

UNITED STATES DEPARTMENT OF COMMERCE

U.S. WEATHER BUREAU
WASHINGTON

March 9, 1962

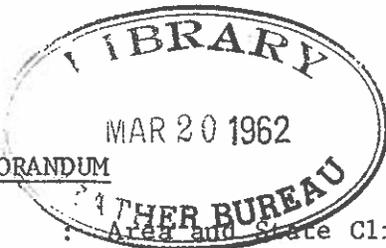
IN REPLY, PLEASE ADDRESS
CHIEF, U. S. WEATHER BUREAU
WASHINGTON 25, D. C.
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(Climatological Services Memorandum No. 92)

WASHINGTON, D. C.
3-9-62



MEMORANDUM

TO : Area and State Climatologists, NWRG, WRPCs, Field Aides (HC), Field Aides, River Forecast Centers, River District Offices, and Area Engineers (with copies to Regional Administrative Offices and Advisory Agricultural Meteorologists for information)

FROM : Director, Climatology

SUBJECT: Climatological Services Memorandum No. 92

1. IN MEMORIAM: Mr. Leslie Smith, one of the pioneers in Machine Methods in the Weather Bureau, died in Fort Worth, Texas, on February 3, 1962.

At the time of his death he was in charge of the San Francisco Weather Records Processing Center. In the late 1930s he was instrumental in development of the New Orleans Tabulation Unit which later was responsible for much of the climatological data summarization for the military services during World War II. Later he was instrumental in the development of the Weather Records Processing Center and served as Director of the National Weather Records Center in Asheville, N. C., from 1951 to 1958.

2. SW AREA SC's MEET: The 4th SC meeting was held at the Fort Worth Regional Administrative Office on January 31, February 1-2. In attendance were W. C. Hickmon of Arkansas, P. C. Kangieser of Arizona, J. W. Berry of Colorado, G. F. Von Eschen of New Mexico, S. G. Holbrook of Oklahoma, R. B. Orton of Texas, and E. Arlo Richardson of Utah-Nevada. A. C. K. Vestal arranged the program and L. A. Joos represented the Office of Climatology. Leslie Smith represented the San Francisco WRPC but G. E. Stegall of the Kansas City WRPC was unable to attend because of illness.

The agenda included discussions of routine items such as public service, severe storm reporting, WRPC relationships, network problems, etc. The non-routine subjects discussed included items such as the variation of freeze date variance with altitude, efficiency of evaporative air coolers, accuracy of airport temperature measurements, extreme value statistics, and the gamma distribution. Problems connected with the county soil survey reports were thoroughly discussed (see Item 5 of this issue). A discussion of possible cooperative projects for the SW Area left the impression that the problems to be solved were much too diverse for a general attack and that informal discussions or coordination between neighboring SC's would be a more productive approach.

The discussion of arid zone climatology dealt mainly with analysis of data in a dry climate and the moisture stress problems of irrigated areas. The

principal macro-scale mountain factors such as dessication, shielding and damming, cyclolysis and cyclogenesis, etc., are well understood but added to these we have the meso-scale factors of elevation differences, slope, upslope and downslope winds, air drainage, snow pack, hailstorms, etc. Representativeness and completeness of observations is a constant problem but since one could never hope to collect data from all areas, both deductive and inductive schemes must be used to obtain the climatological patterns required. State Climatologists experienced in the western states have many interesting and challenging problems on which to focus attention.

3. A RESEARCH REPORT: "Estimation of Soil Moisture under Corn" has recently been written by Dr. Robert H. Shaw. This is a report covering the Weather Bureau - Iowa State University research agreement No. Cwb 10019.

This report reflects some excellent work and improves the method first outlined in Park II of Cwb 9560. The highlights of the report are that soil moisture is estimated for an average of 15 to 20 sites in Iowa for each year 1954-1960. These estimates are for the top 6 inches, the next 6-inch layer and each 1-foot layer thereafter to a depth of 5 feet. The computed soil moisture has been compared with the results of the Iowa soil moisture survey which has been made in about April, June, August and November since 1954. The accuracy of the computational scheme is about the same as the accuracy of the gravimetric soil moisture sampling itself. During the April-June period water loss is assumed to be a constant 0.10 inch per day from the top layer. During the other two periods evapotranspiration is computed as a function of daily average pan evaporation adjusted for soil moisture stress and stage of corn growth. An interesting runoff correction is included.

In the past the Office of Climatology has arranged for our cooperating Universities to supply sufficient copies of a report to permit distribution to all State and Area Climatologists. However, recent contracts have specified that the Weather Bureau receive only a few copies, but with the understanding that we are to receive 75 reprints of any portion of the report which the cooperator may see fit to publish. The University plans to reprint this report as an Experiment Station Bulletin. As a consequence, Dr. Shaw has prepared only a modest number of copies of his report on Cwb 10019, but has informed us that he will have some copies available for those who are sufficiently interested to ask him for a copy. His address is: Dr. Robert H. Shaw, Department of Agronomy, Iowa State University, Ames, Iowa.

4. INTERNATIONAL JOURNAL OF BIOMETEOROLOGY: This publication is issued by the International Society of Biometeorology and covers the following subjects:

- 1) Critical reviews and surveys of world literature of high standard in special fields and problems of Biometeorology.
- 2) Short papers on original research which is of international interest.
- 3) Summaries of completed biometeorological studies which have been published in full by the author(s) in any other scientific periodicals.
- 4) Short reports on research in progress in order to stimulate team work between research workers in different parts of the world.

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Fagan
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See also*

- 5) Abstracts of important articles and book reviews.
- 6) Summaries of activities, symposia and congresses of national and international organizations dealing with biometeorological subjects.
- 7) Reports from the Chairmen of the special scientific committees of the Society.
- 8) Information on dates and programs of symposia and congresses related to biometeorological subjects.
- 9) Advertisements of scientific firms of good standing.

Under Item 5, this office will serve as a collecting, screening and forwarding center for abstracts of published articles related to biometeorology written by Area, State and other climatologists. Whenever such an article is published it will be the responsibility of the author to furnish O/C, attention Bioclimatology Section, a suitable abstract complete with information on the title, issue and page numbers of the publication.

This abstract should be in addition to the one forwarded to us when the paper comes in for review (see CSM 83, Item 2), since the information concerning publication is not available at that time, and the abstract may have been revised before publication.

5. COUNTY CLIMATIC SUMMARIES: The preparation of the climatological portion of the SCS county soil surveys is progressing smoothly in most states but there have been a few accelerated programs which require summaries at greater rates than the State Climatologists are able to handle with available resources. We are reluctant to set any rules or standards of production and therefore suggest that any problems of scheduling or workload be referred to the Area Climatologist. State Climatologists should not hesitate to seek support from the local or state SCS in the preparation of data tabulations. Lack of such support may require adjustment as to the type of summary prepared and again the Area Climatologist can give assistance.

The question is occasionally raised as to preparation of these data summaries by machine methods at NWRC. This might be feasible if the pertinent records were all available on cards, if a number of summaries could be scheduled in a group, and if adequate support were available from a single source. Few if any of these requirements are met in this program. It is also true that in many cases this sort of piece-meal computational job is more efficiently performed manually than by machine even though both cards and machines may be available.

6. UNDERGROUND STORAGE OF MICROFILM: Arrangements have been made to use GSA underground storage space near Neosho, Missouri, to store duplicate microfilm files of weather data. The first shipment will go forward within the next few weeks. The Neosho OCDM Warehouse was activated in June 1957 and the government area consists of 140,000 square feet. Guard service is maintained around the clock. Relative humidity is controlled at between 45% and 55%; temperature at about 61° F and movement of air at 7 miles per hour. GSA will withdraw any of our material at our request. The only cost to the Weather Bureau for use of this facility is for shipping of our material to and from Neosho.

JW
JPW

7. R&D PROJECTS AT NWRC: With the designation of State Climatologists in the field it has always been our hope to provide them technical assistance by arranging to do some of their processing work at the NWRC. Unfortunately, shortage of funds has limited the amount of such work that could be accomplished.

With the designation of the climatological cost center in fiscal year 1960 we set aside a small fund with which we could undertake some of the more urgently needed tasks. More recently with the designation of certain funds for Research and Development we have held as unassigned a small fund which we hope to devote to the support of selected studies that can qualify as Research and Development.

Requests for assistance of this type should be submitted to the Central Office through the appropriate Area Climatologist.

8. COMMEMORATIVE POSTAGE STAMP: We have proposed to the Postmaster General that a commemorative stamp be issued on May 2, 1964, in commemoration of the 150th anniversary of the May 2, 1814 order by Surgeon General James Tilton.

That order, requiring all hospital surgeons to keep a record of the weather, was the first official action of the United States toward setting up a meteorological network.

9. DISTRIBUTION OF WEATHERWISE: The following instructions concerning the distribution of Weatherwise to cooperative observers have been issued to the WRPCs:

- 1) All copies should go to cooperative observers; none should be sent to Weather Bureau or State Climatologists' Offices, unless for redistribution to observers.
- 2) Regular recipients of Weatherwise should receive a regular purge card at least every two years. Perhaps the card could be stapled to the cover of the magazine so that it would not be overlooked. Those not returning the cards should be removed from the mailing list.
- 3) Weatherwise should go only to non-institutional observers. We do not want to be put in the position of buying Weatherwise for utility companies, other government installations and similar organizations.
- 4) When Weatherwise is first sent to an observer not previously receiving it a form should be included, asking the observer to indicate if he wishes to continue to get the magazine.

10. EXPANDED AGRICULTURAL METEOROLOGY PROGRAM IMPLEMENTED: The new agricultural weather services reported on in TOPICS for September 1961, page 155, are being rapidly implemented. Eleven new Advisory Agricultural Meteorolo-

gists have reported for duty. Most of this group have attended special courses at Iowa State University or at Rutgers. The assignments and addresses are given below. Most of the locations are at universities or branch experiment stations. At Michigan State University, Mr. Van den Brink shares an office with the State Climatologist. Note that Mr. Riley has moved from Stoneville to Memphis and now has an area responsibility.

We in the Office of Climatology welcome these new developments in the field of service to agriculture. Since we have worked with Experiment Stations, university officials, and the state agricultural statisticians for many years we are in a good position to assist the Advisory Agricultural Meteorologists in making contacts and in providing background information. Within available resources, State Climatologists should cooperate fully in making climatological data or services available to the new programs.

Since the new agricultural program is concerned with current advisories and forecasts, there should be no conflict with the climatological responsibilities of State Climatologists. There has been a full exchange of information and coordination at the Central Office level so as to avoid any suggestion of duplication or conflicting responsibility. If there are any questions at all in this regard, they should be referred to this office.

Addresses:

Ceel Van den Brink 1405 South Harrison East Lansing, Michigan	Donald J. Haddock Box 71 Weslaco, Texas	D. A. Downey Northeast Branch Experiment Station Kaiser Arkansas
Vincent J. Valli Georgia Coastal Plain Experiment Station Tifton, Georgia	Leonard Hand Southeast Missouri Experiment Station Portageville, Missouri	Oliver N. Newton Delta Branch Experiment Station Stoneville, Mississippi
John W. Measells West Tennessee Agricultural Exp. Station Box 386 Jackson, Tennessee	Lawrence C. Ranieri Blake Hall, Dept. of Meteorology Rutgers The State Univ. New Brunswick, N. J.	Walter L. Stirm West Virginia Agricultural Station Kearneysville, W. Va.
Aaron L. Zimmerman Oregon State University Atmospheric Science Br. Mines 6 Corvallis, Oregon	Creighton B. Nelson Twin Falls Branch Experiment Station Rt. 1, Kimberly, Idaho	J. A. Riley Weather Bureau Airport Station 2488 Winchester Memphis 14, Tennessee

11. NUMBER OF PAGES IN CLIMATOLOGICAL PERIODICALS: The following table shows the number of pages of various kinds of climatological data publications printed during calendar years 1960 and 1961:

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

Increase 6,073

Per Cent of Increase 17

12. NARRATIVE TEXT IN LCD ANNUAL SUMMARY: Re Chapter C-05, Vol. III, WB Manual. It is suggested that State Climatologists annually review the narrative summaries in the LCD Annuals from the assigned state areas. Any suggestions for revision or improvement should go to the MIC responsible for the particular LCD.

13. DEPARTMENT OF COMMERCE MERITORIOUS AWARD: Dr. H. L. Crutcher of the NWRC and Central Area Climatologist Robert F. Dale each received the Department of Commerce Meritorious Award (Silver Medal) on February 14 in a ceremony at the Department Auditorium. Presentation was made by Secretary of Commerce Hodges.

14. SPECIAL SERVICE AWARDS: Re Par. I-D-5107(e) of Vol. 1, WB Manual. Occasionally an observer at an institutional station will inquire about receiving a length of service award. Those emblems are intended primarily for observers at non-institutional stations. In lieu of the usual length of service award, the Special Service Award is adaptable for the recognition of an observer who has served for a number of years as an institutional observer. The citation would be something like "for ten (or other) years of service as climatological observer at the Beeville climatological substation operated by the John Doe Utility Co."

Since there are no WB records of service to verify, it will be up to the Field Aide to be alert for appropriate cases to be recognized. The Field Aide has authority to arrange for preparation and presentation of the

certificate. He should inform the WRPC so that the award may be mentioned in the Cooperative Observer newsletter.

15. STATE CLIMATOLOGISTS' HURRICANE REPORTS: New revisions of the WB Manual will be distributed soon and will clarify some hurricane procedures. In particular, Paragraph C-0838 will summarize reporting by SC's while Paragraph B-5019 will cover the activities of other units. In general the following steps are indicated when a hurricane affects a state area:

- 1) Mail out Forms 614-1; SC takes initiative.
- 2) Returned Forms 614-1 are duplicated with original to O/C and one copy to the Hurricane Forecast Center. This should be done within four weeks. If it is inconvenient to make copies at the SC office, a note with the original forms should ask O/C to take care of this.
- 3) Telegram from O/C to SC's in area probably affected gives schedule for sending preliminary reports for a story in Weekly Weather and Crop Bulletin.
- 4) Final report to O/C within four weeks. The summary in CDNS is based on these reports.
- 5) Report for publication in Storm Data.
- 6) Narrative for CD gives brief synopsis.

Please note that the telegram from O/C requests only a preliminary summary giving highlights over the state area. What is desired is a concise report of the situation as it appears to the SC located in the affected state area.

16. LIGHTNING FATALITIES - STORM REPORTING: A note from M. D. Magnuson, AC/NW, reports that the national average of lightning deaths for the years 1953-1957 is 175 per year. This is from the records of the Department of Health, Education and Welfare and based on death certificates. Earlier records from that Department included deaths from lightning-started fires and this tended to give too high a figure. The figure of 175 per year seems more realistic than earlier quotations which ran as high as 400 per year.

It is recognized that State Climatologists have limited resources of time and energy for severe storm reporting and that these preclude exhaustive searching or highly detailed reporting. However, where brief pertinent remarks are available these should be included for the benefit of research people. Frequently a number of local windstorms or thunderstorms can be combined into a single report through judicious use of remarks.

There is general agreement that many "storm fatalities" listed in newspapers should not be reported as such in Storm Data. Typical of these are traffic deaths where wet pavements are contributing factors rather than primary causes. Deaths due to over-exertion in shoveling snow or pushing stalled cars often should not be considered as storm deaths. Presumably a prudent person would usually have the option of driving more slowly or working less hard in situations which commonly occur.

17. PUBLICATIONS FURNISHED STATE AND AREA CLIMATOLOGISTS SINCE CSM No. 91.

"Weekly Precipitation and Temperature in Connecticut" by Gosslee and Brumbach.

Civil Defense Technical Bulletin 11-31, "Probability of Fallout Debris Deposition"

Flyer, "National Atlas of the United States"

"The Evapotranspiration Problem" by van der Bijl and Bock, Kansas State University

"Climate Made to Order" H. E. Landsberg, reprinted from the "Bulletin of the Atomic Scientists". Vol. XVII, No. 9, Nov. 1961

"Weather and Food" - WMO Basic Study No. 1

18. FOR WRPC: The following instruction has been issued to the WRPC: Effective with data for January 1962 please substitute the following for the ninth note in paragraph 1009.652 of Instructions dated April 15, 1959:

"Normals for all stations are climatological standard normals based on the period 1931-1960."

Also the following instructions, effective upon receipt, have been issued:

Par. 1009.652 - Change the note about monthly and seasonal snowfall and heating degree days to:

"Monthly and seasonal snowfall and heating degree days for the 12 months ending with the June data will be carried in the July issue of this bulletin. Annual seasonal precipitation for the 12 months ending with June data will be carried in the following July issue for Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming."

Par. 1009.673 - Change the first sentence to the following:

"Monthly and seasonal snowfall for the 12 months ending with the preceding June data should be carried in the July issue for all sections except Florida, the West Indies and Caribbean, Puerto Rico and Virgin Islands, Hawaii and Pacific. Annual seasonal precipitation for the 12 months ending with June data should be included in the following July issue for Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming."

Par. 1009.674 - Change the first sentence to read:

"Monthly and seasonal degree days for the 12 months ending with the preceding June data should be carried in the July issue for all sections except the West Indies and Caribbean, Puerto Rico and the Virgin Islands, Hawaii and the Pacific."

H. E. Landsberg
H. E. Landsberg

GUIDE TO CLIMATOLOGICAL SERVICES
MEMORANDUM NO. 92

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