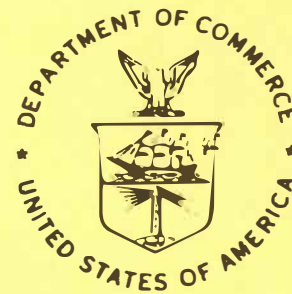**NOAA WESTERN REGION COMPUTER PROGRAMS
AND PROBLEMS NWS WRCP NO. 64**

RECORDS/NORMALS FORM PROGRAM FOR CLI.EXE PROGRAM

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Boise, Idaho

June 1996

PREFACE

This Western Region publication series is a subset of our Technical Memorandum series. This series will be devoted exclusively to the exchange of information on and documentation of computer programs and related subjects. This series was initiated because it did not seem appropriate to publish computer program papers as Technical Memoranda; yet, we wanted to share this type of information with all Western Region forecasters in a systematic way. Another reason was our concern that in the developing AFOS-era there would be unnecessary and wasteful duplication of effort in writing computer programs in National Weather Service (NWS). Documentation and exchange of ideas and programs envisioned in this series hopefully will reduce such duplication. We also believe that by publishing the programming work of our forecasters, we will stimulate others to use these programs or develop their own programs to take advantage of the computing capabilities AFOS makes available.

We solicit computer-oriented papers and computer programs from forecasters for us to publish in this series. Simple and short programs should not be prejudged as unsuitable.

The great potential of the AFOS-era is strongly related to local computer facilities permitting meteorologists to practice in a more scientific environment. It is our hope that this series will help in developing this potential into reality.

NOAA WESTERN REGION COMPUTER PROGRAMS AND PROBLEMS NWS WRCP

1 Standardized Format for Computer Series. Revised January 1984. (PB85 109668)

2 AFOS Crop and Soil Information Report Programs. Kenneth B. Mielke, July 1979. (PB85 110419)

3 Decoder for Significant Level Transmissions of Raobs. John A. Jannuzzi, August 1979. (PB85 109676)

4 Precipitable Water Estimate. Elizabeth Morse, October 1979.

5 Utah Recreational Temperature Program. Kenneth M. Labas, November 1979.

6 Normal Maximum/Minimum Temperature Program for Montana. Kenneth B. Mielke, December 1979. (PB85 112878)

7 Plotting of Ocean Wave Energy Spectral Data. John R. Zimmerman, December 1979. (PB85 112860)

8 Raob Plot and Analysis Routines. John A. Jannuzzi, January 1980.

9 The SWAB Program. Morris S. Webb, Jr., April 1980. (PB80 196041)

10 Flash-Flood Procedure. Donald P. Laurine and Ralph C. Hatch, April 1980. (PB80 298658)

11 Program to Forecast Probability of Summer Stratus in Seattle Using the Durst Objective Method. John R. Zimmerman, May 1980.

12 Probability of Sequences of Wet and Dry Days. Hazen H. Bedke, June 1980. (PB80 223340)

13 Automated Montana Hourly Weather Roundup. Joe L. Johnston, July 1980. (PB81 102576)

14 Lightning Activity Levels. Mark A. Mollner, July 1980. (PB81 108300)

15 Two FORTRAN Applications of Wind-Driven Ekman Water Transport Theory: Upwelling Index and Storm Tide. Kent S. Short, July 1980. (PB81 102568)

16 AFOS System Local Data Base Save and Rebuild Procedures or a Master Doomsday Program. Brian W. Finke, July 1980. (PB81 108342)

17 AFOS/RDOS Translator Subroutine. Morris S. Webb, Jr., August 1980. (PB81 108334)

18 AFOS Graphics Creation from FORTRAN. Alexander E. MacDonald, August 1980. (PB81 205304)

19 DATAKEY0/ Repair Program. Paul D. Tolleson, August 1980. (PB81 102543)

20 Contiguous File Transfer from the DPCM to the DCM. Paul D. Tolleson, September 1980. (PB81 128035)

21 Freezing Level Program. Kenneth B. Mielke, September 1980. (PB81 128043)

22 Radar Boresighting Verification Program. Thomas E. Adler, November 1980. (PB81 182677)

23 Accessing the AFOS Data Base. Matthew Peroutka, January 1981. (PB81 190266)

24 AFOS Work Processor. Morris S. Webb, Jr., February 1981. (PB81 210007)

25 Automated Weather Log for Terminal Forecasting. John A. Jannuzzi, February 1981. (PB81-210999)

26 Program to Computer Downwind Concentrations from a Toxic Spill. John R. Zimmerman, February 1981. (PB81 205296)

27 Animation of AFOS Graphics. James R. Fors, August 1987 (revision). (PB87 220109/AS)

28 AFOS Interactive Graphics. James R. Fors, Don Laurine, and Sandy MacDonald, April 1981. (PB85 110401)

29 Computer Programs for Aviation Forecast Transmission. Kenneth B. Mielke and Matthew R. Peroutka, May 1981. (PB85 110518)

30 AFOS Product Collective Program. Morris S. Webb, Jr., September 1981. (PB85 109841)

32 Automation of Hourly Aviation Observation Calculations. W. Paul Duval, October 1981. (PB85 109650)

33 Mesoscale Objective Analysis. Andrew J. Spry and Jeffrey L. Anderson, December 1981. (PB85 109825)

34 Orographic Snowfall Rate Model for Alta, Utah. Steven K. Todd and Glenn E. Rasch, December 1981. (PB85 109874)

35 F-6 Monthly Climatic Summary Program For AFOS. Peter G. Mueller, May 1982. (PB85 109858)

36 Soaring Forecast Program. D.S. Toronto and G. R. Lussky, Revised March 1986. (PB86 173523/AS)

37 Program to Work Up Climatic Summary Weather Service Forms (F-6, F-52). Peter G. Mueller, August 1982. (PB85 109866)

38 The Hovmoller Diagram. Pamela A. Hudadoff, September 1982. (PB85 112159)

39 850-Millibar Charts Derived from Surface Data. Jeffrey L. Anderson, December 1982. (PB85 112175)

NOAA WESTERN REGION COMPUTER PROGRAMS AND PROBLEMS NWS WRCP NO. 64

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This publication has been reviewed
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Delain A. Edman, Chief
Scientific Services Division
Salt Lake City, Utah

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RECORDS/NORMALS FORM PROGRAM FOR CLI.EXE PROGRAM

Bill Patterson
NWSFO Boise, Idaho

I.   INTRODUCTION

CLIRCNMS.EXE is an IBM-PC or compatible program that produces monthly files containing values for the following: daily temperature normals (High, Low, Avg), the record highs/lows and respective years, daily normal rainfall and annual normal rainfall to date, plus sunrise and sunset.

This program is designed to run in conjunction with the CLI.EXE program (WRCP 58).

Features of CLIRCNMS...

    1.   Creates/Updates the selected month (RECNORM.JAN, etc).

    2.   Prints the selected month (RECNORM.JAN, etc.). The Print selections are independent of the Update selection.

II.   METHODOLOGY

A.   ENVIRONMENT

CLIRCNMS.EXE was written in Turbo Pascal, Ver 6.0 and compiled to run as a stand alone program in the DOS environment. The program is not 'hardwired' to any local drive (i.e., C:). It must reside on the same drive as the *.CLI files. CLIRCNMS.EXE requires the appropriate subdirectory to be entered as a command line parameter (i.e., CLIRCNMS CLI) even if the CLIRCNMS.EXE program is in the same subdirectory as the *.CLI files. The program will handle multiple locations by entering the appropriate subdirectory as a command line parameter.

B.   SOFTWARE STRUCTURE

The files are opened and closed as quickly as possible. If a file is not found the program will display the filename on the screen and indicate the file was not found and wait for user input before exiting the program.

As execution begins, the program looks for the RECNORM file for each month. If found, it extracts the file creation date and put it into a string variable for later use. If the RECNORM file is not found, a PLS UPDATE string is put into the variable instead of the file creation date.

From there, the program goes to the CLIDAT.CLI file to extract the location for use in each menu and in each RECNORM file. If the CLIDAT.CLI file is not found, the program displays 'CLIDAT.CLI file not found', waits for user input and then exits the program. If the CLIDAT.CLI file is found, the program extracts the location name for use on each menu.

Once invoked, the Main Menu is displayed...

```
BOISE ID                              CLIRCNMS 1.0

              RECORDS MAIN MENU

      A - Update the RECORDS files

      B - Print the RECORDS files

      X - EXIT the RECORDS program

          Enter your Choice -
```

The user has to enter A, B, or X in upper or lower case. The program will not recognize ANY other key.

Choosing 'A' displays the UPDATE MENU...

```
BOISE ID
                    UPDATE MENU

      A - JAN  02/02/96      G - JUL  PLS UPDATE
      B - FEB  03/02/96      H - AUG  PLS UPDATE
      C - MAR  04/04/96      I - SEP  PLS UPDATE
      D - APR  05/05/96      J - OCT  PLS UPDATE
      E - MAY  06/05/96      K - NOV  PLS UPDATE
      F - JUN  07/07/96      L - DEC  PLS UPDATE
          X - Return to Previous Menu

          Enter your Choice -
```

The UPDATE MENU displays the location in the upper left corner of the screen and then displays the choices for the user. Along with the choice, the file creation date of the RECNORM file is displayed. If the RECNORM file is not found, the menu asks the user to please update the month (PLS UPDATE). The user is also given the option to return to the MAIN MENU. The program will recognize only the choices (A through L, and X) in either upper or lower case.

If the user chooses 'X' the program returns to the main menu. If a month is chosen, the program reads, and formats the data in the NMAX, NMIN, NRMT, RECH, MAXYR, RECL, MINYR, PCPN, SUNR, & SUNS CLI files. At this point the program calculates the Annual Rainfall to date and then creates/updates the chosen RECNORM file using the ASCII format.

Choosing 'B' displays the PRINT MENU...

```
BOISE ID
                        PRINT MENU

        A - JAN  02/02/96      G - JUL  PLS UPDATE
        B - FEB  03/02/96      H - AUG  PLS UPDATE
        C - MAR  04/04/96      I - SEP  PLS UPDATE
        D - APR  05/05/96      J - OCT  PLS UPDATE
        E - MAY  06/05/96      K - NOV  PLS UPDATE
        F - JUN  07/07/96      L - DEC  PLS UPDATE
              X - Return to Previous Menu

                     Enter your Choice -
```

The PRINT MENU operation is similiar to the UPDATE MENU, recognizing only the displayed choices in either upper or lower case.

If a month is chosen, the program checks for the chosen RECNORM file. If the file is found, the user is prompted to '...Check the Paper in the Printer for Proper Position...' and displays a prompt to 'Hit the RETURN key to continue'. Upon hitting the RETURN key, the program prints the RECNORM.XXX file and returns to the PRINT MENU. If the appropriate file is not found, the program displays '... (chosen month) needs Updating ...' and prompts the user to 'Hit the RETURN key to continue'. At this point, the user is returned to the PRINT MENU.

C. PROGRAM FILES

Executable file   CLIRCNMS.EXE

Required CLI files   CLIDAT.CLI
                                    MAXYR.CLI
                                    MINYR.CLI
                                    NMAX.CLI
                                    NMIN.CLI
                                    NRMT.CLI
                                    PCPN.CLI
                                    RECH.CLI
                                    RECL.CLI
                                    SEASON.CLI
                                    SUNR.CLI
                                    SUNS.CLI

Created files   RECNORM.JAN
                                    RECNORM.FEB
                                    RECNORM.MAR
                                    RECNORM.APR
                                    RECNORM.MAY
                                    RECNORM.JUN
                                    RECNORM.JUL
                                    RECNORM.AUG
                                    RECNORM.SEP
                                    RECNORM.OCT
                                    RECNORM.NOV
                                    RECNORM.DEC

III. CAUTIONS AND RESTRICTIONS

A. The CLIRCNMS.EXE file must be on the same drive (either floppy or hard drive) as the *.CLI files.

B. The program requires one (1) command line parameter. For example, if the *.cli files are located in the subdirectory CLI, the user would invoke the program by typing:

       CLIRCNMS CLI

If no subdirectory is entered on the command line, the program will prompt the user with ' ...CLIDAT.CLI file not found...' and 'Hit the RETURN Key to continue'. Upon hitting the

RETURN key, the user exits the program. For this reason, I recommend a batch file, or a pif file if the program is run under WINDOWS, to run the program.

C.   If the monthly normals (high, low, normal, pcpn) do not agree with the published normals, check the daily entries in the *.CLI files for that month against the published daily normals.

D.   The Print function of the program is designed to use a local printer attached to the PC running the CLIRCNMS.EXE program. The program creates a RECNORM.XXX file for each month. If the PC has no printer attached, the user can transport the appropriate RECNORM.XXX file to any PC with a printer.

IV.   REFERENCES

Johnston, Joe L., 1994: WRCP 58 Revised, Daily Climate Summary for MAPSO.

RECNORM.XXX Example

RECORDS and NORMALS

Location : BURNS
Month : January
Last Update: 02/28/1996

	NORMALS			RECORDS				RAIN			
Date	High	Low	Avg	High	Year	Low	Year	Daily	Annual	Sunrise	Sunset
							(Standard Time)				
01	33	13	23	46	1963*	-14	1983	.04	0.04	730 AM	730 PM
02	33	12	23	46	1946*	-7	1983	.04	0.08	730 AM	730 PM
03	33	12	23	48	1963*	-10	1952	.04	0.12	730 AM	730 PM
04	33	12	23	45	1994	-14	1959	.04	0.16	730 AM	730 PM
05	33	12	22	53	1969	-11	1950	.04	0.20	730 AM	730 PM
06	33	12	22	49	1963	-27	1982	.04	0.24	730 AM	730 PM
07	33	12	22	53	1945	-21	1982	.03	0.27	729 AM	729 PM
08	33	12	22	55	1962	-12	1977	.03	0.30	729 AM	729 PM
09	33	12	22	57	1990	-11	1977	.03	0.33	729 AM	729 PM
10	33	12	22	53	1959	-8	1982	.03	0.36	729 AM	729 PM
11	33	12	22	51	1959	-10	1949	.03	0.39	728 AM	728 PM
12	33	12	23	52	1959	-11	1963	.03	0.42	728 AM	728 PM
13	33	12	23	53	1945	-9	1960	.03	0.45	728 AM	728 PM
14	33	12	23	52	1951	-4	1949	.03	0.48	727 AM	727 PM
15	33	12	23	51	1974	-10	1947	.03	0.51	727 AM	727 PM
16	33	13	23	49	1974	-18	1987	.03	0.54	726 AM	726 PM
17	33	13	23	55	1994	-22	1984	.03	0.57	726 AM	726 PM
18	33	13	23	52	1994	-14	1984	.03	0.60	725 AM	725 PM
19	33	13	23	50	1994	-12	1988	.03	0.63	724 AM	724 PM
20	33	13	23	51	1981	-13	1949	.03	0.66	724 AM	724 PM
21	34	13	23	57	1963	-26	1962	.03	0.69	723 AM	723 PM
22	34	13	24	55	1948	-22	1962	.03	0.72	722 AM	722 PM
23	34	14	24	58	1959	-22	1962	.03	0.75	721 AM	721 PM
24	34	14	24	53	1975	-14	1949	.03	0.78	721 AM	721 PM
25	34	14	24	52	1975	-16	1949	.03	0.81	720 AM	720 PM

26	35	14	24	54 1971	-14 1957		.03	0.84	719 AM	719 PM
27	35	14	25	51 1971	-25 1957		.03	0.87	718 AM	718 PM
28	35	15	25	51 1975	-10 1971		.03	0.90	717 AM	717 PM
29	35	15	25	50 1953	-18 1957		.03	0.93	716 AM	716 PM
30	35	15	25	56 1971	-16 1957		.03	0.96	715 AM	715 PM
31	36	16	26	58 1971	-20 1950		.03	0.99	714 AM	714 PM

January Average High : 33.6   * and Previous Years
January Average Low : 13.0
January Average   : 23.3
January Average Rain : 0.99

CLIRCNMS.EXE

PART A: PROGRAM INFORMATION AND INSTALLATION

PROGRAM NAME: CLIRCNMS.EXE Version 1.0

PURPOSE: The CLIRCNMS program creates a one page form for each month of the year. The form contains the normals (high, low & average), the record high temperature and year, the record low temperature and year, the normal daily rainfall, the normal annual rainfall to date, plus sunrise and sunset times for each day of the month. The form also contains the monthly normals (high, low, average, & rainfall). The data is taken from the *.CLI files used in the CLI.EXE program (WRCP 58).

The intent of the program is to produce a single page of climate data for each month in a form that can be easily used and updated.

PROGRAM INFORMATION:

Development Programmer:
William B. Patterson
Location: NWSFO Boise
Phone: (208) 334-9860, ext 235
System: IBM-PC or Compatible
Language: Turbo Pascal
Compiler: Turbo Pascal 6.0
Program Creation Date: 3/7/96
Run Time: 3 seconds on a 386 PC
Disk Space: 65,000 bytes

Maintenance Programmer:
William B. Patterson
Location: NWSFO Boise
Phone: (208) 334-9860 ext 235

PROGRAM REQUIREMENTS:

Files	Location	Comments
CLIDAT.CLI	x:\dir	* Contains location
CLIRCNMS.BAT	x:\	Batch file to call 'CLIRCNMS dir'
CLIRCNMS.EXE	x:\	Should be in a subdirectory
MAXYR.CLI	x:\dir	* Record High Years
MINYR.CLI	x:\dir	* Record Low Years
NMAX.CLI	x:\dir	* Normal Daily High Temperatures
NMIN.CLI	x:\dir	* Normal Daily Low Temperatures
NMRT.CLI	x:\dir	* Normal Daily Average Temperatures
PCPN.CLI	x:\dir	* Normal Daily Precipitation

RECH.CLI	x:\dir	* Record High Temperatures
RECL.CLI	x:\dir	* Record Low Temperatures
RECNORM.xxx	x:\dir	**File containing CLIRCNMS output
SEASON.CLI	x:\dir	* Monthly Normal HDD, CDD, & PCPN
SUNR.CLI	x:\dir	* Daily Sunrise in Local Standard Time
SUNS.CLI	x:\dir	* Daily Sunset in Local Standard Time

    * = Data file used in CLI.EXE (WRCP 58)
   ** = xxx represents the month (JAN, FEB, etc.)

PROGRAM INSTALLATION

Copy the CLIRCNMS.EXE program onto the disk drive that contains the *.CLI files.

PROGRAM SETUP

I suggest you create a batch file to run the CLIRCNMS.EXE program. If you are running the CLI.EXE program for multiple locations, you should create a batch file for each location. The CLIRCNMS.EXE program requires the subdirectory containing the *.CLI files as a command line parameter, regardless of the CLIRCNMS location.

Example batch files...   (*.CLI files in CLI subdirectory)

 (CLIRCNMS.EXE in CLI subdirectory)   cd\CLI
                                            CLIRCNMS CLI

 (CLIRCNMS.EXE in EXE subdirectory)   cd\EXE
                                            CLIRCNMS CLI

PART B: PROGRAM EXECUTION AND ERROR CONDITIONS

PROGRAM NAME: CLIRCNMS.EXE   Version 1.0

PROGRAM EXECUTION:

The command line is CLIRCNMS <dir>, where <dir> is the subdirectory containing the *.CLI files for the desired location. The program requires a <dir> entry on the command line. If <dir> is omitted, the program will prompt the user with '... CLIDAT.CLI file not found...' in the middle of the screen and 'Hit the RETURN key to continue' at the bottom of the screen.

First-time Execution:

When the Main Menu appears...
choose 'A - Update the Records files'. This will bring you to the UPDATE MENU...

```
┌─────────────────────────────────────────────────┐
│                                                   │
│  BOISE ID                          CLIRCNMS 1.0   │
│                                                   │
│              RECORDS MAIN MENU                    │
│                                                   │
│       A - Update the RECORDS files                │
│                                                   │
│       B - Print the RECORDS files                 │
│                                                   │
│       X - EXIT the RECORDS program                │
│                                                   │
│          Enter your Choice -                      │
│                                                   │
│                                                   │
└─────────────────────────────────────────────────┘
```

```
BOISE ID
                    UPDATE MENU

          A - JAN  PLS UPDATE      G - JUL  PLS UPDATE
          B - FEB  PLS UPDATE      H - AUG  PLS UPDATE
          C - MAR  PLS UPDATE      I - SEP  PLS UPDATE
          D - APR  PLS UPDATE      J - OCT  PLS UPDATE
          E - MAY  PLS UPDATE      K - NOV  PLS UPDATE
          F - JUN  PLS UPDATE      L - DEC  PLS UPDATE
                  X - Return to Previous Menu

                  Enter your Choice -
```

Now go through each menu selection, from A to L. This will create the RECNORM.XXX file for each month of the year. After you make the selection for each month, the menu will display the file creation date of the appropriate RECNORM.XXX file ('A - JAN 3/7/96').

ERROR CONDITIONS:

1. If the screen prompts '... CLIDAT.CLI file not found ...' without displaying the main menu, there are two (2) possible reasons...

    A. <dir> not used on the command line.

    B. CLIDAT.CLI file not in <dir> used on command line.

2. After making a selection from the UPDATE MENU: The program will prompt the user with the name of any missing file (i.e, 'NMAX.CLI file not found') in the middle of the screen and 'Hit the RETURN Key to continue' at the bottom of the screen. Upon striking the RETURN key the program will halt execution.

3. After making a selection from the PRINT MENU: If the selected RECNORM.XXX file is not found, the program will prompt the user with '...(Chosen month) needs Updating...' in the middle of the screen and 'Hit the RETURN Key to continue' at the bottom of the screen. Upon striking the RETURN key, the user returns to the PRINT MENU.

4. If there is no local printer attached to the PC running the CLIRCNMS.EXE program, the program will still update and create the RECNORM.XXX files. The user will have to transport the RECNORM file(s) to a PC with a printer, or use another program to send the RECNORM.XXX file(s) to a LAN printer.

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bottom of the screen. Upon striking the RETURN key, the user returns to the PRINT MENU.

4.   If there is no local printer attached to the PC running the CLIRCNMS.EXE program, the program will still update and create the RECNORM.XXX files.   The user will have to transport the RECNORM file(s) to a PC with a printer, or use another program to send the RECNORM.XXX file(s) to a LAN printer.

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40 AFOS Vector Graphic to Grid Point Program. James R. Fors, December 1982. (PB85 109544)

41 A Pilot Briefing Program for the Background Partition. Kenneth B. Mielke and Joe L. Johnston, March 1983. (PB85 109551)

42 AEV Local Verification for Aviation, Precipitation, and Temperature Programs: AV, REL, TEM. Timothy W. Barker, Revised September 1987. (PB88 115662/AS), Revised September 1993. (PB94-113495)

43 OBLOG. Nancy Larsen, December 1983. (PB85 109528)

44 Communications Software for Olympics Micromation Computer System. Glen Sampson, June 1984. (PB85 109510)

45 PLOTFILE Appender. Wendy L. Wolf, July 1984. (PB85 109502)

46 Spectral Wave Data Analysis (Non-Directional). Lawrence Dunn, August 1984. (PB85 109577)

47 Isentropic Objective Analysis. Jeffrey L. Anderson, August 1984. (PB85 112167)

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50 AOS Graphic to Grid Point Conversion and Departure from Normal Programs. Jeffrey L. Anderson and Mark A. Mathewson, August 1985. (PB85 248110/AS)

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62 CLINEWS. Ray Stuyvesant, May 1991. (PB91-200709/AS)

63 FTFIND, Les Colin, December 1995.