c.m.o.s.
NEWSLETTER / NOUVELLES
s.c.m.o.

OCTOBER/OCTOBRE 1983 VOL. 11 NO. 5

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! LAST CALL !

CMOS-SCMO

— LOGO —

?

DERNIERE CHANCE

A Few Words About Our President

Dr. René D. Ramseier was born in Switzerland where he obtained a diploma in mechanical engineering and worked as a design engineer. In 1956 he secured employment with an engineering and manufacturing company in the United States and within a year saw active military service in the U.S. Army. Thereafter, he returned to private industry and, in 1958, became research assistant at Northwestern University in Evanston, Illinois. His interest in research during the next ten year period centered on ice physics and ice research with the U.S. Army Cold Regions Research and Engineering Laboratory in Hanover, N.H.. His coincident studies included enrollment at the Oak Ridge Institute of Nuclear Studies in Tennessee and in 1967 he recived a master's degree in physics at Dartmouth College. His research activities carried him to Greenland and the Antarctic and won him commendation from the Department of the Army for outstanding performance of duties, a U.S. Antarctic Medal in honor of Scientific Research (1965) and in 1967, the U.S. Board of Geographic Names gave his name to a glacier in the Brittania Range of the Trans Antarctic Mountains in honor of research carried out from 1960 to 1962.

Continued physics research brought him to the University of Birmingham, England in 1967 and to Laval University, Quebec in 1968. In 1969 he joined the Inland Waters Branch of the Department of Energy, Mines and Resources to conduct applied research in fields of river and lake ice formation and of oil pollution. He soon became deeply involved in remote sensing and held posts with the Department of Environment

as Head of the Floating Ice Section of Inland Waters, as Chief of the Ocean Technology Division of Ocean and Aquatic Sciences. In 1976 as Staff Scientist he was seconded to the Jet Propulsion Laboratory in Pasadina, California. During this time he was primarily concerned with research and development of remote sensing as applied to environmental monitoring - his particular area of expertise being microwave radiometery.

René received his doctorate of Applied Sciences at Université Laval, Quebec in 1976 and subsequently through involvement with remote sensing and satellite surveillance programs has gained the reputation of being a leading expert in this field.

He joined AES in 1979 as Senior Research Scientist of Ice Research and Development, is an active member of six professional societies and has recently become Honorary Adjunct Professor at Carleton University in Ottawa and also at York University. Since 1960 he has authored or coauthored more than 100 publications.

Dr. Ramseier is fluently bilingual, is married and has two teenage children. He enjoys boating, sailing and good food.

This year Dr. Ramseier has been chosen as tour speaker for C.M.O.S. and details of his schedule are as follows:

CMOS SPEAKER TOUR

TITLE OF PRESENTATION: Passive Microwave Remote Sensing of Sea Ice from Research to Operations.

Télédétection de la glace de mer par micro-ondes passive de la recherche aux opérations.

ITINERARY

NOV. 7/83	Rimouski, Québec
Place:	Centre Océanologique de Rimouski
Time:	3:00 p.m.
NOV. 8/83:	Quebec City, Quebec
Place:	Laval University
Time:	8:00 p.m.
NOV. 9/83	Montreal (Dorval), Quebec
Place:	Bureau de Prévision pour le Québec
Time:	8:00 p.m.
NOV. 14/83	Toronto, Ontario
Place:	York University, Petrie Bldg., room 202
Time:	4:00 p.m.
NOV. 15/83	AES Headquarters, Downsview
Time:	Seminar 2:00 p.m.
NOV. 22/83	Halifax, Nova Scotia
Place:	Dalhousie University
Time:	3:30 p.m.
NOV. 23/83	Fredericton, New Brunswick
Place:	University of New Brunswick
Time:	2:30 p.m.
NOV. 24/83	St. John's, Newfoundland
Place:	Memorial University
Time:	8:00 p.m.
NOV. 28/83	Winnipeg, Manitoba
Place:	Assiniboine Golf Club
Time:	8:00 p.m.
NOV. 28/83	AES Central Region, Winnipeg
Place:	266 Graham Ave. 9th. fl.
Time:	not confirmed
NOV. 29/83	Saskatoon, Saskatchewan
Place:	University of Saskatchewan
Time:	2:30 p.m.
NOV. 30/83	Edmonton, Alberta
Place:	AES Argyle Centre
Time:	8:00 p.m.
DEC. 1/83	Calgary, Alberta
Place:	not confirmed
Time:	
DEC. 6/83	Sydney, British Columbia
Place:	Institute of Ocean Science
Time:	1:30 p.m.
DEC. 7/83	Vancouver, British Columbia
Place:	University of British Columbia
Time:	8:00 p.m.

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EDITORIAL POLICY

The CMOS NEWSLETTER is the principal medium by which Society members may exchange items of CMOS news and interest. It is a bi-monthly publication mailed to all members and, except for advertising revenue, is funded through Society membership fees. Articles are accepted in either official language, and responsibility for content rests with their respective authors. Although views expressed are not necessarily those of CMOS, the editorial staff shall endeavour to maintain a level of integrity deserving of the Society.

Mailing Address

Dave Mudry
Ice Climatology
Atmospheric Environment Service
Third Floor
365 Laurier Avenue West
Ottawa, Ontario
K1A 0H3

Editorial Board

Editor: André Bolduc

Associate Editors:
Dave Mudry
Micheline Gilbert

LA POLITIQUE EDITORIALE

Le BULLETIN DE NOUVELLES de la SCMO est la voie principale par laquelle ses membres peuvent échanger des articles d'information et d'intérêt. C'est une publication bimestrielle qui est expédiée à tous les membres et qui, sauf pour les revenus de la publicité, est financés par les frais d'adhésion. Les articles sont acceptés dans l'une ou l'autre des langues officielles et le contenu demeure la responsabilité de l'auteur. Même si les idées exprimées ne sont pas nécessairement celles de la SCMO, la rédaction tentera de maintenir un niveau d'intégrité digne de la société.

Adresse postale

Dave Mudry
Climatologie des glaces
Service de l'environnement atmosphérique
3e étage
365, avenue Laurier ouest
Ottawa (Ontario)
K1A 0H3

Conseil de rédaction

Rédacteur en chef: André Bolduc

Rédacteurs adjoints:
Dave Mudry
Micheline Gilbert

HELP WANTED

Two volunteers are required to assist the Publications Business Manager in managing the numerous Society Publications. A National Advertising Coordinator is required to work with the local centres to solicit advertising for all Journals. In addition, a Promotions manager is required to promote all of our Publications. The emphasis in both these positions will be on Chinook for at least the first year.

It would be of benefit, but not essential, that these individuals be in the Toronto area.

For further information, please contact Carr McLeod at (416) 667-4848.

SCIENTIFIC SEMINARS, MEETINGS, WORKSHOPS

From time to time representatives of our respective meteorological and oceanographic government agencies attend scientific "state-of-the-art" sessions that are virtually unknown to the general membership. Since the C.M.O.S. Newsletter offers a medium through which such scientific information can be communicated, it is urged that it be used. If you have been to a scientific seminar, meeting or workshop that may be of interest to others, let's hear about it.

NEWS FROM CMOS HEADQUARTERS

Availability of Back Issues

Storage arrangements for back issues of Atmosphere-Ocean and the Climatological Bulletin have been completed and we are now able to meet requests for most of them. The following gives a list of back issues not available or in very short supply at CMOS Headquarters. Members having these publications and willing to part with them are invited to send them to CMOS Headquarters.

Atmosphere-Ocean			Climatological Bulletin	
Year	Volume	Number	Year	Number
1963-6	1-4	All numbers	1967	2
1967	5	3 and Congress I	1968	3 & 4
1968	6	1-4 and Congress II	1978	23
1969	7	1-4	1979	26
1970	8	1-4	1982	31
1972	10	1		
1974	12	Congress VIII		

CMOS LOGO Ballot

Some 120 ballot forms have so far been received, i.e., about 12% of our total membership. Please send your ballot soon (deadline 1 Dec. 1983!) and don't forget to print your name clearly on the bottom of the form. Please note that the correct address of CMOS H.Q. is Suite 805 and not 801 as erroneously stated in the August Newsletter. Although our friends in Suite 801 are passing all replies received to us it is better to relieve them of that chore and use the correct address.

Photos

In response to our call for black/white photos, some very nice ones have been received, but still too few for a CMOS calendar. So please, continue clicking and sending us photos (glossy paper, preferably 20 x 25cm / 8 x 10 inches).

Oceanographer-Occupational Information

A four-page brochure on the nature of work of oceanographers, their working conditions, employment outlook, necessary qualifications, etc. has recently been received. It is a revision of a previous brochure, carried out by Dr. Dobson (Bedford Institute), in a series of guidance material prepared by the University of Toronto. (A similar brochure on meteorologists is presently under review by the CMOS Scientific Committee.) Anyone wishing to receive a copy of the oceanographer brochure is invited to write or phone CMOS H.Q. (Tel.(613) 237-3392).

CANADIAN METEOROLOGICAL AND OCEANOGRAPHIC SOCIETY

CMOS Publications Update

Publications Management Committee

Following decisions at the Banff Congress, the terms of reference of last year's Publications Committee were narrowed to deal with only financial and business aspects of the various publications. Carr McLeod in his new role of Business Manager for CMOS Publications also assumed chairmanship of this committee. Three meetings have been held since Congress. Under discussion have been the impact of the new voluntary subscription policy for 1984 and the renewal of contracts for printing in 1984.

Atmosphere-Ocean

Due to a significant error by University of Toronto Press (UTP), the distribution of Volume 21(3) has been delayed by about a month. We anticipate meeting on November 14. UTP has admitted financial liability for the delay. Issue 21(4) is well underway and articles have been received for 22(1).

Climatological Bulletin

Issue 17(2) was mailed to subscribers on October 14. As a result of an Executive decision, copies were also mailed to all CMOS members. This was done to encourage members to subscribe to the Bulletin beginning in 1984. These latter copies were however mailed book rate to save money and may not arrive until late November. The covers used for this issue still have the "iceberg" logo. This was simply a cost saving measure to use up existing covers and will not occur again.

Chinook

Our "enfant terrible" continues to cause the Society dismay. In October, Mike Newark handed over all his files and relinquished financial interest in Chinook. There is a considerable back-log of correspondence to be answered and the membership list must be transferred to the CAP office. In addition submissions are low and advertising is wanning. The last issue published was a double issue for Fall/Winter 1982/83. A Spring/Summer 1983 double issue is planned but will not likely be out this calendar year. Only continued faith in the magazine's potential can save Chinook. Every effort will be made to ensure that current subscribers receive the number of issues to which they are entitled. Subsequent Newsletters will keep the membership informed.

Banff Congress Proceedings

As promised, the Society will be publishing proceedings (extended abstracts) from a number of papers given at the 17th Congress in Banff. In all, 26 papers are presented for a total volume size of approximately 156 pages. The volume will be printed in the next two months and distributed to all Banff Congress registrants. Additional copies will be available for purchase at a price to be finalized but in the order of $10.

PARTICIPATION IN CMOS COMMITTEES SPECIAL INTEREST GROUPS, ETC.

Much of the work done in CMOS is carried out by its committees and special interest groups which include the following:

COMMITTEES	SPECIAL INTEREST GROUPS
Awards	Air Pollution
Editorial (publications)	Agriculture and
Educational	Forestry
Professionalism	Hydrology
Public Information	Operational
	Meteorology

To ensure effective and up-to-date input into the work of these committees and groups, the active participation of CMOS members is essential. All members interested in participating in this work (or any other work of CMOS, e.g. Executive Committee, Newsletter) are invited to send their names togeter with area/areas of interest to the CMOS office. The names will then be transmitted to the various chairmen concerned.

Highlights from Executive No. 3

The National Executive held its third meeting on September 13 in the Ice Central Board Room in Ottawa. Some of the highlights of that meeting included the following decisions and discussions:

1. The LAC's LAC - (Local Arrangements Committee) report on the 1983 Congress was reviewed. Five hundred copies of the Congress proceedings will be printed for distribution to Congress attendees. Copies will also be sold to interested CMOS members. Watch the Newsletter for further details.

2. Mr. J.P. Cantin was appointed as Chairman of the LAC for the 1985 Congress in Montreal.

3. It was agreed that one of the Councillor's-at-Large should prepare a discussion paper on options for improving the quality of papers at CMOS Congresses.

4. Dr. Ken Sato was appointed as the Chairman of the Professionalism Committee.

5. Dr. Huntley was approved as the Chairman of the Awards Committee.

6. Future editions of the Newsletter will carry reports on the responsibilities and activities of CMOS Committees.

7. The 1983/84 Membership campaign will place emphasis on personal contact, with each member of the Centre executives being expected to do his/her part.

8. Applications for grants from AES will be based on the federal government's 6% and 5% guidelines. As in previous years an application will also be made for a NSERC (Natural Sciences and Engineering Research Council of Canada) grant.

9. The Ministry of Consumer and Corporate Affairs has provided a listing of their requirements for changes to the CMOS by-laws before they can approve an application for incorporation.

10. Council #1 will be held on October 27 and 28 in Hull, Quebec.

OTTAWA CENTRE

Once again another program-year is nearly upon us and it will soon be time to meet and hear speakers on topics related to Meteorology and/or Oceanography.

Your executive for the 1983/84 year consists of the following persons:

Chairman	Bob Jones	(AES)	(997-3511)
Vice-Chairman	Geoff Holland	(OSS)	(995-4206)
Secretary-Treasurer	Bruce Ramsay	(AES)	(996-5236)
Membership Chairperson	Becky Milo	(DMETOC)	(995-4086)
Past President	Brian O'Donnell	(AES)	(997-3511)

Please feel free to contact the executive on any subject related to our Centre.

The executive met during the summer to plan this year's program. A theme of "Topical Issues in Meteorology and Oceanography" was decided in order to support the National Executive's objective to involve in CMOS a broader range of persons who have an interest in our disciplines, but may have meteorological or oceanographic background. Plans are fairly well advanced to hear speakers on subjects such as Icebergs, Long Term Climate Change, Arctic Diving (Dr. Joe MacInnes), Ice Station Cesar, Weather Conditions and Health, and El Niño.

CMOS 17th ANNUAL CONGRESS

SUMMARY: Remote Sensing of Sea Ice (Session 3)

The papers presented during this session covered several different aspects of remote sensing of sea ice. These included the use of passive microwave sensors (both satellite and airborne), side-looking airborne radar, laser and photographic methods.

The first three speakers of the session were from Ph.D. Associates Inc., a company involved in the mapping and analysis of sea ice parameters, using Nimbus-7 SMMR passive microwave data. Dr. F.W. Thirkettle described the operational system used to collect and analyse the SMMR data, then to display and distribute the resulting ice type and concentration information to users. I. Rubinstein outlined results of the current algorithms used to derive sea ice parameters from the SMMR brightness temperatures. A. Owens presented results from a time-series study of Gulf of St. Lawrence sea ice conditions derived from SMMR data. The study focussed on a comparison to Atmospheric Environment Service ice charts.

H. McRuer (AES Ice Centre, Ottawa) was on board the MV Arctic in November 1982, as it travelled through Baffin Bay. He presented a paper describing comparisons made between Nimbus-7 SMMR ice data and ice information that was available both at the MV Arctic and at AES Ice Central. The results gave insight into the usefulness of SMMR data for ship navigation.

B.E. Troy, Jr. (Naval Research Laboratory, Washington, D.C.) described the results of airborne passive microwave measurements of sea ice at 90 and 140 GHz taken in the Eastern Beaufort Sea in October 1981. Brightness temperatures and emissivities of several ice types, including second year ice were determined.

S. Martindale (F.G. Bercha and Associates Ltd., Calgary) presented a comparison of a variety of remote sensing methods used for gathering Arctic marine ice cover relief data. A statistical analysis was performed on data generated from laser, SLAR and aerial photography using sample ice relief features.

L. Muir (COGLA, Ottawa) presented a paper on behalf of Y. Carrier and W.S. Appleby describing their analysis of SLAR films for sea ice floe size distribution. The discussion focussed on methodological problems involved with the approach, and an evaluation of its feasibility.

Anne Owens

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S.I.G. - ICE

An ice working group was conveyed in May at Banff. Information regarding this group can be obtained from Lyn McNutt of F.G. Bercha and Associates Ltd. (403-270-2221) or from Joe Eley of Gulf Oil (403-233-4352).

TRANSLATIONS

C.M.O.S. NEWSLETTER

Although editorial policy of the Newsletter states that articles published will be in the language of the author's choice, there are notices and other items received which would serve members more effectively if published in both official languages. To attempt to improve our capacity in this regard, your editorial staff is in search of someone in the Ottawa-Hull area willing to serve as Newsletter translator. If you can spare a few hours of your time per issue, please contact A. Bolduc (995-2007) or D. Mudry (995-6730).

NEW MEMBERS

New members approved at Executive Meeting No. 3

September 13, 1983

Corporate:	Concord Scientific Corporation Downsview
Regular:	Mr. Ross D. Brown Toronto, Ontario
	Mr. Radislav Maiic Chicago, Illinios
Student:	Diane Masson Vancouver, B.C.
	Darlene Lofstrom Vancouver, B.C.
	Mr. Bob Gorman Ottawa, Ontario

CMOS NEWS FEE STRUCTURE

In one of the most historically significant moves by the Society, the Annual General Meeting of CMOS has approved the splitting of membership fees from all subscription fees, except for the Newsletter at its May 3, 1983 meeting in Banff.

This means that beginning in 1984, the regular member will have complete freedom of choice as to which publications he receives. It was seen as a positive situation that Atmosphere-Ocean need not remain as a compulsory subscription for all members, and a statement that it had matured into a world class journal in high demand by individuals and institutions around the world. The resultant decrease in straight membership fee is hoped to attract more CMOS members.

This means that from now on, each member has to decide which publication(s) (A-O, Chinook, Climatological Bulletin) he wishes to order. Members are urged to support the society by ordering as many publications as possible. In addition, the CMOS society will accept voluntary contribution from its members to assist it in its important work in promoting meteorology and oceanography in Canada. These donations are tax deductible.

a) **1984 Fees**

The fees were left substantially unchanged from 1983, except as required by the previous decision.

Membership
- Regular Membership - $20.00 - (receive Newsletter)
- Student Membership - $12.00 - (receive A-O and Newsletter)
- Corporate/Sustaining Membership - $75.00 - receive A-O and Newsletter)

Subscriptions (CMOS Members)

Atmosphere-Ocean	$20.00
Climatological Bulletin	10.00
Chinook	7.50

Subscriptions (Institution)

Atmosphere-Ocean	$50.00

b) **Associate Membership**

Since Regular Membership without A-O is now available at $20.00/year, the AGM has approved dropping this membership class.

c) **A-O Subscription to Non-CMOS Members**

The AGM has approved the subscription to A-O by individual, non-CMOS members at the rate of $25.00/year.

MEMBERSHIP APPLICATION FORM - DEMANDE D'ADHESION

(Please print in block letters - Caractères d'imprimerie s.v.p.)

Please enroll me as a member of the Canadian Meteorological and Oceanographic Society in the category indicated below, for 1984.

Je désire devenir membre de la Société canadienne de Météorologie et d'Océanographie, dans la catégorie suivante, pour l'année 1984.

Regular member ☐ Membre régulier ☐ Student ☐ Etudiant ☐

Corporate or Sustaining ☐ Corporation ou soutien ☐

I would like to receive the following publication (s)
J'aimerais recevoir la (les) publication(s) suivante(s)

Atmosphere - Ocean ☐
Climatological Bulletin ☐
Chinook ☐

My primary field of interest is
Ma principale sphère d'activités est

Meteorology ☐ Météorologie ☐ Oceanography ☐ Océanographie ☐ Hydrology ☐ Hydrologie ☐

Air Pollution ☐ Pollution de l'air ☐ Agriculture and Forestry ☐ Agriculture et foresterie ☐

Title/Titre Dr __ Mr M __ Mrs Mme__ Miss Mlle __ Other Autre __

Name/Nom _____

Address/Adresse _____

_____

_____

_____

Telephone _____ _____

Occupation/Emploi _____

(For records only; if student, indicate institution and year studies will be completed.)
(Pour dossiers seulement; l'étudiant doit inscrire le nom de son institution et l'année où il finira ses études.)

I attach a cheque for $____ payable to the Canadian Meteorological and Oceanographic Society for the membership fee and the publication(s) subscription, if applicable.

Ci-inclus un cheque de____$ payable à la Société canadienne de Météorologie et Océanographie couvrant les frais de la cotisation et de l'abonnement s'il y a lieu.

_____ _____

Date Signature

Mail completed form to the address below.
Faire parvenir la demande à l'adresse suivante.

CMOS - SCMO
Suite 805
151 Slater Street
Ottawa, Ontario
Canada K1P 5H3

NOTICE TO NEW MEMBERS

Those who apply for membership must wait for acceptance by Council or by the Executive on behalf of Council. As a result, new members can expect several months to pass before their names are printed in the Newsletter.

CORPORATE AND SUSTAINING MEMBERS

Fathom Atlantic Ltd.
Dartmouth, Nova Scotia

NORDCO Ltd.
St. John's, Newfoundland

Panarctic Oils Ltd. Library
Calgary, Alberta

Seaconsult Marine Research Ltd.
Vancouver, British Columbia

Dobrocky Seatech Ltd.
Sidney, British Columbia

Aanderaa Instruments Ltd.
Victoria, British Columbia

Viatec Resources Systems Inc.
Calgary, Alberta

Alberta Agriculture
Advisory Committee on Weather Modification
Three Hills, Alberta

Ontario Hydro - Meteor. Systems
Toronto, Ontario

Geneq Inc.
Anjou, Quebec

Hymeteq A.L. Ltd.
Downsview, Ontario

Petro-Canada
Calgary, Alberta

Canada Oil and Gas Lands Administration
Ottawa, Ontario

Ph.D. Associates Ltd.
Rexdale, Ontario

Beak Consultants Ltd.
Richmond, British Columbia

Frederick Goertz Ltd.
Willowdale, Ontario

Wellsdale Research Limited
St. Albert, Alberta

Bristol Aerospace Ltd.
Winnipeg, Manitoba

Hermes Electronics Ltd.
Dartmouth, Nova Scotia

Intera Environmental Consult Ltd.
Calgary, Alberta

FENCO Consultants
Calgary, Alberta

Airflow Developments Canada Ltd.
Mississauga, Ontario

M.E.P. Ltd.
Downsview, Ontario

Envirocon Ltd.
Vancouver, British Columbia

MacLaren-Plansearch Ltd.
Halifax, Nova Scotia

MacDonald Dettwiler & Associates Ltd.
Richmond, British Columbia

EDITORIAL STAFF CHANGES

People come and go. Bad news is followed by good news. The bad news is that Rick Lee is leaving Ottawa for Gander where he was recently posted. So after a year of good work in editing our newsletter, he will be providing the Canadians with (better?) weather forecasts. We wish him good luck and thank him very much for all the enthusiasm he has brought to last years' editing team.

The good news is that we have found a replacement for Rick. Her name is Micheline Gilbert and she works for DFO as an editor.

We wish to welcome Micheline in joining the Newsletter editorial staff.

P.A. Bolduc

NEWSLETTER SCHEDULE

It is planned that the C.M.O.S. Newsletter will be published five times per calendar year. Deadlines for the input to these issues will be approximately two weeks prior to the mailing dates, as listed below:

	Mailing Dates	Press Deadlines
1st	- February 28	February 14
2nd	- June 30	June 15
3rd	- August 31	August 15
4th	- October 31	October 15
5th	- December 31	December 10

1983-84 CALENDAR OF CMOS ACTIVITIES

July 29	-	1984 publication information mailed to subscription agencies
Aug. 19	-	Executive meeting #2
Aug. 31	-	August Newsletter mailed
Sept. 13	-	Executive meeting #3
Sept. 21	-	Address labels for A-O 21-3 required by UTP
Oct. 24	-	Subscribers invoiced for 1984
Oct. 27/28	-	Council meeting #1
Oct. 31	-	October Newsletter mailed
Nov. 21	-	Address labels for A-O 21-4 required by UTP
Dec. 1	-	Membership renewal notices mailed - Corporate members invoiced for 1984 - Membership and subscription lists produced for Executive, Editors, Centres and SIG's
Dec. 5	-	Executive meeting #3 (tentative)
Dec. 31	-	December Newsletter mailed
Jan. 15	-	Second invoices sent to subscribers - First set of receipts mailed to members
Jan. 31	-	Second membership renewal notices sent to members
Feb. 16/17	-	Council meeting #2
Feb. 28	-	February Newsletter mailed
Mar. 20	-	Address labels for A-O 22-1 required by UTP
Mar. 30	-	Final membership renewal notices sent to members - Second set of receipts mailed to members
Apr. 15	-	Address labels for Climatological Bulletin required
Apr. 21	-	Address labels for A-O Congress Issue required by UTP - Address labels for Annual Review required
Apr. 30	-	Membership and subscriber lists produced for Executive, Editors, Centres, and SIG's
May 8	-	Executive meeting #6
May 28	-	Council meeting #3
May 29/31	-	1984 Congress (Halifax)
June 15	-	Third set of receipts mailed to members
June 19	-	Address labels for A-O 22-2 required by UTP
June 30	-	June Newsletter mailed

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In Answer to Request

CMOS Newsletter circulation by mail is to approximately 800 Canadian members and to 60 foreign members. Approximately 50 additional copies are distributed for promotional purposes.

M. Gilbert

ADVERTISING RATES - CMOS NEWSLETTER

The following rates are based on 8.5 x 11.5 inch (21.6 x 27.9 cm) black and white, camera-ready copy. Additional charges apply where typesetting, artwork or photographic plates are required. Distribution per issue is approximately 950.

RATES PER ISSUE:

Type of Advertisement	Full Page	Half Page	1/4 Page
Commercial	$150.00	$ 80.00	$50.00
Position Vacancy *	100.00	60.00	40.00
Employment Wanted (members only)	----- FREE -----		

* Discounts: Corporate and Sustaining members' advertisements at the Position Vacancy rate.

Forward Advertisements To: D. Mudry
Editor, CMOS Newsletter
c/o Atmospheric Environment Service
Room 345
365 Laurier Avenue West
Ottawa, Ontario K1A 0H3

NOTE: Advertisement acceptance is at the discretion of the Editor.

INTERNATIONAL COMMISSION ON THE ENVIRONMENT TO THE YEAR 2000

We would like to draw to your attention the proposed establishment of an international commission on the environment to the year 2000. If adopted by the United Nations, the commission could have a profound impact on global environmental protection and management over the next several decades.

Canada is supporting the establishment of the commission because of its importance to both developed and developing countries. Environment and development organizations, as well as other interested bodies, will have a significant role to play in advising the commission during its work and in relaying its report to the public on completion. The attached backgrounder provides some basic information on the suggested purpose and form of the commission.

Environment Canada is a partner with the Department of External Affairs and the Canadian International Development Agency in promoting the international commission on the environment to the year 2000. If you would like further information about the proposed commission, please contact Mr. Robert Lederman, Director, U.N. Programs, Intergovernmental Affairs Directorate, Environment Canada, Hull, Québec K1A 0H3, telephone (819) 994-1516.

COMMISSION INTERNATIONALE DE L'ENVIRONNEMENT D'ICI L'AN 2000

Nous attirons votre attention sur l'éventuelle creation d'une commission internationale sur l'étude de l'environnement depuis nos jours jusqu'à l'an 2000. Si l'Organisation des Nations Unies approuve ce projet, cette commission exercerait, selon toute vraisemblance, une influence énorme dans le domaine de la protection et de la gestion de l'environnement mondial au cours des prochaines décennies.

Le Canada appuie la création de cette commission en raison de son importance tant pour les pays industrialisés que pour les pays en développement. Les organisations dont les activités sont axées sur l'environnement et le développement, ainsi que tout organisme concerné, auront un rôle prépondérant à jouer pour ce qui est de conseiller la commission dans ses travaux et de publier son rapport.

En collaboration avec le ministère des Affaires extérieures et l'Agence canadienne de développement international, Environnement Canada travaille à promouvoir la mise sur pied de la commission, dont le mandat et la structure sont décrits dans le document ci-joint. Pour de plus amples imformations, veuillez communiquer avec M. Robert Lederman, directeur des programmes multilatéraux (Nations Unies), Direction générale des affaires intergouvernementales, Environnement Canada, Hull (Québec) K1A 0H3, (819) 994-1516.

METEOROLOGICAL EDUCATION AND EMPLOYMENT IN CANADA SURVEY RESPONSES

1. The Survey

Late in 1981 the newly-established CMOS Committee on Education for Meteorology decided to conduct a national survey with the objectives of documenting the present state of meteorological education and employment and of collating information concerning perceived trends in these fields in the next few years. One of the motivations for gathering the information was the need to assess the capacity of the university community to fill the gap left by the withdrawal of the AES from its role in meteorological education (as distinct from training) at a time when demand for meteorologists appeared to be increasing from the private sector.

The survey was conducted by circulating two questionnaires for response. One was directed at educational institutions to elicit data regarding programs, courses, faculty research interests and salaries, students (their origin, research interests and financing), number of degrees, etc. The other was sent to employers to seek the number, origin, educational background, income and job category of employees and anticipated needs for staff in the next five years. The former questionnaire was sent to about 110 university departments and the latter to the same universities plus about 240 government departments (Federal and Provincial), utilities, research organizations, industries and environmental consultants.

We received 82 replies (representing a 28% response by universities, 25% by government and 18% by industry). Careful checking showed the main actors of both educators and employers had responded. Numerically the replies are probably less than 10% in error for the education statistics and perhaps 20% for data supplied by employers.

The data were current for late 1981/early 1982. Since that time the Canadian economy has sagged further thereby contracting job availability and there has been increased interest from graduating students in those jobs. However, in general the data probably represents a reasonable long-term view.

The following is a very condensed summary of some of the numerical information gleaned from the survey. Such a presentation is unable to convey the qualitative and individual characteristics of the responses. These are being discussed by the Committee.

2. Education

University-level education in meteorology is divided those institutions where meterology departments or programs are, or are being, established (here referred to as the 'core' departments: Alberta, Dalhousie, McGill, Québec, à Montréal, Toronto, and York) and those having special interests in climatology, oceanography, agrometeorology and forest meteorology where one or more departments are involved. The responses are best reviewed according to this breakdown with emphasis on the former. Full details, and the special features of these programs are available in university calendars and in the AMS-UCAR Directory of Atmospheric Science Programs.

At the time of the survey four of the core universities offered both bachelors and masters degrees, three offered the doctoral degree and five provided diploma studies in meteorology. A total of 38 faculty members (full and part-time) taught in these departments and their research specialities were: 7 cloud physics/weather modification, 5 dynamical/numerical weather prediction, 5 physical/radiation, 5 pollution, 2 synoptic, 2 satellite/radar, 2 agro-forest meteorology, 3 other (instrumentation, statistics, tropical, arctic). The graduate student research interests followed a similar breakdown except in the cloud physics category where, although faculty with that speciality represent about 18% of the total, their students occupy about 33% and 43% of the masters and doctoral places respectively. Fully 80% of the graduate students are from Canadian universities (20% from the same, 60% from other). Graduate financing sources are 42% from national and other external fellowships (NSERC, AES), 33% from university teaching and research assistantships, 21% university fellowships and 4% are unassisted. Instances of qualified students being unable to continue for lack of funds were mentioned but were rare.

The numbers of students gaining (or projected to gain) degrees in meteorology from the core departments are as follows:

	1979	1980	1981	1982	1983*	1984*	1985*
B. Sc.	4	3	5	30	32	42+	40
Diploma	9	8	12	4	20	30+	30
Subtotal	13	11	17	34	52	72+	70
M. Sc	16	17	20	10	17	20+	20
Ph.D.	3	1	2	10	8	6	6
Subtotal	19	18	22	20	25	26+	26

*Data updated May 1983

The pattern is clearly one of projected growth, especially from 1982 onwards. The jump in B.Sc./Diploma graduates from 1982 is largely due to the introduction of the program at UQAM, which is projected to supply 50% of the total B.Sc./Diploma students in the country from 1982-84. It reflects the projected output of the Diploma program at Dalhousie. When combined with moderate growth at the other universities the projected increase in the supply of B.Sc./Diploma personnel is dramatic. The 'bump' in the Ph.D. output appears to arise from an unusually large group at Toronto.

During this same period the supply of graduates from the other universities will also grow but not as fast:

Degrees	1979	1980	1981	1982	1983	1984
B.Sc.	11	14	13	17	24	?
M.Sc.	13	8	19	24	28	27
Ph.D.	1	1	6	4	5	4

There is some interchange between the two tables (e.g. B.Sc. graduates from this list who will enter diploma programs at the core meteorological institutions). Otherwise the two groups remain separate pursuing their own disciplinary goals and employment opportunities.

3. Employment

The survey provides information on the employment of meteorological personnel and shows that a dual breakdown is appropriate: first, by job category there are meteorological technicians and meteorological professionals; second, by employer there are those in the Federal Service and those outside AES, reflecting the dominance of the one employer in the market.

There are more than 1250 meteorological technicians employed in Canada. Approximately 1130 are in the AES, where their duties include weather (surface and upper air) and sea ice observing, aviation and other briefing, climate services, and research assistance. In other government, university, and private industry jobs the duties include instrument maintenance, network observations, data processing, etc. Job categories often specify special interests such as air quality, hydrometeorology, agro-meteorology, forest meteorology. Of those technicians in the AES, 75% have high school or high school plus some higher level training, 13% are from community colleges, 7% have a degree (non-meteorological) and 4% have a military background. Of those employed outside the AES, 40% have high school, 40% community college, 20% AES and military, and 5% have degree backgrounds.

There are approximately 850 professional meteorologists of whom 660 are in the AES. In the AES 52% are involved in weather forecasting, 13% in research, 11% in executive and senior management roles, 9% in the Scientific Support Service units, 7% in project management, and the remaining 8% in training, instrumentation and ice services. Of those employed

outside the AES about 40 have bachelors, 50 masters, and 97 doctoral degrees. If we further subdivide we find the following distributions:

	Universities	Government (incl) Research Councils	Industry
B.Sc.	0%	53%	47%
MSc.	0%	58%	42%
Ph.D.	66%	22%	12%

Note: The university group is dominated (60%) by the faculty in the core meteorology departments. The remainder are those whose interests and qualifications would probably meet the CMOS definition of a meteorologist (Committee on Professionalism).

The most quoted job specialization reported for those with graduate degrees was in climatology/biometeorology (40%), next was air pollution/chemistry (16%), then cloud physics/radar (12%), forecast/general (10%), hydrometeorology (9%), and dynamic/NWP (8%). AES professional personnel obtain their degrees almost exclusively in Canada (98%) and outside the AES the proporation is still very high (87%) with 56% obtaining their degree from the core departments.

4. **Anticipated Needs**

Employers were asked to state their expected requirements for meteorological personnel in the next 5 years. The demand for meteorological technicians is likely to average about 70-80 per year; 60-70 by AES and 10 from outside agencies. The outside group might typically consist of 5 general meteorological, 2 instrument, 1 hydrometeorological, 1 forest and 1 other technician.

The total demand for professional personnel is anticipated to average about 35-45 per year; 25-35 B.Sc./M.Sc. and 1-2 Ph.D. by AES and 9 by the outside community. The non-AES employers are interested in 3 B.Sc.'s (especially with forecasting and air chemistry) 5 M.Sc.'s (especially air quality forecasting and atmospheric chemistry) and 1 Ph.D. (no special area) per year.

5. **Matching Supply and Needs**

If the number of jobs available is considered to be approximately constant at the rate given in Section 4, the absolute supply of B.Sc/M.Sc. graduates was less than the demand up to 1982 (see first table in Section 2). Thereafter projections indicate the possibility of supply exceeding demand. This does not necessarily mean a problem exists, because a number of mitigating circumstances should be borne in mind when assessing these statistics. These include the facts that some of the M.Sc. and Ph.D. candidates are already employed and are on educational leave; a number of students graduating at the B.Sc. and M.Sc. level will be progressing to higher degrees; the demand data are probably underestimated (see Section 1); a number of students take other jobs anyway. In addition to this it should be stressed that many of the university community object to the idea of matching students with jobs, they point to the difference between training for a job slot and the primary role of the university in educating the mind. There is little doubt that meteorology provides an excellent basis for an education in the geosciences. Nevertheless it would seem important that potential students in meteorology be accurately appraised of employment prospects. In this regard the Committee intends to conduct an annual update of the supply of meteorological graduates and occasional checks on the demand for such personnel. This should provide a valuable data resource for student advisers.

Education Committee
T.R. Oke, Chairman

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WRITE IT DOWN

One area in which members have an opportunity to participate is the writing of articles for CMOS publications. There is at the moment a special need for articles for "CHINOOK"; such articles should have general interest and if possible be accompanied with photos and/or drawings.

CANADIAN SOCIETY OF ENVIRONMENTAL BIOLOGISTS

The Canadian Society of Environmental Biologists will be holding their national conference in Ottawa during the first week of January, 1984.

"Canada's contribution to the World Conservation Strategy:* What are our strategies for conserving resources."

T.A. Kellar
Regional Wildlife Biologist
Eastern Region
Ontario Ministry of
Natural Resources
(613) 258-3413

* A strategy developed by the United Nations Environment Program in cooperation with FAO, UNESCO, IUCN and World Wildlife Fund, 1980.

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CALL FOR PAPERS

The 18th Annual Congress of the Canadian Meteorological and Oceangraphic Society and the 11th Annual Meeting of the Canadian Geophysical Union will be held jointly at Dalhousie University, Halifax, Nova Scotia from May 29 to June 1, 1984. The theme is "The Marine Environment: Atmosphere, Ocean and Lithosphere". Theme Sessions common to the two Societies will include: Geophysical fluid dynamics, atmosphere, ocean and lithosphere; Arctic expeditions, CESAR, LOREX and FRAM; Scientific services to the offshore industry; Climate change; Coastal meteorology, oceanography and geophysics; and Boundary processes. Special Sessions will be organized to highlight a number of fields of particular interest. A feature of the meeting will be an Open House to be held at the Bedford Institute of Oceanography. Abstracts, not to exceed 400 words, related to the theme sessions or on any topic in meteorology, oceanography and geophysics will be accepted until January 27, 1984 and are to be sent to S.D. Smith (CMOS) and H.R. Jackson (CGU), Bedford Institute of Oceangraphy, P.O. Box 1006, Dartmouth, Nova Scotia, Canada B2Y 4A2. Commercial displays in the fields of oceanography, meteorology and geophysics are invited, and are being co-ordinated by Mr. John Brooke, 24 Flamingo Drive, Halifax, Nova Scotia, B3M 1S7 - phone (902) 443-2932.

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ATMOSPHERE-OCEAN
ADVERTISING RATES (1983)

Atmosphere-Ocean is the scientific journal of the Canadian Meteorological and Oceanographic Society. It is published quarterly in March, June, September and December and has a circulation of about 1200.

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EMINENT FISHERIES SCIENTIST RECIPIENT OF MARINE SCIENCE AWARD

Reuben Lasker of La Jolla, California, innovative fisheries scientist and educator, is the 1983 recipient of the A.G. Huntsman Award for excellence in marine science. Dr. Lasker holds both the post of chief of coastal fisheries resources division of the Southwest-Fisheries Centre as well as associate professor of marine biology at the Scripps Institution of Oceanography in San Diego, California.

Dr. Lasker will receive the silver medal at a special ceremony on November 9, in the auditorium at BIO from the President of the Royal Society of Canada, Prof. Marc-Adelard Tremblay. The award is supported jointly by the Departments of Fisheries and Oceans, Energy, Mines and Resources, the East Coast Petroleum Operators Association, and the Provincial Department of Fisheries.

Established in 1980 by BIO, this international award is presented annually in one of the three divisions of marine science-biological oceanography, physical/chemical oceanography and marine geoscience. It recognizes excellence of research, outstanding contributions to science, and influence on the course of marine scientific thought. Recipients are honoured not only for their calibre of science and scientific thought, but also for their great influence on the future of oceanography.

Dr. Lasker is a highly-regarded teacher and researcher in the field of biological oceanography who has had a profound influence on our understanding of the nutrition, biochemistry and general physiology of marine organisms. He has pursued a life-time search for the caused of fluctuations in the abundance of fish populations, concentrating on the sardines and anchovies of the California Current, as models of fish-stocks everywhere. Starting from laboratory studies on the bioenergetics of eggs and larvae in the early 60's, he developed a mechanism for spawning anchovies on demand in the laboratory. This significant break-through in the supply of research material enabled him to progress rapidly through studies of larval feeding behaviour to critical experiments at sea for determining the oceanographic conditions necessary to establish sufficient food conditions. This work is a most elegant combination of laboratory physiology and biological oceanographic field work by Dr. Lasker and his co-workers at San Diego. His work culminated in the late 70's with a clear first demonstration of how good and poor year-classes of fish, in this case anchovies, might be formed. This research not only resolved old questions, but has also led to a world-wide resurgence of research in this important field in recent years.

UN EMINENT SCIENTIFIQUE DES PÊCHES REÇOIT UNE DISTINCTION DES SCIENCES DE LA MER

Le Dr Reuben Lasker de La Jolla (Californie), scientifique innovateur des pêches et éducateur émérite, est le récipiendaire du prix A.G. Huntsman 1983 pour son excellence dans les sciences de la mer. Le Dr Lasker occupe le poste de chef de la Division des ressources halieutiques et côtières au Centre des pêches du Sud-Ouest et celui de professeur adjoint de biologie marine à la Scripps Institution of Oceanography, à San Diego (Californie).

Le Dr Lasker recevra une médaille d'argent lors d'une cérémonie spéciale, le 9 novembre prochain, à l'auditorium de l'IOB, des mains du président de la Société royale du Canada, le professeur Marc-Adélard Tremblay. Ce prix est parrainé conjointement par le ministère fédéral des Pêches et des Océans, celui de l'Énergie, des Mines et des Ressources, l'Association des exploitants du pétrole de la côte Est et le ministère provincial des Pêcheries.

Établi en 1980 par l'IOB, ce prix international est accordé, chaque année, dans l'une des trois disciplines des sciences de la mer soient - l'océanographie biologique, l'océanographique physique et chimique, et les sciences de la terre et de la mer. Il reconnaît l'excellence de la recherche, la contribution remarquable à la science et l'influence exercée sur le cours de la pensée scientifique. Les récipiendaires sont non seulement honorés pour la valeur de leur science et de leur pensée scientifique, mais également pour leur influence importante sur l'avenir de l'océanographie.

Le Dr Lasker est un professeur et un chercheur très respecté dans la domaine de l'océanographie biologique, qui a eu une influence marquée sur la compréhension de l'alimentation, la biochimie et de physiologie générale des organismes marins. Il a poursuivi des recherches, tout au long de sa vie, sur les causes de fluctuations dans l'abondance des populations de poissons, se concentrant surtout sur les sardines et les anchois du courant de la Californie, comme modèle des stocks de poisson du monde entier. A partir d'études en laboratoire sur la bioénergétique des oeufs et des larves, au début des années 60, il a développé un mécanisme favorisant, sur demande, le frai des anchois. Cette découverte sensationnelle de la production à volonté des matériaux nécessaires à sa recherche lui a permis de progresser rapidement de l'étude du comportement alimentaire des larves aux expériences cruciales en mer, visant à déterminer les exigences océanographiques nécessaires à l'établissement des conditions alimentaires adéquates. Ce travail est une combinaison très élégante de physiologie en laboratoire et d'océanographie biologique sur le terrain effectuée par le Dr Lasker et ses collaborateurs à San Diego. Son travail a atteint son point culminant à la fin des années 70, lorsqu'il a fait une première démonstration claire sur la façon dont on pouvait former une bonne et une mauvaise classe d'année de poisson, en ce cas des anchois. Ce travail n'a pas apporté, au cours de ces dernières années, que des réponses aux questions séculaires mais a donné un nouvel élan à la recherche dans ce domaine important.

GEORGE BOER GIVEN SPECIAL AWARD FOR CLIMATE MODELLING

For developing an internationally recognized climate modelling and diagnostics system, George Boer, chief of Environment Canada's Numerical Modelling Division, has been given a merit award under the Department's Incentive Awards Program for "exceptional and distinguished contribution to the effectiveness and efficiency of the Public Service".

At a ceremony held September 13 at the Atmospheric Environment Service (AES) Downsview, Ont. headquarters, assistant deputy minister Jim Bruce presented Dr. Boer with a Merit Award certificate and a cheque. Before an audience of colleagues and friends in the AES auditorium he was credited, among other things, with:

* applying leadership, extra effort, scientific skills and dedication to develop a "state of the art" climate modelling system allowing Canadian scientists to tackle major problems such as the effects of human activity on climate and the question of climate prediction.

* working nights, weekends and other slack computer periods over nine years, gradually assembling a team of six assistants, taking on a difficult, long-term task rather than doing a "neat, rewarding job with easy solutions but of less importance".

Dr. Boer obtained his Bachelor's degree in Mathematics and Physics from the University of British Columbia in 1963, his M.A. in Meteorology from the University of Toronto in 1965 and a Ph.D in Meteorology from M.I.T. in 1970. Starting with the old Meteorological Branch of the Department of Transport in 1963, George Boer first worked as a forecaster. In 1972 he became an AES research scientist and in 1974 was named head of its Modelling Division.

In 1979 Dr. Boer represented Canada on the intergovernmental panel on the first Global Atmospheric Research Program. In 1982 he presented an application of his climate modelling research to the World Meteorological Organization's working group on numerical experimentation. In 1983 he served as co-organizer of the Canadian Meteorological and Oceanographic Society's (CMOS) conference on a mesoscale research program for Canada and this year he also received the CMOS President's prize. He has made more than 50 contributions to books, journals and symposia.

★★★★★★★★★★★★★★★★★★★★★★★★★

REPORT ON EUROMECH-173 CONFERENCE ON AIR FLOW AND DISPERSION IN ROUGH TERRAIN, SEPTEMBER 13-16, 1983 DELPHI, GREECE

This conference was co-sponsored by the European Cultural Central at Delphi. There were 36 participants (Greece 18, U.K. 5, France 3, Italy 2, Sweden 2. Czechoslovakia, Netherlands, Denmark, West Germany, Canada and U.S.A. 1 each). The 22 papers covered topics ranging from field observations over complex terrain and at coastlines to wind tunnel/water tank projects and theoretical and numerical modelling studies.

The conference began on a high-note with an overview paper by Professor J.C.R. Hunt (Cambridge University) on "Air flow and dispersion among groups of hills and in sea breezes". He outlined the different purposes of models and then went on to discuss flow over and through groups of three-dimensional hills. He concluded his talk with references to sea breezes in complex terrain, mentioning the non-linear effect of head and tail winds on this phenomenon and also the problem of a double sea breeze over a headland.

The remainder of the first session consisted of eight papers which concentrated mainly on observational studies.

Professor R.S. Scorer (Dept. of Mathematics, Imperial College) presented a paper on "The use of satellite observations in the study of airflow affected by obstacle". He discussed the dynamics of airflow as evidenced from photographs of cloud formations. Additional information on winds can be gleaned from the evidence of sun glint from both calm and roughened seas.

Dr. Anton Beljaars (KNMI, De Bilt, Netherlands) gave an interesting paper on "Some properties of the non-homogeneous surface layer".

He was followed by Dr. Ann-Sofi Smedman (Meteorologiska Institutionen, Uppsala University, Sweden) who attempted to analyze complicated wind profiles and velocity spectra in her paper "Some observations of turbulence structure near a wooded coastline".

Prof. D.P. Lalas (University of Athens) described the results of detailed measurements from the top of a 1000m. high hill in the Athens area using bistatic and monostatic sounders and tethered balloons.

Professor Lalas then presented a talk on "Modelling of the flow over Crete for wind energy estimation" which described the application of the NOABL model to the problem. Because of the lack of reliable long-term series of measurements, an new (statistical) approach was used to input geostrophic wind to NOABL, thereby to derive statistics of available wind power.

Dr. G.T. Phillips (Science Applications Inc., La Jolla, California) gave a very interesting presentation on "Wind energy siting methodology and SIGMET model verification studies". The basic procedure is to use mainly the NOABL model with SIGMET being employed only occasionally (due to large CPU time) to verify NOABL and its use for special interest cases or "prevailing" conditions.

The third session consisted of four papers on wind tunnel/ water tank studies.

Dr. Raymond Bouquet (ENSMA, Université de Poitiers, France) described a "Wind tunnel study of the wind field structure around an airport", illustrating his talk with slides and movie film.

Antoniou, Bergeles and Athanassiades (Laboratory of Aerodynamics, Technical University of Athens) studied "Flow development behind surface mounted obstacles" in a paper presented by Professor G. Bergeles.

Dr. F. Tampieri (FISBAT-CNR, Bologna, Italy, discussed "Two-dimensional stratified fluid flow over valleys".

Professor N.E. Kotsovinos (School of Engineering, Xanthi, Greece) then gave a paper titled "Distorted hydraulic model of air flow over coasts and hills....to study air pollution problems".

The fourth session comprised four papers on numerical modelling.

A paper, presented by Dr. N. Moussiopoulos, (University of Karlsruhe, Germany) titled "Development of a numerical model for simulations of air pollution episodes in Athens, Greece" described applications of the CEM model. A photochemical sub-model has been incorporated.

The paper of M. Metrakis and D.P. Lalas (National Observatory of Athens) titled "Air flow in the Athens basin" was presented by Professor Lalas. A numerical model was used to calculate the flow field which was then employed to derive air parcel trajectories.

Dr. Jan Pretel (Institute of the Physics of the Atmosphere, Prague, Czechoslavakia) made a comparison between flat-terrain results from a Joint Field Experiment on the USSR steppes and those from the rough terrain at Kopisty, Czechoslovakia.

In a paper titled "A case study of a boundary layer wind regime in stably stratified air observed at the island of Gotland in the Baltic Sea", Prof. U. Högström (Met. Inst. Uppsala, Sweden) described a situation of highly variable wind velocity over southern Gotland despite fairly constant southeasterly geostrophic flow. The phenomenon was partially explained by frictional decoupling at the Latvian coast, ~ 200 km upwind, causing a pronounced low-level jet during the late night and early morning.

A paper titled "Short-range dispersion experiments made in hilly terrain" was presented by Dr. R.H. Maryon (U.K. Meteorological Office). Experiments at Blashaval, Scotland were described in which vertical dispersion was non-Gaussian and even showed excess concentration at low levels (and deficit at high levels) in comparison with F.B. Smith's theory. This was due to acceleration over the hill causing compression of the streamlines.

Dr. A.D.D. Craik (Mathematical Institute, University of St. Andrews, Fife, Scotland) pointed out in his paper titled "A laminar mixing method for airflow over undular terrain" that the airflow over undular terrain resembles flow of water beneath surface gravity waves. It is well known that the latter flow exhibits secondary longitudinal vortices. Dr. Craik suggested that in the atmosphere such secondary flows are likely to be effective in dispersing contaminants introduced at the surface.

The second session consisted of four modelling papers with the emphasis being given to wind-energy applications.

Dr. C. Sacré (Centre Scientifique et Technique du batiment, Nantes, France) gave a paper on "Simulation of simultaneous effects of roughness and two-dimensional topography on wind speed for wind energy applications". He compared model results with several sets of experimental data. He found that the combined roughness and terrain-induced perturbations could be used to obtain the total perturbation as follows:

$$(1+\Delta u/_{o}) = (1+\Delta u/_{o})_{R} \, (1+\Delta u/u_{o})_{T}.$$

Dr. G.A. Dalu (Instituto di Fisica dell'Atmosfera, CNR, Rome, Italy) used the University of Virginia mesoscale model to simulate different cases (mistral, scirocco, sea-breeze) in a paper titled "Three-dimensional air flow over Sardinia".

Dr. J.L. Walmsley (Atmospheric Environment Service, Downsview, Ontario, Canada) presented a paper titled "Some effects of thermal stratification on air flow over three-dimensional hills". Sample model results for three-dimensional turbulent flows in a stratified fluid were presented. One effect of stable stratification was the establishment of waves downwind from the hill. As the degree of stratification increased the speed-up maximum at the crest of the hill decreased and moved slightly downwind whereas the first lee-wave maximum increased and moved upwind. This effect was less pronounced for three-dimensional than for two-dimensional hills.

Professor G. Bergeles (see above) presented a paper, co-authored by Professor N. Athanassiades, on "Computation of the flow over a two-dimensional hill". The TEACH series code developed at Imperial College, in which turbulence is simulated by incorporating equations for both turbulent kinetic energy and dissipation, was used to compute results for comparison with wind-tunnel measurements.

The final paper of the conference was given by Dr. P.A. Bois (Université Pierre et Marie Curie, Paris, France) and was titled "Asymptotic modelization of lee waves by confined flows".

The final session of the conference was devoted to a discussion on directions for future research. Dr. Hunt chaired this session with presentations made by Mrs. P. Tassiou (Public Power Corporation, Athens), Dr. Walmsley and Professor Högström.

Mrs. Tassiou described the Public Power Corporation's efforts to reduce Greece's reliance on imported oil by increasing its wind-energy generation of electricity, initially on isolated islands.

Dr. Walmsley presented a list of currently available models, showing a lack of suitable models for the meso-γ-scale (2-20 km) which is also difficult to deal with observationally. He stressed the need to coordinate models, field and laboratory work and to make maximum use of individuals with expertise in more than one of these areas.

Professor Högström then presented a brief outline of problems of air flow at and near land-sea interfaces.

Professor Hunt announced that he would attempt to summarize the discussion and the papers presented in his role as rapporteur. He would plan to submit his report probably to Journal of Fluid Mechanics.

J.L. Walmsley,
Research Scientis
Boundary-Layer Research Division

WORLD METEOROLOGICAL ORGANIZATION

THE SECOND INTERNATIONAL SYMPOSIUM ON NOWCASTING
(NORRKÖPING, SWEDEN, 3-7 SEPTEMBER 1984)

The purpose of the Symposium is to provide an international forum for exchange of research experience and technical information in the following major areas:

- Mesoscale phenomena: structure and evolution dynamics
- Observations: observational methods and systems, analysis and interpretation
- Forecasting: extrapolation, physical models, numerical dynamical methods, total systems
- Discussion session: user requirements and the economic benefits of nowcasting

This Symposium will be conducted in English only. Scientists wishing to present a paper on any of the above-mentioned areas are kindly requested to submit an informative abstract not later than 1 November 1983 to the Chairman of the Programme Committee whose address is:

Dr. K.A. Browning
Meteorological Office
Radar research laboratory
RSRE
MALVERN, Worcs. WR14 3PS
United Kingdom

Authors will be notified of the acceptance of their papers by the Programme Committee. The accepted papers will be required in camera-ready form by 1 May 1984 for inclusion in a preprint volume.

Considering the possible shortage of hotel accommodation due to the celebration of the City of Norrkopings's 600th anniversary, the Local Organizing Committee, with Dr. S. Bodin as its chairman, has arranged that several hotels have set aside blocks of rooms for participants at the symposium, the price ranging from US$ 25.- to US$ 55. - per night. Persons interested in attending are requested to indicate whether they want room reservations to be made or not. In the former case, an indication of the preferred price range should be made. Individuals wishing to show posters and companies wishing to mount trade displays should also contact Dr. Bodin whose address is as follows:

Dr. S. Bodin
Swedish Meteorological and
Hydrological Institute
P.O. Box 923
S-60119 NORRKÖPING
Sweden

Call for Papers
65th Annual Meeting, AAAS (Pacific Division)
June 10-15, 1984
San Francisco, California

The 65th Annual Meeting of the American Association for the Advancement of Science (Pacific Division) will be held 10-15 June, 1984 at San Francisco State University, San Francisco.

The American Meteorological Society and Section W (Atmospheric and Hydrospheric Sciences) of the Pacific Division of the AAAS will, for the seventh year in sequence, co-sponsor paper sessions and other programs. It is expected that the following will be among the topics to be investigated: air-ocean interaction (including El Nino); coastal meteorology, climatology, and oceanography; energy; environmental pollution; and urban climatology and meteorology.

Abstracts of papers should be typed on 8 1/2" X 11" white bond paper. Title and text of abstract should be camera ready without paragraphs and should fit inside a 5" square box, with a 1" margin to the left of the box. Special symbols and signs that must be hand lettered should be rendered in reproducible black ink. Author's name, affiliation, and address should appear at the bottom of the page. Abstracts will be published in a booklet for distribution to registrants. Each presentation will be allotted 20 minutes, including discussion.

Abstracts should be sent by 31 March 1984 to the Program Chairman: Dr. John Lier, Department of Geography, California State University, Hayward, CA 94542 (Tel: 415-881-3193). The Program Chairman should be informed by the abstract deadline of any need for 35 mm, lantern slide, opaque, or overhead projectors, or for special equipment.

Further details can also be obtained from Dr. Alan E. Leviton, Executive Director, AAAs (Pacific Division), California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118 (Tel: 415-752-1554). Non-members of AAAS are encouraged to attend.

1984 CONGRESS

CALL FOR PAPERS

The theme of the meeting will be: "The Marine Environment: Atmosphere, Ocean and Lithosphere". Theme sessions will be of interest to members of both CMOS and CGU and will include:

1. Opening Plenary session.
2. Geophysical fluid dynamics: Atmosphere, Ocean and Lithosphere (Chairman: C. Quon).
3. Arctic expeditions: CESAR, LOREX, and FRAM (Chairman: H. Weber).
4. Scientific services to the offshore industry.
5. Climate change.
6. Coastal meteorology, oceanography, and geophysics.
7. Boundary processes.

In addition to theme sessions, special sessions will highlight fields of particular interest. Chairmen for theme and special sessions are now being nominated by the programme committee and will use their contacts to encourage submission of abstracts by experts in their fields. Special sessions will include the following:

8. Air Pollution Meteorology
9. Hydrology
10. Agriculture and Forestry Meteorology
11. Operational Meteorology
12. Marine Sediment Geochemistry and Paleooceanography
13. Marine Chemistry
14. Hydrocarbon Pollutants and Analytical Methods
15. Sea Level, Tides and Storm Surges
16. Climatology-Atmosphere, Ocean and Ice
17. Prediction of Extreme Events in the Marine Environment
18. Lithospheric Stresses
19. Deep Crustal Studies: Results from COCRUST plans for Lithoprobe
20. Hydrothermal Activity at Ridge Crests

TWELFTH INTERNATIONAL LASER RADAR CONFERENCE

AIX-EN-PROVENCE, FRANCE
AUGUST 13-17, 1984

You are cordially invited to attend the Twelfth International Laser Radar Conference to be held on August 13-17, 1984 at the Palais de Congrès, Aix-en-Provence, France. This meeting is conducted under the auspices of the International Radiation Commission of the International Association for Meteorology and Atmospheric Physics (IAMAP) and the Committee on Laser Atmospheric Studies (CLAS) of the American Meteorological Society; It will be organized by the Service d'Aéronomie CNRS, Verrières le Buisson, France. The Centre National de la Recherche Scientifique, the Etablissement d'Etudes et de Recherches Météorologiques, the Centre National d'Etudes Spatiales and the Electricité de France will be cosponsoring organizations for this conference.

Program Chairman for the twelfth ILRC is Professor J. BLAMONT and Conference Coordinator is Mr. J.P. GRANIER, Service d'Aéronomie du CNRS, BP3, 91370 - Verrières le Buisson, France.

The Program will consist of invited papers and contributed papers including both oral presentations and poster sessions. Extended abstracts will be distributed to all participants at the time of registration.

Abstracts submitted for presentation must be received by March 1st, 1984. The Program committee will notify authors as to acceptance of all abstracts received prior to the deadline. Further informations on abstract presentation will be given in the Second Circular which is due to appear in Fall 1983.

The main subjects to be emphasized at the meeting are:

- Air Pollution and related meteorological processes Lidar investigations,
  - boundary layer,
  - plume dispersion,
  - chemistry of polluted areas,
  - diffusion processes.
- Applications of Lidar to meteorological studies and cloud physics,
  - clouds,
  - precipitation,
  - water vapor,
  - temperature,
  - pressure winds,
  - aerosol particules.
- Applications of Lidar to radiative transfer and atmospheric propagation,
  - extinction and absorption processes,
  - visibility,
  - multiple scattering,
  - Rayleigh and Mie Scattering.
- Lidar investigations of the atmospheric part of biogeochemical cycles,
  - trace species measurements (troposphere, stratosphere)
  - volcanic aerosols,
- Lidar instrumentation and methodolgy,
  - laser developments,
  - new measurements concepts.
- Applications of coherent Lidar to atmosphere physics
- Spaceborne and airborne Lidar

Lodging during the conference will be available at local hotels (please specify on the return sheet the hotel category of your choice) and at the University of Aix-Marseille;

For further informations and to receive the Second Circular, please address the attached form to:

SERVICE D'AERONOMIE du CNRS
12th International Laser Radar Conference
A l'Attention de Mr. G. MEGIE ou de Mr. J.P. GRANIER
BP 3
91370 - VERRIERES LE BUISSON
FRANCE

DOUZIEME CONFERENCE INTERNATIONALE LASER RADAR

AIX-EN-PROVENCE, FRANCE
13-17 Août, 1984

Vous êtes cordialement invité à participer à la 12ème Conférence Internationale Laser Radar qui aura lieu du 13 au 17 Août 1984 au Palais des Congrès d'Aix-en-Provence, France. Cette Conférence est placée sous l'égide de la Commission Internationale Radiation de l'Association Internationale de Météorologie et de Physique de l'Atmosphère (AIMPA) et du "Committee on Laser Atmospheric Studies" (CLAS) de l'American Meteorological Society; Elle sera organisée par le Service d'Aéronomie du CNRS, Verrières le Buisson, France, avec l'aide du Centre National de la Recherche Scientifique, de l'Etablissement d'Etudes et de Recherches Météorologiques, du Centre National d'Etudes Spatiales et d'Electricité de France.

Le président du Comité des Programmes pour la 12ème CILR est le Professeur J. BLAMONT. La coordination sera assurée par Mr. J.P. GRANIER, Service d'Aéronomie du CNRS, BP 3 - 91370 Verrières le Buisson, France.

Le programme de cette conférence comprendra à la fois des papiers invités et des communications présentées soit oralement, soit sous forme d'affiches. Les résumés des communications seront distribués à tous les participants au moment de l'inscription.

Les résumés soumis pour présentation doivent être reçus avant le 1er mars 1984. Le Comité de Programmes informera les auteurs de l'acceptation de leur communication si le résumé est effectivement parvenu avant la data limite. Des informations complémentaires quant à la présentation des résumés seront fournies dans la Seconde Circulaire qui paraîtra à l'automne 1983.

Les principaux sujets qui seront traités lors de cette conférence concernent:

- Etude par sondage laser des processus liés à la micrométéorologie locale et à la pollution de l'air
  - couche limite
  - dispersion des panaches
  - physicochimie des zones polluées
  - processus de diffusion
- Applications du lidar aux études météorologiques et à la physique des nuages
  - nuages, précipitations
  - cycle de l'eau
  - mesure des paramètres météorologiques : pression, température, vents
  - aérosols
- Transfert radiatif et propagation de la lumière dans l'atmosphère
  - processus d'extinction et d'absorption
  - mesures de visibilité
  - diffusion multiple
  - diffusion Rayleigh et diffusion Mie
- Applications des sondages laser à l'étude de la phase atmosphérique des cycles biogéochimiques
  - mesures de constituants minoritaires (troposhère, stratosphére)
  - aérosols d'origine volcanique
  - mesures de flux
- Instrumentation lidar et méthodologie
  - développement laser
  - nouvelles méthodes de mesure
- Applications des lidar cohérents aux études atmosphériques
  - lidar embarqué sur avion ou satellite.

Lors de cette conférence il sera possible de trouver un hébergement, soit dans les hôtels locaux, soit à l'Université d'Aix Marseille (il conviendra de spécifier sur le talon détachable de renvoi, le type et la catégorie d'hébergement de votre choix).

Pour recevoir les informations complémentaires et la deuxième circulaire, pourriez-vous renvoyer le formulaire ci-joint à

Service d'Aéronomie du CNRS
12ème Conférence Internationale Laser Radar
A l'Attention de Mr. G. MEGIE ou de Mr. J.P. GRANIER
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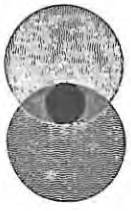
12 

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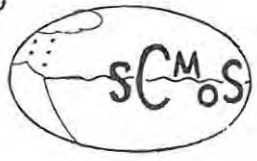
19 

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