDITIONS ON EARTH AT NIGHT OR THROUGH CLOUD COVER. RADARSAT'S RESOLUTION WILL BE COMPARABLE TO AIRCRAFT COVERAGE (WHICH IS BEING PHASED OUT) BUT WILL COST \$24 MILLION LESS OVER FIVE YEARS.

ABLE TO DETECT EVEN THE WAKES OF SHIPS, RADARSAT WILL ALSO MONITOR FISHING, DOCUMENT GLOBAL CHANGES IN THE ENVIRONMENT AND SUPPORT TIMELY DECISION-MAKING IN CASES OF FLOODS, OIL SPILLS, TORNADOES OR OTHER DISASTERS.

ENVIRONMENT CANADA EMPLOYEES CAN WATCH A LIVE SATELLITE BROADCAST OF THE LAUNCH AT THE ICE CENTRE IN OTTAWA.

FOR MORE INFORMATION, CONTACT BRUCE RAMSAY AT (613) 996-4671.



Environment Canada employees pose in front of RADARSAT in the vibration test area of the David Florida Laboratories of the Canadian Space Agency in Ottawa.

COMMUNICATIONS RESEARCH CENTRE

best possible information and expertise available," said Étienne. "From the feedback we received, it certainly seems like solar flux forecasts and on-site support will be in high demand by top teams in Sunrayce 97."

In mid-August, Queen's University will display its Sunrayce car at the Ot-

tawa Regional Centre. Representatives from Queen's and the Atmospheric Environment Program will be there to answer questions about Sunrayce 95 and future solar car events.

Watch for coverage of Sunrayce 95 and the Queen's team on the Discovery Channel and in *Sports Illustrated*.



Highland fling

Merthyr Tydfil, Leicester and, yes, even Yorkshire were just a few of the British place names that Environment Canada's Ron Huibers had to learn to pronounce correctly while on assignment with a private forecast service in Scotland. "It caused some humour for some local staff the way I mispronounced names," he said. "The staff was very amiable, and it was kind of neat exchanging Canadian and British terminology."

From December to March, Ron, the officer-in-charge of the Toronto Weather Office, and Craig Maclaren, a forecaster with the Arctic Weather Centre in Edmonton, worked for Oceanroutes in Aberdeen. (This company offers a forecast service and

routes international shipping.)

Besides places and the topographical features that can affect the weather, the Canadians rushed to learn the new forecast products, meteorological guidance, and computer and communications systems. One was Forecast Production Assistant, the computer system that Environment Canada sold to Oceanroutes.

In the British winter, snow is about as rare as in Vancouver, except of course in the Highlands. However, with constant high humidity and temperatures hovering back and forth across the freezing mark, black ice and frost are more common concerns than in Canada.

Craig, who produced general

Two Environment Canada meteorologists took a turn at private-sector forecasting in Scotland.

forecasts for the BBC, Grampian TV and other media to disseminate, was surprised by the speed and frequency of the almost daily storms.

Ron and Craig enjoyed the challenge and the chance to experience life in the private sector.

"It opened my eyes to all the various clients who are dependant upon accurate weather forecasts," said Ron, who forecasted road ice. "I saw how important each of the clients are to the well-being of not only the forecasters but the company as well."

For more information about private-sector assignments, check with your manager or Human Resources.

IN MEMORIAM

Gordon McKay, a meteorologist with the Atmospheric Environment Service from 1943 until his retirement in 1984, died suddenly at his home in Thornhill, Ontario on April 14, 1995.

A graduate of Manitoba and McGill universities, Gordon served as a meteorological officer with the wartime Royal Canadian Air Force and then as a forecaster at Montreal, Gander and Winnipeg. In 1959, he was posted to the Regina offices of the Prairie Farm Rehabilitation Administration and, in 1966, to the Toronto meteorological headquarters.

As director of the Climatological Applications Branch, he became very



interested in the socio-economic aspects of climate change and contributed a great deal to the early literature on the subject. Gordon served on many national committees and acted as director general of the Canadian Climate Centre before his retirement. He was president of the Canadian Meteorological and

Oceanographic Society in 1972-1973 and, in 1987, received the Patterson Medal, Canada's premier award for distinguished service to meteorology.

Abroad, Gordon was one of Canada's best meteorological ambassadors. Fluently bilingual, he participated in many activities of the World Meteorological Organization, including Commission for Climatology sessions in 1973, 1976 and 1982. In the United States, he was a fellow of the American Meteorological Society and advised the National Centre for Atmospheric Research, government agencies and universities.

He is survived by his wife, Sandy, three daughters, a son and six grandchildren.

Morley Thomas

