

UNITED STATES DEPARTMENT OF COMMERCE
WEATHER BUREAU
Washington, D. C.
January 6, 1956

0-2.41

FILE: 922

MEMORANDUM

TO: Area and State Climatologists, Substation Inspectors, Field Aides, WRPCs, River District Offices, and Area Engineers.
(With copies to Regional Offices for information)

FROM: Climatological Services Division

SUBJECT: Climatological Service Memorandum No. 51

MEMO

GENERAL

1. REPORT ON FILLING STATE CLIMATOLOGIST JOBS:

(CLIMATOLOGICAL SERVICES MEMORANDUM NO. 51)

There are now about 25 full-time State Climatologist jobs set up, and for the most part filled. We will continue to establish full-time jobs where the need exists and as funds become available. During the current fiscal year it does, however, not appear that more of these new jobs will be set up.

Vacancies will be filled as they occur, and we wish to thank all those who have applied for jobs in Climatology. These applications are being retained, and will be considered as vacancies develop.

The following changes have been approved since the list in CSM 50 was published:

Illinois - Mr. L. A. Joos will replace Mr. Paul F. Sutton as Illinois State Climatologist at Champaign.

Indiana - Mr. Lawrence A. Schaal, location at Purdue University, Lafayette.

Maryland - Delaware - Mr. Howard Englebrecht with headquarters at Baltimore.

Montana - Mr. Richard A. Dightman, Helena.

New England - This section has been divided into "Northern and Central" and "Southern New England". Dr. A. Boyd Pack has been selected as State Climatologist for Southern New England (Conn. and Rhode Island), to be located at WBAS, Windsor Locks, Conn. Mr. Paul Kangieser is to go from Boston to Phoenix, Arizona as Arizona State Climatologist. Mr. R.E. Lautzenheiser will go to Boston.

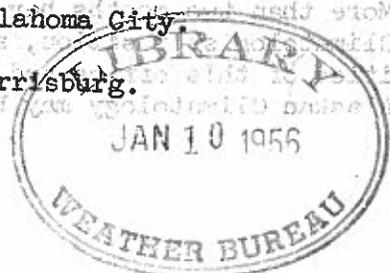
Oklahoma - Mr. Hugo V. Lehrer, located at WBAS, Oklahoma City.

Pennsylvania - Mr. Nelson Kauffman, located at Harrisburg.

Texas - Mr. Richard Blood, located at Austin.

Wisconsin - Mr. Paul J. Waite, located at Madison.

WASHINGTON, D. C.
1-6-56



2. PROGRESS REPORT ON SUBSTATION SUMMARIES:

As a matter of interest there are listed below the number of substation summaries completed and issued to date;

Alaska	11	New Mexico	1
Arkansas	6	North Carolina	2
Colorado	2	Oregon	3
Florida	4	South Carolina	5
Illinois	3		
Montana	2		

TOTAL 39

We expect that, with an increase in the number of full-time State Climatologists, the coming year will see a large-scale surge in the output of these summaries.

The quality of issue so far has been generally high. The response of local users, civic organizations and newspapers has been consistently favorable. These results emphasize, therefore, our responsibility to guide the production to the highest possible point of accuracy. Thus, in order to avoid any increase in the few typographical errors that have appeared it would be well, if possible, for State Climatologists to arrange for a final proofing of manuscripts before printing.

3. DISTRIBUTION OF SUBSTATION SUMMARIES:

Whenever a substation summary is printed the State Climatologist should see that a copy is made available to each public school in the community. Distribution can probably best be arranged through the Superintendent of Schools.

4. CLIMATOLOGICAL BIBLIOGRAPHY:

State Climatologists are urged to initiate a program aimed at the ultimate purpose of obtaining a complete climatological bibliography for the state. It is realized that many former Section Centers and first-order stations have done considerable work along this line but it would be appropriate to have a complete bibliography as a working tool in the State Climatologists office.

5. REPORT FROM ALASKAN TERRITORIAL CLIMATOLOGIST:

The following report of general interest has been received from Mr. C. E. Watson, Alaskan Territorial Climatologist:

More than two months have passed since my assignment to the Alaskan Climatologist position, and I realize that a report of the general activities of this office and my concept of the basic problems confronting Alaskan Climatology may be somewhat overdue.

I came to Alaska quite open minded, with a very limited preconceived notion of the nature of the country, due to the somewhat conflicting reports I had been given by different persons who had been in the Territory. In general the Territory has measured up to the few definite expectations I held prior to my arrival. In at least two respects these expectations have been exceeded: First, I have found in my rather restricted travel in the Territory that a definite concept of the natural beauty of this country is difficult to obtain from pictures or narrative descriptions. Secondly, the vastness of the Territory, with its varied climatic conditions appears more impressive now that I am directly associated with it. About three weeks ago I made a trip down the Kenai Peninsula, which is an important frontier area with great potential possibilities. After my return a little investigation revealed that this relatively small Alaskan area is almost as large as Massachusetts and is slightly larger than the combined areas of Connecticut and Rhode Island. There are several such geographical areas in the Territory with considerably localized climatic conditions.

The importance of climate as a marginal factor in the economy of Alaska is becoming increasingly apparent. Whenever opportunity has afforded I have discussed these marginal climatic effects with the somewhat specialized interests seeking climatological data from our office, and have found many interesting facts about the effects of small changes in climatic conditions. Small marginal changes appear to be of particular importance to the fishing and agricultural industries in the area. For example, representatives of the Fisheries Research Institute indicate that small differences in temperature in certain key coastal areas and in adjacent water temperatures have a critical effect on the growth and relative abundance of plankton upon which salmon habitually feed. The scarcity or abundance of plankton in feeding areas not only determine the migration of fish to these areas but, apparently, tend to influence the migration of salmon in the open ocean areas. These migrations, in turn, have a basic influence on the shifts in community and urban centers which rely almost entirely upon commercial fishing activities.

The limited travel I have accomplished in the agricultural areas of Alaska, together with discussions with some of the agricultural leaders, points out the importance of climatic changes to agricultural interests here. Small differences in temperatures, particularly during critical growing periods, can be of the utmost importance in determining profit or loss in practically all agricultural crop production now carried on in the Territory. Much is being done at present to develop varieties of crops that will mature under the particular climatic and soil conditions available. Of these two factors I'm inclined to think that the climatic environment is, generally, the more important; for there are important soil areas, like the Kenai Peninsula, which appear to provide ample quantities of soil fertility for rather luxuriant vegetation growth where crop adaptation will be concerned, chiefly, with climatic factors. Although much may be done to adapt special varieties to the varied climatic and soil conditions of Alaska, there are indications that the trend of agricultural experimentation is beginning to turn toward the investigation of general crop types which are particularly adapted, or can be most easily adapted, to the existing climatic conditions. In either case the trend is toward specialized crop production in which compiled climatological data will be of increasing importance.

The development of potential power resources in Alaska is just beginning to present weather record problems which have been anticipated in this area for some time. Some developments, such as the Bureau of Reclamation Eklutna Project in the Anchorage area, have been undertaken with very little accumulated precipitation data to indicate potential runoff from drainage areas. Perhaps this phase of weather data collection lies more in the field of hydrology than climatology; but, for the present at least, it is a problem which merits consideration from the climatological viewpoint. The Eklutna project was designed for a maximum output of some 30,000 to 35,000 KW. During the recent official investigation of Alaskan economic needs and potentials the U. S. Engineers presented to the committee rough proposals of potential power sources in Alaska with some single sources listed with potential capacities around or exceeding 1 million KW. These may be visionary and considerably in the future; but, as was pointed out in my recent discussion with the District USE Office, future undertakings of this nature will require, as basic information, record data on precipitation in the drainage basins in order to properly estimate potential runoff. Recent investigations dealing with rainfall intensities in Alaskan areas, however, are providing a sound basis for precipitation intensity estimates. Nevertheless, an enthusiastic effort to develop the power resources of Alaska may soon materialize, and there may be an avalanche of inquiries concerning precipitation in drainage basins where few, if any, records are now available. This matter involves, of course, the rather ticklish problem of the extent of cooperation to be extended by the Weather Bureau to other agencies. I have no concrete proposals to offer on this matter at this time, but merely wish to express my awareness of the potential demands for climatological data which may be forthcoming in the future because of such developments.

We are realizing considerable progress in making our compiled data more readily available through the card-cataloguing of available data begun a few weeks ago. Practical benefits in this direction are limited, of course, and will be quite fully exploited once the cataloguing has been completed and is maintained on a current basis. We expect to concentrate our efforts toward this objective during the Winter Season as time permits. In the meantime every possible effort will be made to improve the quality and, wherever practicable, the quantity of data from reporting sources.

A somewhat longer term objective is the increase in reporting sources for the Territory. This problem, perhaps, presents the most difficult challenge, for there is little in the foreseeable future to alter the continued transient nature of many of the Alaskan reporting sources. The gradual expansion of air travel in the Territory, with an increasing number of scheduled landing points, provides some basis for increased reporting sources of a somewhat permanent nature. But the exploitation of natural resources -- particularly of mining and oil and gas development in remote areas -- will provide, as it has in the past, data sources which are likely to be of a somewhat transient nature. We cannot completely overlook the value of such time limited sources of data, however, if we are to bridge some of the extensive space gaps in our climat record data. The expansion of stations into remote areas, however, does have its practical limits, chief of which is the expense of establishing stations where limited periods of record can be anticipated and from which the recovery of established instrumental equipment does not justify the expense involved. We have given considerable thought to this problem and have concluded that the practical solution must lie in finding a more economical means of

establishing substations and reducing the losses realized when stations established in remote areas are terminated.

Since my arrival in Anchorage I have made a considerable number of personal visits to the offices of other agencies in the area, including the District USE Office, the USGS, the 7th Weather Group Office, the Bureau of Reclamation, and local offices of the Department of Agriculture Extension Service. During these visits the problems of the collection of climat data and its application to the work of these respective agencies have been discussed, and much mutual benefit was realized. In this connection I am enclosing copies of written reports submitted to the Regional Director dealing with travel completed on Regional Travel Orders. Unless requested by your office, or the office of the Northwest Area Climatologist, such copies will not be forwarded in the future. I am enclosing them at this time to give you a little more insight into my initial activities since arriving in Anchorage.

Just a word on the personal side: My wife and I have found Anchorage, so far, a rather desirable place to live. We have not, of course, been here through the winter season and would prefer to reserve final judgment until we have remained here through that season of the year. As the matter now stands we see little in Alaska to make it an undesirable place to remain for some time.

An important consideration which will affect any decision I may make in this matter is my rather firm conviction that a considerable amount of long-term planning is necessary if the office of Climatologist here is to be maintained at a high level of efficiency and render the service for which it is designed. A prerequisite for sound long-term planning is personal familiarization with the complexities of Alaskan Climate and an understanding of the relative importance of the varied climatic areas. A short period of assignment here is insufficient to gain this necessary familiarization and certainly fails to provide the proper perspective so necessary for sound long-term planning. I hope to be able to continue the progress realized in the past few years and build constructively for the future; but I am aware that, particularly in Alaska, progress will continually be accompanied by complex day to day problems which require almost constant attention.

6. DISTRIBUTION OF STATE (OR SECTION) MAPS:

Distribution of the large (17 x 22) and small (8-1/2 x 11) state maps, heretofore done by the WRPCs, will now be handled by the NWRC. All recipients of this memorandum should inform the NWRC as to their regular requirements of each size map for their state in order that they may be supplied automatically each time there is a revision.

7. SUBSTATION NORMALS PROGRAM: (Reference CSM 49, Item 11)

We would like to announce that a detailed procedure for the estimation of missing average monthly temperatures has been provided the WRPC's whereby normal temperatures may be derived for many substations for which data have heretofore been insufficient for the purpose. The purpose of this statement is to furnish State Climatologists general information on the subject in case they are queried concerning the interpolation method used.

The interpolation procedure, which is sufficiently accurate only for the purpose of computing 25-year normals in cases where the station records do not have a large number of omissions, is based upon the temperature differences from month to month in the same year and within the same month from year to year at surrounding control stations which possess similar elevations and exposures. These temperature differences at the control stations are used along with existing temperature data at the station of incomplete record for months which are adjacent to the missing month. The method yields four separate estimates of temperature for the missing month which are then averaged to obtain a final estimate.

In general, the temperature estimated by this procedure will differ by less than one degree from the true average temperature for the month. It is important, however, that all monthly temperatures used in the interpolation procedure are derived from complete sets of daily observations; Bureau practice has always allowed monthly temperatures to be computed despite as many as 9 days of missing observations, and these are not sufficiently reliable for purposes of interpolation. In cases where consecutive months of the same year have missing temperatures, these temperatures may be estimated for not more than 12 of the months. In cases where data are missing for the same calendar month of successive years, monthly temperatures may be estimated for not more than 5 consecutive months, and a total of 7 months, of the same name.

Details of the interpolation method will be given in a forthcoming chapter of the Weather Bureau Manual.

8. CIRCULAR B, REVISED:

Circular B, "Instructions for Climatological Observers," 10th Edition, reprinted and revised as of October 1955, is available for distribution. The principal changes in this issue were made in Chapter 4, "Evaporation Station Observations", and consist primarily of the addition of instructions for the use of the fixed-point gage for measuring amounts of water evaporated. Some changes in specifications for the evaporation station layout and for the fabrication of the pan were also made. Minor corrections were made to bring other chapters up to date. This issue does not replace the 10th Edition, November 1952. Copies are obtainable through the regional offices.

9. PRECIPITATION GAGE SHIELDS:

The Bureau is obtaining some new Alter type precipitation gage shields, and we hope not merely to replace old damaged shields on an emergency basis but to equip all gages that need shields.

It is important when a gage shield is installed, removed, repaired significantly or replaced that the change be promptly reflected in published CD or HPD. WRPCs should reflect these changes (shown on the inspection reports or WBAN LODs) in the next issue of CDs and should advise the NWRC in cases requiring a note in HPD.

10. THERMOGRAPHS AT SUBSTATION:

Item 1, CSM 35 dated April 15, 1953 is hereby rescinded and revised instructions on this subject will soon be issued.

11. FORWARDING COPIES OF WEIGHING RAIN GAGE CHARTS TO SUBSTATION INSPECTORS:

The brief scanning at the WRPC of weighing gage charts will occasionally disclose cases where careless or misunderstood procedures by the observer result in a poor record. These cases are not always readily explainable in writing when the appropriate substation inspectors are advised. We believe that the inspector would be aided considerably in some instances by having a copy of the chart. This would help him to a proper deduction of the cause for the poor record, whether faulty mechanism of the clock or gage, or observer failure.

We have suggested to the WRPC's, therefore, that in cases where it may help, a copy of the chart made from their transcopy equipment be forwarded to the inspector along with the written notification.

12. OCCUPATIONS - ARKANSAS COOPERATIVE OBSERVERS:

The tabulation listed below is interesting in that it shows occupations of the cooperative weather observers in the State of Arkansas. This tabulation was prepared by Mr. Jewell Wheeler, Substation Inspector.

Small business owners or employees (store-keepers, merchants, service- stations, store clerks, etc.).....	36
Housewives.....	35
Governmental (State or Federal) Agencies or employees:	
Forest Service.....	19
Postmasters or postal employees.....	10
Other Federal Agencies (CAA, SCS Corps of Engineers, etc.).....	23
University of Arkansas.....	10
State employees.....	3
Utility Company employees (light, gas, water, oil & pipeline).....	18
Farmers or plantation owners.....	15
Professional - including lawyers, college professors, teachers, clerics).....	13
Retired.....	9
Railroad employees.....	6
Newspaper editors or employees.....	5
Police and Fire Department employees.....	4
Truckers.....	2

GUIDE TO CLIMATOLOGICAL SERVICES MEMORANDUM NO. 51

Item No. Page No.

GENERAL

1.	REPORT ON FILLING STATE CLIMATOLOGIST JOBS.....	1
2.	PROGRESS REPORT ON SUBSTATION SUMMARIES.....	2
3.	DISTRIBUTION OF SUBSTATION SUMMARIES.....	2
4.	CLIMATOLOGICAL BIBLIOGRAPHY.....	2
5.	REPORT FROM ALASKAN TERRITORIAL CLIMATOLOGIST.....	2-5
6.	DISTRIBUTION OF STATE (OR SECTION)MAPS.....	5
7.	SUBSTATION NORMALS PROGRAM.....	5
8.	CIRCULAR B, REVISED.....	6
9.	PRECIPITATION GAGE SHIELDS.....	6
10.	THERMOGRAPHS AT SUBSTATION.....	6
11.	FORWARDING COPIES OF WEIGHING RAIN GAGE CHARTS TO SUBSTATION INSPECTORS.....	7
12.	OCCUPATIONS - ARKANSAS COOPERATIVE OBSERVERS.....	7-8
13.	DEPARTMENT ORDER NO. 77.....	8
14.	<u>FOR WRPC's</u>	
	AMENDMENTS TO PROCEDURES.....	8

MEMORANDUM FOR THE DIRECTOR

Subject:

Date:

Summary:

- 1. The purpose of this memorandum is to inform you of the results of the investigation conducted by the FBI on the activities of the [redacted] in the [redacted] area.
- 2. It is noted that the [redacted] has been active in the [redacted] area since [redacted].
- 3. The [redacted] has been identified as a [redacted] of the [redacted] organization.
- 4. The [redacted] has been identified as a [redacted] of the [redacted] organization.
- 5. The [redacted] has been identified as a [redacted] of the [redacted] organization.
- 6. The [redacted] has been identified as a [redacted] of the [redacted] organization.
- 7. The [redacted] has been identified as a [redacted] of the [redacted] organization.
- 8. The [redacted] has been identified as a [redacted] of the [redacted] organization.
- 9. The [redacted] has been identified as a [redacted] of the [redacted] organization.
- 10. The [redacted] has been identified as a [redacted] of the [redacted] organization.
- 11. The [redacted] has been identified as a [redacted] of the [redacted] organization.
- 12. The [redacted] has been identified as a [redacted] of the [redacted] organization.
- 13. The [redacted] has been identified as a [redacted] of the [redacted] organization.
- 14. The [redacted] has been identified as a [redacted] of the [redacted] organization.

Recommendation:

It is recommended that the [redacted] be [redacted] by the [redacted] office.