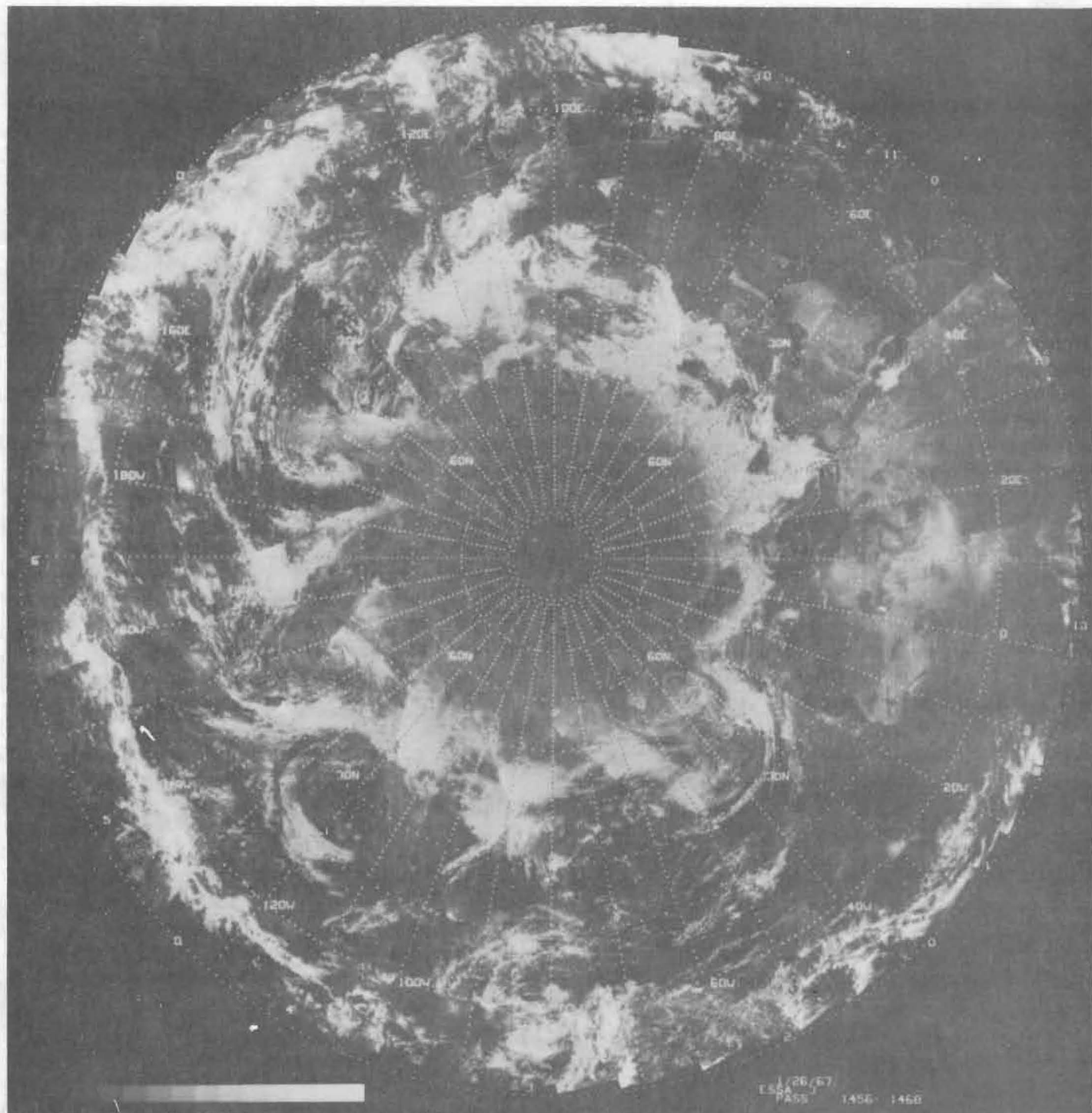


**MONTHLY REPORT  
OF THE  
CANADIAN  
METEOROLOGICAL SERVICE  
DECEMBER 1970**



DECEMBER 1970

<u>ITEM</u>	<u>SUBJECT</u>	<u>REFER</u>
1.	Joint Canada-U.S. Feasibility Studies for IFYGL	Nov. 70
2.	Ça Bouge à Montréal	Nov. 70
3.	CLIMAT TEMP Data for Canada by Computer	July 70
4.	Recreation and Tourism	Aug. 70
5.	Third International Pyrheliometer Comparisons	Apr. 70
6.	WMO Seminar on Agricultural Meteorology - Bridgetown, Barbados - November 9-21, 1970	Nov. 70
7.	Study on Automation of Ice Central Functions	---
8.	Progress Report on Meteorologists (B.Sc.) Course 27	Oct. 70
9.	Presentation of Long Service Awards	---
10.	New Book: Biometeorological Methods	Sep. 70
11.	Instrument Training	---
12.	Personnel	Nov. 70

Cover Photograph - Satellite Mosaic of the North Pole

MONTHLY REPORT OF THE  
CANADIAN METEOROLOGICAL SERVICE

DECEMBER 1970

---

ITEM 1

JOINT CANADA - U.S. FEASIBILITY STUDY FOR IFYGL

The Canadian Meteorological Service is committed to the support of an intensive interdisciplinary research program, the International Field Year on the Great Lakes, to be carried out in 1972. The Field Year is a joint Canada-U.S. project and part of the International Hydrological Decade (1965-74), a world-wide research effort sponsored by UNESCO and supported by the World Meteorological Organization and other international agencies. Research will be concentrated on Lake Ontario and its drainage basin. It is anticipated that the results will lead to more efficient water resource management throughout the Great Lakes region.

One of the major projects proposed for the Field Year is a study of the atmospheric water balance over the lake. Water loss from the surface, through evaporation, will be estimated using measurements of atmospheric moisture (in the form of clouds and water vapour) and moisture advection through wind action. These measurements are to be carried out using rawinsonde balloons, weather radar, aircraft observations, satellite photographs and surface meteorological observations.

To test the feasibility of the project and to ensure efficient planning, two preliminary studies have been completed by the Meteorological Service. Data for a third feasibility study were collected during the twelve-day period December 7 to 18, 1970. Rawinsonde balloons were released simultaneously from three locations along the lakeshore: Scarborough, downtown Toronto and a site west of Oakville. Wind, humidity and temperature data up to the 40,000 ft. level were recorded at the tracking stations. A total of 61 sets of rawinsonde flights were obtained.

A number of scientists from various divisions of the Meteorological Service took part in the study. The project leader is Mr. H.L. Ferguson, a research scientist with the Headquarters Hydrometeorology Section. While Canadian teams manned the Scarborough and Toronto stations, the third was manned by personnel of the U.S. Army Electronics Command from



RELEASE OF RAWINSONDE BALLOONS FOR JOINT CANADA-U.S. FEASIBILITY  
STUDIES FOR IFYGL  
(Photograph Courtesy of the Toronto Telegram)

Fort Huachuca, Arizona. Their mobile rawinsonde station was located at Shell Oil's Oakville Research Centre. The project is also being sponsored by the U.S. National Oceanographic and Atmospheric Administration. The feasibility study received press and television coverage in the Toronto area.

Data are being prepared for computer analysis and preliminary results will be presented at the Great Lakes Conference in Toronto in April.

## ITEM 2

### ÇA BOUGE A MONTREAL

Après tant d'années d'une existence régulière, ordonnée, ça bouge. Comme une pierre jetée dans les eaux calmes d'un étang, le "WORKSHOP" arrivé.

Pendant une période de cinq semaines à partir de lundi le 11 janvier, tous les météorologistes du Bureau Météorologique de Montréal (avec l'addition de quelques-uns de la Région et de DND) suivront un cours intensif afin de régulariser l'approche de tous les jours au problème de prédiction le temps. D'ailleurs, cela est déjà arrivé dans les autres régions du Canada et maintenant, c'est notre tour à nous.

Nous avons commencé les préparations nécessaires en septembre, mais il y a toujours quelque chose qui traîne. Parfois, il est presque aussi difficile de prédire le temps qu'il faut laisser s'écouler avant qu'une action quelconque soit prise, que de prédire le temps qu'il fera dehors. De plus, il a été nécessaire d'intégrer ce réaménagement du bureau et la préparation d'une salle de conférence. A cette date tardive beaucoup de choses restent à faire, mais avec espoir tout sera en place lundi matin. On n'a pas encore abordé le programme et déjà on se rend compte que le nom "WORKSHOP" (c'est à dire atelier de travail) a été pas mal bien choisi.

A deux occasions nous avons été honorés par une visite de Mssrs. Paul Johns, Roy Lee et George McPherson qui sont venus nous expliquer le programme. Tout le monde ici s'attend à participer à une expérience qui promet d'être très enrichissante, et pour le bureau et pour chaque individu.

## ITEM 3

### CLIMAT TEMP DATA FOR CANADA BY COMPUTER

CLIMAT TEMP data which are exchanged internationally each

month by Member countries of WMO, comprise the monthly mean values of geopotential, temperature, dew point depression and wind velocity for 10 standard atmospheric levels from the surface up to 80,000 feet. December marked the commencement of a new program whereby these monthly CLIMAT TEMP data for Canada were derived by computer at the Central Analysis Office from the daily upper air messages received there for operational use, rather than by being manually computed at each of the 33 Canadian upper air stations. This new program makes possible a considerable savings in the man hours formerly required for the manual abstraction, computation and submission of these data at each month for the upper air stations, while at the same time eliminating errors that invariably occur in manual computations.

#### ITEM 4

##### RECREATION AND TOURISM

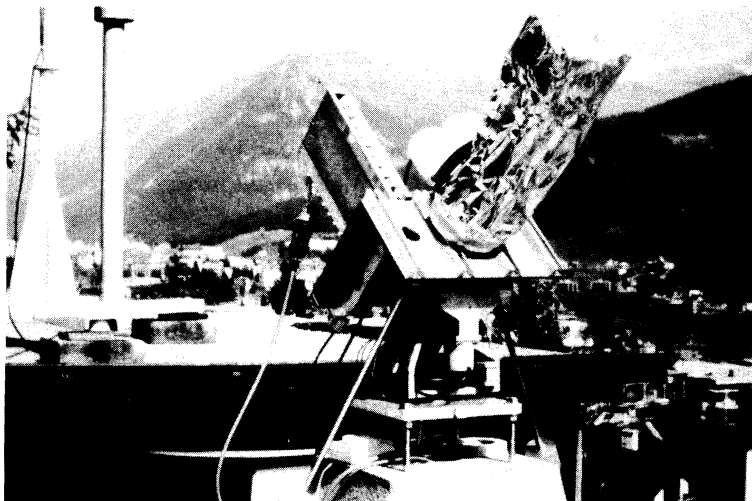
"A Climatic Classification of the Northwest Territories for Recreation and Tourism", a report prepared by Mr. R.B. Crowe in support of an overview study by the Government of the Northwest Territories, was completed on schedule and has received general acclaim from recreation experts. A preceding literature search showed there is very little information available linking climate and recreation for planning purposes. Recreation is now a major factor in the Canadian economy, and consequently both the federal and provincial governments are concerned with its sound planning and development. More requests for assistance will therefore arise; the report prepared for the Northwest Territories provides a useful basis for future studies.

#### ITEM 5

##### THE THIRD INTERNATIONAL PYRHELIOMETER COMPARISONS

A World Meteorological Organization Third International Pyrheliometer Comparison was held at Davos and Locarno, Switzerland, from 7-26 September 1970. The comparisons are held every four or five years in order to reference national and Regional radiation standards on the International Pyrheliometric Scale of 1956.

Over 30 standard pyrheliometers were assembled from 20 countries. J.R. Latimer carried an Angstrom and a silver-disk instrument from the National Atmospheric Radiation Centre to the comparisons. The comparison of Angstrom type instruments was greatly facilitated by means of new automatic recording and computing equipment at the World Radiation Centre

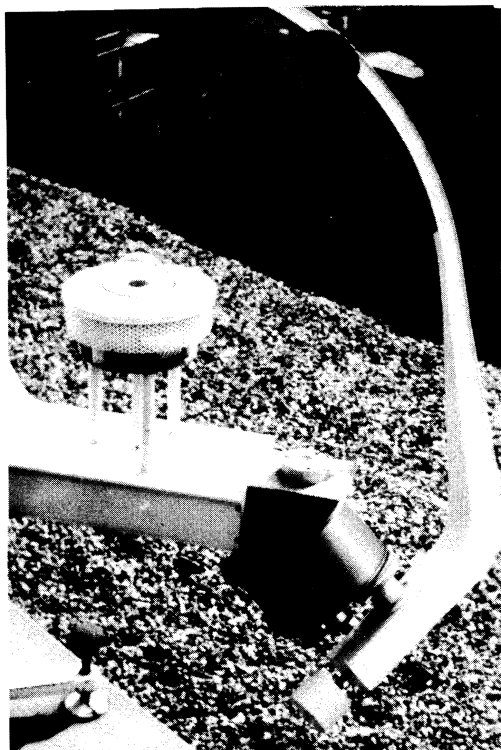


PHOTOGRAPHS TAKEN AT DAVOS,  
SWITZERLAND, DURING THE 3RD  
INTERNATIONAL PYRHELIOMETER  
COMPARISONS

Multi-Channel Photometer  
Measuring Circumsolar Sky  
Radiation



Dual JPL Absolute Pyrheliometers



Motor-Driven Occulter and Py-  
ranometer Measuring Diffuse  
Sky Radiation

at Davos. No significant change was found in the calibration of NARC standards since the last comparisons at Davos in 1964.

Two new models of absolute standards were also present during the comparisons; one developed at the Jet Propulsion Laboratory, and the other at the U.S. National Bureau of Standards. Two JPL radiometers of the same construction agreed to within 0.1 per cent while the agreement between NBS and JPL instruments was better than 0.25 per cent.

Over 27 observing runs of the JPL absolute standards were made versus three Angstrom pyrheliometers representing the IPS, 1956. Preliminary results (pending a complete report by CIMO) indicate that the IPS 1956 will now require a revision.

#### ITEM 6

##### WMO SEMINAR ON AGRICULTURAL METEOROLOGY BRIDGETOWN, BARBADOS - NOVEMBER 9-21, 1970

The purpose of this seminar was to give training to meteorological personnel, agronomists and agricultural planners of the countries in South America, Central and North America in various aspects of agricultural meteorology which are of direct interest and application to the development of agriculture.

There were about 27 participants, 20 from South America, 6 from Caribbean Islands and 1 from North America. The lectures were given simultaneously in English and Spanish (by interpretation) by ear phones. Dr. Wallen representing the Secretary-General of WMO spoke on the applications of meteorology to agriculture and their economic benefit. Among the speakers, prominent were Prof. J. Wang, U.S.A. and Dr. N.E. Rider, U.K., who gave several lectures on agricultural meteorology and meteorological instruments respectively. Much emphasis was laid on crop weather relationships and their importance in agricultural planning. Participants are well equipped through this seminar with a basic knowledge of agrometeorology, which if properly implemented, would be of great use in increasing agricultural production.

Dr. R.J. Polavarapu, Research and Training Division, attended. He explained, with illustrative examples, how micro-meteorological research is essential to other fields such as agriculture, hydrology, forestry, oceanography and meteorology.



ITEM 7

STUDY ON AUTOMATION OF ICE CENTRAL FUNCTIONS

The Forecast Research Section (FRS), on behalf of the Forecast Division, has been carrying out a feasibility study on the use of computers in the Ice Central. The purpose of the study is to identify those areas which could be quickly and effectively converted to computer operation, and to indicate the extent of eventual use of computers for objective ice analysis and prognosis.

The study is being carried out by a meteorologist on temporary assignment to FRS from Forecast Division, and the target date for completing the study is 1 March 1971.

The analysis thus far has indicated a number of areas for possible computer applications. These include prediction of freeze-up dates for the Gulf of St. Lawrence, point ice drift calculations and running space and time averages of a number of meteorological parameters used in ice forecasting. These and other possibilities are receiving detailed study.

ITEM 8

PROGRESS REPORT ON METEOROLOGISTS (B.Sc.) COURSE 27

Twenty-eight students from an initial enrollment of 34 students on Unit I training last June completed Unit II training on November 20, 1970. Of the 28 students who have entered Unit III training 5 must write supplemental examinations in order to obtain a clear record on the academic phase of training. The results of all these supplementals will not be known until mid-February, 1971.

It is of interest that the student who ranked first on the course was a former upper air technician, Mr. P.J. Kociuba. The other former technician on course, Mr. M. Newark, tied for second place on course, and obtained an overall first-class honour average.

Five of the students who completed Unit II were former

student assistants; two of these obtained first-class honour standings and the others second-class honour standing.

Three students from the Quebec Region graduated from McGill with a major in Meteorology. On Course 27 two of these students had first-class honour marks and one had second-class honour status.

STATISTICS--METEOROLOGISTS (B.Sc.) COURSE 27

REGION	INITIAL INPUT	RESIGNED OR RELEASED UNIT I	RESIGNED OR RELEASED UNIT II	CLEAR RECORD AND STANDING ON UNIT II			SUPPLEMENTALS UNIT II
				DIV. I	DIV. II	DIV. III	
Pacific	2	0	0	1	1	0	0
Western	1	0	0	0	1	0	0
Central	4	0	1(released)	1	1	0	1
Ontario	9	1	0	2	5	1	0
Quebec	13	2	1(resigned)	4	1	1	4
Atlantic	5	1	0	1	3	0	0
Totals	34	4	2	9	12	2	5
				23			5

ITEM 9

PRESENTATION OF LONG SERVICE AWARDS

Eighteen members of CMS Headquarters received long service pins from the Administrator, Mr. Noble, at a gathering held in the National Film Board Theatre, Mackenzie Building, on December 18, 1970.

In expressing the appreciation of the CMS for the contributions made over the years by the guests of honor, Mr. Noble noted the depth of experience represented by the group. Such experience, gained in all parts of Canada and in a broad spectrum of duties, was especially valuable in the Headquarters of a nation-wide organization like the CMS.

The occasion was unique in two respects. It was the last time that colleagues from widespread Headquarters offices would gather in borrowed quarters to mark such occasions - in future years, all would be under the roof of the new Headquarters Building which would provide the

facilities needed. Also, it was the last such group in which twenty-five years of service in the CMS could be synonymous with twenty-five years in the Department of Transport. Mr. Noble estimated that the CMS would constitute close to one quarter of the new Department of the Environment, and pointed out that there would continue to be many close ties with elements of our old Department in the years ahead.

Departments and headquarters buildings may change, but the success of the CMS will continue to depend upon the type of dedicated service exemplified by those who received long service awards at this gathering.



BACK ROW: L TO R

R.M. Cleland, E.B. Davidson, C.G. Goodbrand, F.B. Muller,  
N.M. Simon, J.S. McLernon, E.A. Wheeler, E.C. Bourdon.

FRONT ROW: L TO R

J. Deschenes, Miss E.M. Constable, F. Hughes, J.L.F. Judd,  
J.R.H. Noble, Mrs. L.E. Kealy, L.J. Marion, G.J. Mongraw,  
N. Steinhaur.

MISSING

F. Harris, W.A. Richardson.

ITEM 10

NEW BOOK: BIOMETEOROLOGICAL METHODS

Academic Press, New York, has just published a new book Biometeorological Methods by Dr. R.E. Munn of the Research and Training Division, Toronto. The emphasis is on methods of solving interdisciplinary meteorological-biological problems, rather than on results. Examples are drawn from the fields of meteorology, hydrology, physiology, ecology, biology, medicine, air pollution, geography, forestry, agronomy and engineering.

Because of an unexpected pre-publication interest in the last two months, Academic Press has decided to produce a paper-back edition (expected publication date of March 1971), in addition to the hard-cover edition that is now available.

ITEM 11

INSTRUMENT TRAINING

An initial course was given to Headquarters Instrument Development Technicians which covered the design and maintenance of the new solid state automatic station modules. These modules will be common to a variety of automatic stations and in the digital altimeter equipment.

ITEM 12

PERSONNEL


The following have accepted positions as a result of recent competitions:

- Competition 70-MET-HQ-25 - Meteorology MT 5 (Acting Appointment)  
Officer-in-Charge,  
Weather Office, Saskatoon  
- A.W. Cott
- Competition 70-PTAH-63 - Meteorology MT 8  
Head, Industrial Climatology Unit  
Meteorological Headquarters, Toronto  
- R.W. Verge

The following transfers took place:

E. W. Brandon	-	<u>To</u> W.O. Halifax <u>From</u> W.O. Gander
G. W. Hykawy	-	<u>To</u> W.O. Edmonton <u>From</u> CFB Cold Lake

By a re-allocation of duties in the Headquarters management of the Meteorological Communications System, Mr. A.C. Duffy has been designated Weather and Ice Service Communications Officer. His responsibilities, among others, will include planning and coordinating special facilities for transmission of meteorological information from local services to users and providing staff support to managers, Headquarters and Regional, in matters pertaining to user service communication systems.



*for* J. R. H. Noble  
Administrator  
Canadian Meteorological Service