

UNITED STATES DEPARTMENT OF COMMERCE
WEATHER BUREAU
WASHINGTON

June 28, 1963

IN REPLY, PLEASE ADDRESS
CHIEF, U. S. WEATHER BUREAU
WASHINGTON 25, D. C.
AND REFER TO

C-3.1

MEMORANDUM

TO : Area and State Climatologists, NWRC, Field Aides (HC), Field Aides, River Forecast Centers, River District Offices, Regional Substation Management Units, and Area Hydrologic Engineers (with copies to Regional Administrative Offices, Agricultural Service Offices, and Agricultural Forecast Offices for information)

FROM : Director, Climatology

SUBJECT: Climatological Services Memorandum No. 100

1. CSM NO. 100: The magic number 100 on this issue prompts a few editorial words. On December 15, 1948, number 1 ventured forth. Since that time these memoranda have served as a link between the various groups of the Bureau's climatological service.

The purpose has been, in the past and will remain in the future, to have an informal means of communications between the Office of Climatology and field personnel. We have also used this medium to summarize from time to time the status of our program and of special endeavors in climatology.

The fifteen years since the first appearance of CSM have seen many changes. We have gone through a whole cycle of automation. We have started the program of Area and State Climatologists. We have strengthened the cooperative observer system.

There are many goals still to be attained. The messages in the CSM will act as an occasional stimulus for action. We look forward to joint efforts by all our collaborators in the states, at NWRC, and in O/C toward bringing about a continuously improved climatological service for the benefit of the public.

2. MINUTES OF 15TH MEETING OF COMMITTEE ON CLIMATOLOGY ADVISORY TO THE U.S. WEATHER BUREAU: The Committee met on 28 May 1963 in Room 102, Blake Hall, College of Agriculture, Rutgers University, New Brunswick, New Jersey, at 0900 hrs. The following were in attendance:

Dr. William E. Reifsnyder, Yale University (Chairman)
Dr. John R. Mather, University of Delaware
Dr. Douglas B. Carter, Syracuse University
Dr. Norman J. Volk, Purdue University
Prof. A. Vaughn Havens, Rutgers University
Dr. H. E. Landsberg, Office of Climatology, USWB

A. The Committee first discussed the draft of the Guide to U. S. Climatic Data Sources. This project had been suggested by the Committee at its 14th meeting. Members of the Committee made a number of editorial suggestions but expressed its pleasure at this valuable reference book.

The Committee requested that the draft remain open for further suggestions until the middle of June 1963 and that it be printed at the earliest practicable moment.

The Committee expressed the view that it would be desirable to have as a companion piece a guide to published maps depicting climatic elements over the United States.

B. The compilation of World Weather Records for the interval 1951-1960 is now underway. 109 foreign countries have been circularized to correct data now available at the National Weather Records Center and furnish missing information. The World Meteorological Organization at its April 1963 Congress in Geneva, Switzerland, formally adopted a resolution to sponsor this publication and urged all member nations to help the U. S. Weather Bureau in its compilation.

The Committee noted the progress report on this important undertaking.

C. Dr. Landsberg briefed the Committee on several new developments in the current research program.

(1) A cooperative project is planned with the Boeing Aircraft Corporation to place hourly solar radiation data on magnetic tape and prepare various summarizations from this.

The Committee received this report favorably in view of the rather discouraging state of presently available solar radiation data, which are difficult to work with. The need for values approaching "normals" for solar radiation for agricultural purposes was stressed.

(2) FOSDIC II is nearing completion and further developments of this series of equipment using fiber optic scanning of the films is the next step envisaged.

(3) Power spectrum analysis of long climatic series is making good progress. Special emphasis in the past year has been on the biennial rhythm. Some results have been published and a further publication is in preparation.

(4) The Greenland project under Signal Corps' sponsorship has continued and several progress reports have appeared. A survey of Arctic climatic literature is also being prepared under the same sponsorship.

(5) Mr. Palmer's drought study has ended a major phase. Results were presented to the Lakeland meeting on Agricultural Meteorology of the American Meteorological Society. Drought probability calculations have now

been reduced to a computer routine. Analyses based on monthly values are probably about as informative as those resulting from daily or weekly data.

The Committee voiced the opinion that drought expectancy charts for the whole country would be a valuable contribution.

(6) The proposed upper air work on supersonic transport routes was briefly described. It was noted that the March 1964 Atlantic City meeting of the AMS will have a session on related subjects.

(7) Copies of the Berkeley Springs Climatic Summary as the prototype for the Resort Climate series were distributed. Others in preparation were mentioned.

The Committee welcomed this useful new series.

D. (1) Members were given the complete report of the postcard survey of subscribers and other recipients of LCD's with small subscription lists.

The Committee agreed that current uses fully warrant further publication of these data bulletins.

(2) The list of currently available climatic maps for the National Atlas was distributed. A discussion ensued whether or not it would be desirable to publish maps showing the various climates of the country. This would of necessity require the use of climatic classifications, which, of course, depend on the purpose. Perhaps the maps of one or more of the major classification schemes should be envisaged but the Committee did not formulate a firm recommendation.

(3) The discussion of the status of the urban climatic network led to consideration of suitable instruments for remote recording. Probably the least reliable equipment now available is for humidity recording purposes. It was suggested that dew point hygrometer using Peltier cooling might be better than presently installed models.

The problem of maintaining adequate standards of exposure at various sites was discussed. One Committee Member pointed out the encroachment problem by an air freight terminal on the Weather Bureau instrument shelter so that trailer trucks can park within 10 feet of the shelter.

The Committee reiterated the necessity of obtaining aspect photographs of all station sites showing the complete horizon around the station.

E. The Committee was briefed on the current status of budgetary submissions for climatological work in the Weather Bureau. An austere outlook for both FY 1964 and 1965 is indicated.

F. Prof. Havens discussed the desirability of years other than the calendar year for climatological summarizations. The Committee noted that the Weather Bureau already uses for certain purposes a heating degree

day-year, a hydrological year, and an agricultural year. As summarizations through the cooperative punch card programs (NC-26, NE-35, W-48, etc.) progress more data will become available on an agricultural year basis. The Committee welcomes this development. (Attention was called in this connection to the graphical presentation in the frontispiece of Sir Napier Shaw's "Drama of Weather"). The problem calendar reform might introduce into climatological data processing and continuity was briefly discussed.

G. The deliberations under the heading "Projected demand for Climatologists in next decade" can be best summarized under two categories. The first deals with educational requirements and facilities and job openings in the Weather Bureau. The projected figures in the decennial plan requiring 10 to 20 new professional climatologists per year in the future look reasonably accurate. Half of these might enter service at the bachelor's level and half at the master's level, with the idea that they will get further education to the next higher academic step after two or three years practical work. Curricula at the moment are not ideally geared to the type of education desired for State Climatologists and Research Climatologists. A broader outlook with courses other than meteorology is needed. Perhaps the natural resources programs now being inaugurated at several universities, including Rutgers, might be helpful. It was pointed out that nearly all present meteorological departments, with the exception of one or two, would have to go outside their own membership to get doctoral committees for Ph.D. candidates in climatology. Lack of certain basic textbook and manual material was also cited.

The Chairman requested Committee members to communicate with him in writing on this inadequate educational response to the over-all needs.

The second discussion dealt with the international aspects of the problem. Dr. Miller's written comments on the climatological recommendations of the CIPASH report were read.

The Committee agreed that there was less need for further conferences but that there were many broader aspects of the subject matter which deserve research emphasis. Applied climatology seemed particularly neglected and the Chairman will welcome further written comments, prior to June 15, 1963, which he will incorporate into a letter to the President of the National Academy of Science.

H. The Chairman briefed the Committee on the changes that have taken or are about to take place in the Earth Sciences Division of NRC, the parent group of the Committee. He also indicated his impending retirement from the Committee under the rotation policy.

I. The Committee briefly discussed plans for the fall meeting. It might be held either in Washington or at Boston AMS headquarters. A date early in November was envisaged. Details will be arranged later.

3. PRESIDENTIAL LETTERS TO LONG SERVICE COOPERATIVE OBSERVERS: President Kennedy signed letters of commendation, on April 26, 1963, to Mr. Louis Hardtla, cooperative observer for 61 years at Philo, Ohio, and to Mr. D. Paul Oswald, 60-year observer at Hagerstown, Maryland. Details of the services of these veteran observers may be found on pages 52 and 65 of "The Cooperative Weather Observer".

The letters were presented by Congressman Secrest (to Mr. Hardtla) and Congressman Sickles (to Mr. Oswald) with appropriate ceremonies. These letters are evidence of the importance of the cooperative observer program, and of the national interest in it.

4. SC LIAISON WITH FIRST ORDER STATIONS: In a recent progress report from a State Climatologist, it was indicated that all pertinent "weather" publications originated by or in cooperation with his office would be distributed to the Meteorologists in Charge. The intent is that all offices in his state be informed of SC activities and be alerted to possible inquiries that might come in from County Agents and others.

Other SC's might review their liaison with first order stations and make an effort to assure that pertinent materials receive full distribution. Also when visiting an MIC it might be appropriate to discuss selected climatological publications received during the last 2 or 3 years, i.e., decennial census publications, national atlas maps, substation summaries, letter supplements, regional publications (NC-26, etc.), experiment station bulletins, etc. These are often overlooked by the staff of a busy airport station. A discussion of background, plans, or suggestions for use in the public service program should be helpful and might lead to further exchanges concerning local climatic problems.

5. NO. OF PAGES IN CLIMATOLOGICAL PERIODICALS: Re: Item 11, CSM #92. The following table shows the number of pages of each of the climatological data publications printed during calendar years 1960, 1961, and 1962:

	<u>1960</u>	<u>1961</u>	<u>1962</u>
Storm Data	150	115	119
Miscellaneous	179	100	351
Mariners Weather Log	240	240	240
Weekly Weather and Crop Bulletin	416	416	416
Monthly Climatic Data for the World	527	498	459
Climatological Data, National Summary	705	740	696
Hourly Precipitation Data	4,286	4,608	3,808
Local Climatological Data, Monthly and Annual	4,652	5,045	5,648
Local Climatological Data, Supplement	5,246	10,232	10,824
Northern Hemisphere Bulletin	9,406	8,674	10,737
Climatological Data, States	<u>9,433</u>	<u>10,645</u>	<u>8,914</u>
TOTAL	<u>35,240</u>	<u>41,313</u>	<u>42,212</u>

6. FREEZE-FREE PERIOD: According to present procedures, July 1 is considered the breaking date between spring and fall freezes, and freeze-free periods are determined accordingly.

It has been pointed out that in a few cases a later breaking date gives a more realistic freeze-free period. For example, at Squa Pan Dam, Maine, the freeze-free period in 1961 is published in CD as 16 days while it actually was 77 days (from July 2 to September 17).

The suggestion has been made that August 1 be used to separate spring and fall. State Climatologists and others concerned with this problem are asked to comment. If the breaking date should be changed, what date should be used?

7. ARTICLES FOR NATIONAL WEEKLY WEATHER AND CROP BULLETIN: Re: CSM 90, Item 9. Mr. John Baldwin, Editor of the National Weekly Weather and Crop Bulletin would like more articles for the Bulletin. There are usually 2 or 3 issues per month with space where short well-written informative papers may be carried. Papers may range from 300 to 2000 words in length and should deal with climate or crops or have some relationship to weather or agriculture. They should be submitted through the Area Climatologist for his preliminary review.

This national bulletin is prepared jointly with the Statistical Reporting Service, hence stories by State Statisticians and others connected with agricultural activities are welcomed.

8. STATE AND AREA CLIMATOLOGISTS ON LEAVE: State and Area Climatologists planning to be absent on leave or travel for more than one week are reminded that it is very helpful to the Office of Climatology to know this in advance.

9. LCD ANNUALS: The importance of the unabridged version of the LCD annual was emphasized this year by the numerous requests received for the complete rather than the reduced issue. We are pleased that the value of this publication is so widely recognized. For 1963 we will return to a 4-page annual.

10. NEW AREA CLIMATOLOGIST: Mr. Milton L. Blanc of the Office of Climatology has been appointed to the vacant position of Southwestern Area Climatologist. He will enter on duty shortly after July 1, with an office on the campus of Arizona State University at Tempe. The Southeastern Area Climatologist office will eventually be moved from Fort Worth to a more central location with the southeastern area.

11. NEW STATE CLIMATOLOGISTS: The following changes in State Climatologists have been announced recently:

Maryland-Delaware: Mr. A. D. Peterson has left the State Climatologist job for the Air Weather Service Climatic Center. Mr. W. J. Moyer, formerly with the Air Weather Service, has been selected for the Maryland-Delaware position and expects to enter on duty about the middle of July.

Virginia: A full-time State Climatologist, Mr. Daniel L. Sala, has been selected as Virginia State Climatologist. Mr. Sala has been Principal Assistant at Richmond for some time, and will continue the State Climatologist's program from the WBAS there.

West Virginia: Mr. Robert O. Weedfall, research meteorologist at WBRS Las Vegas has been selected to be the first full-time State Climatologist for West Virginia. His office will be located on the campus of West Virginia University at Morgantown.

12. DECADAL CENSUS OF WEATHER STATIONS: For several years, as time permitted, the WRPCs worked on a series of maps presenting, at 10-year intervals from 1890 to 1950, the type and location of weather stations in existence. The last 22 completed issues of the maps (to be issued as No. 6.11 in the Key to Meteorological Records Documentation series) have now been sent to the printers.

Maps for the following states have not been completed. With the closing of the WRPCs, work has ceased on this project for the present.

California	New England
Idaho	Oklahoma
Michigan	Oregon
Minnesota	Texas
Nebraska	Washington

13. DISTRIBUTION OF PUBLICATIONS: A recent survey of publications mailing lists shows the following:

<u>Publication</u>	<u>Average No. of Paid Subscribers</u>	<u>Average No. of Free Recipients</u>
Climatological Data	74	631
LCD - Monthly	41	112
LCD - Supplement	37	109
Hourly Precipitation Data	5	67

There are 8 CDs, 21 LCD monthlies, and 27 LCD Supplements with 100 or more paid subscribers.

14. ABSTRACTS OF TECHNICAL PAPERS 1963 INTERNATIONAL SYMPOSIUM ON HUMIDITY AND MOISTURE: Copies of this abstract have been furnished to Area Climatologists. We did not get sufficient copies for all State Climatologists but do have a few that could be loaned to State Climatologists on request.

15. JEFFERSON AND HOLM AWARDS: Final selections have been made for 5 Jefferson and 23 Holm awards. Before long the completed certificates will be forwarded to the appropriate Meteorologists in Charge and State Climatologists along with a press release. The release date has not yet been established; last year it was on August 15.

The awards subcommittee wishes to thank all who initiated or reviewed the nominations. It was particularly helpful to have the citations prepared by the originating offices.

During the four years that the substation award program has been in operation 22 Jefferson and 103 Holm award recipients have been selected. A breakdown of the number by states follows:

<u>STATE</u>	<u>Jefferson</u>	<u>Holm</u>	<u>STATE</u>	<u>Jefferson</u>	<u>Holm</u>
Alabama	1		Nebraska	1	2
Alaska		1	New Hampshire		1
Arizona		6	New Mexico		2
Arkansas		1	New York		2
California		4	North Carolina	1	5
Colorado		2	Ohio	1	3
Connecticut	1		Oklahoma	2	3
Georgia	3	6	Oregon	1	2
Illinois	1	2	Pennsylvania		2
Indiana	2	3	Puerto Rico		1
Iowa	2	3	South Carolina		6
Kansas		6	South Dakota	1	2
Kentucky	1	1	Tennessee		2
Maryland	2	4	Texas		3
Massachusetts	1	2	Utah		3
Minnesota		1	Virginia		4
Mississippi		2	Washington		2
Missouri	1	5	Wisconsin		1
Montana		5	Wyoming		3

16. KEY TO METEOROLOGICAL RECORDS DOCUMENTATION SERIES: This series, designed to provide background information for research and other workers, and described in Chapter C-04, Volume III of the Weather Bureau Manual, has grown during the past years. There are now 97 separate publications, containing 5200 pages in the series.

This is an invitation to all readers of CSM to scan the outline of this series in paragraph III-C-0402 and to consider preparing any additions in which they may be particularly interested. In order to avoid duplication, arrangements should be made through O/C before any work is started.

17. WB FORM 612-14A "SUPPLEMENTARY RECORD OF CLIMATOLOGICAL OBSERVATIONS": Many private weather stations have, from time to time, been equipped with additional instruments beyond those needed for daily temperature and precipitation. Where such cases come to the attention of State Climatologists,

an effort should be made to obtain copies of the data. Form 612-14A has been designed for this purpose, and should be made available to interested observers.

Any data collected should be filed at State Climatologists' offices. We plan, when funds are available, to call these data into the NWRC for micro-filming so that the information may be generally available.

18. CLIMATIC SUMMARIES OF RESORT AREAS: CSM 97, Item 8 and CSM 91, Item 11 described our plans for the new series Climatic Summaries of Resort Areas. The first of these, for Berkeley Springs, West Virginia, has now been printed and distributed. Two more are "in the mill". One of these, for Saratoga Springs, New York, has started on its way to the printer and another for White Sulphur Springs, West Virginia, is in its final drafting stages. All three of these differ somewhat as to format and content and we welcome new ideas. We will be glad to have suggestions from State Climatologists for additions to this series. We have received a few already, and we would like to coordinate this for more efficient production.

19. PUBLICATIONS DISTRIBUTED TO STATE AND AREA CLIMATOLOGISTS SINCE CSM #98: "Weekly Precipitation Amounts for Kansas" by Dr. L. D. Bark, Kansas State University of Agriculture and Applied Science, Manhattan, Kansas.

"Problems in Climatology", edited by M. I. Budyko, Translated and Published for the National Science Foundation.

H. E. Landsberg
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GUIDE TO CLIMATOLOGICAL SERVICES
MEMORANDUM NO. 100

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