NOAA Western Region Computer Programs and
Problems NWS WRCP - No. 37

PROGRAM TO WORK UP CLIMATIC SUMMARY WEATHER SERVICE FORMS (F-6, F-52)

Salt Lake City, Utah
August 1982

U.S. DEPARTMENT OF COMMERCE / National Oceanic and Atmospheric Administration / National Weather Service

PREFACE

This Western Region publication series is considered as 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 will 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 new series will help in developing this potential into reality.

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1 Standardized Format for Computer Series.
2 AFOS Crop and Soil Information Report Programs. Ken Mielke, July 1979.
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27 Animation of AFOS Graphics. Joe Wakefield and Jim Fors, April 1981.
28 AFOS Interactive Graphics. Jim Fors, Don Laurine, and Sandy MacDonald, April 1981.
29 Computer Programs for Aviation Forecast Transmission. Kenneth B. Mielke and Matthew R. Peroutka, May 1981.
30 AFOS Product Collective Program. Morris S. Webb, Jr., September 1981.
31 Graphic Display of FOUS Output. Stephen D. Steenrod, September 1981.
32 Automation of Hourly Aviation Observation Calculations. W. Paul Duval, October 1981.
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34 Orographic Snowfall Rate Model for Alta, Utah. Steven K. Todd and Glenn E. Rasch, December 1981.
35 F-6 Monthly Climatic Summary Program for AFOS. Peter G. Mueller, May 1982.

NOAA Western Region Computer Programs and Problems NWS WRCP - No. 37

PROGRAM TO WORK UP CLIMATIC SUMMARY WEATHER SERVICE FORMS (F-6, F-52)

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Boise, Idaho

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UNITED STATES
DEPARTMENT OF COMMERCE
Malcolm Baldrige, Secretary

National Oceanic and
Atmospheric Administration
John V. Byrne, Administrator

National Weather
Service
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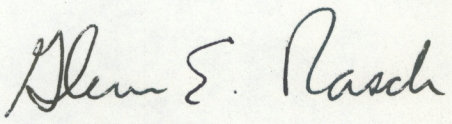
This technical publication has been reviewed and is approved for publication by Scientific Services Division, Western Region.



Glenn E. Rasch
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CONTENTS

FIGURES

PROGRAM TO WORK UP CLIMATIC SUMMARY WEATHER SERVICE FORMS (F-6, F-52)

Peter G. Mueller
WSFO Boise, Idaho

I. General Information

A. This program was designed for stations equipped with AFOS that participate in the climatic code program. Stations that do not compute the climate code at the end of each month but compute Weather Service Form F-6 should refer to WRCP No. 35.

Two separate programs are needed for proper output of the climat code. The first program produces most of the Weather Service Form F-6 and is described in WRCP No. 35, this second program produces the climat code (called CLICODE).

The combination of both programs, working hand in hand, can perform the arduous task of computing both Weather Service Forms F-6 and F-52 in a speedy and timely manner. They were designed to help eliminate simple mathematical and bookkeeping errors inherently associated with both products.

B. Environment:

All entries and commands are executed from an AFOS ADM. The programs are normally run on the first day of the month. The language is Data General FORTRAN IV, and the programs run in background. The program uses just less than 10K memory.

C. References:

Peter G. Mueller, May 1982: "F-6 Monthly Climatic Summary Program for AFOS". Western Region Computer Programs and Problems WRCP-35.

II. Applications

A. Program Description:

The main purpose of the programs (F6 and CLICODE) is to reduce errors and save time. Both programs read data from a common input file; each selecting only the data it requires. Data is entered once a day into a semi preformat type file (Figure 1). At the end of the month, a thorough check of all data must be made. The completed climatic code is stored under the CCCCMMNNN key. This key has been allocated for that product on a national level.

The data climat code is a composite of various monthly climatic data. In addition to the station location identifier and date, the following information is contained within the code:

1) Monthly average station pressure.
2) Monthly average sea-level pressure.
3) Sign of average monthly air temperature.
4) Average monthly air temperature (C).
5) Average monthly vapor pressure (MB).
6) Number of days in month precipitation was greater than .04 (1mm).
7) Total precipitation for the month (MM).
8) Category of quintile group total precipitation for month falls into.
9) Total sunshine for month.
10) Total sunshine for the month as a proportion of the climatological normal for the month, expressed in five of percent.

In order to compute the proper quintile category for the appropriate month, it is necessary to generate a file with the current quintile values (Figure 2). The vapor pressure is computed for each dewpoint (2 per day) through a series of equations within the program. These are summed and an average determined. A subroutine within the program uses the month number to determine the number of days for that month. It also checks for leap year.

B. Machine Requirements:

The executable save file, CLICODE.SV, and the quintile file must either reside on DPO or be linked to that directory. Most stations in the Western Region use an applications directory, called APL, solely for the purpose of running background programs. Other files required to run the F-6 program are discussed in WRCP No. 35.

Since the climat code program and the F-6 program run one after the other execution time for both programs is on the order of a minute or less. This is in contrast to the normal time of 2 to 3 hours to compute both forms (F-6 and F-52) by hand.

The alarm light is automatically triggered at the console issuing the executing command. At Boise the alarm light indicates that the product BOICMMBOI has been stored in the data base.

III. Procedures

A. Program Initiation

Before this program can be operational at any station, two changes must be made to the program. 1) The program automatically outputs into a predesigned key in the AFOS data base. Therefore, it is necessary to alter the program listing so that output is unique to your station. (Example: output at Boise goes to BOICMMBOI). 2) Since the code should carry your station location identifier (ex: BOI=72681), the source listing should be changed to reflect your own station location identifier.

Once all the data has been entered and has been carefully checked for entry errors, the key in AFOS which holds all the data must

then be transferred to DPO and renamed F6DATA. This can be accomplished using the AFOS "SAVE" command (ex: SAVE:BOISADBOI DPO:F6DATA).

Initiation of the program can be accomplished from any AFOS ADM (RUN:CLICODE). At WSFO Boise a macro file was created to ensure the proper sequence of program execution, since the output of the first program is used for input of the second program (CLICODE). The macro takes the form of (RUN:@F6BOI@):

```
F6BOI          (This program is described in WRCP No. 35.)
CLICODE
PRINT F6OUTPUT
```

The use of the macro has also simplified running of the programs to just one command at an AFOS ADM.

B. Input Required

1) Average monthly temperature which is generated by the F6 program and stored in a file called F6OUTPUT (Figure 3).

****The following must be entered each day into an AFOS key****

****#2 and #3 are already used as input for F6 program****

2) Daily precipitation (inches).
3) Daily minutes of sunshine.

****#4, #5, and #6 required additional input to the F6 input file****

4) Dewpoint temperature at 12Z and 00Z each day (F).
5) Average daily station pressure (MB)
6) Daily 6-hourly sea-level pressures at 12Z, 18Z, 00Z, and 06Z (MB).

B. Output:

A thorough set of checking procedures makes up roughly half of the program. They check to ensure that the code is written, it is complete, and ready for immediate transmission (Figure 4). However, in most cases, the code will not be sent to "ALL" until the second day of the month.

C. Program Listing:

```
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C  THIS PROGRAM IS AN APPENDUM TO THE F6.SV PROGRAM.                    C
C  PROGRAM IS CALLED CLICODE AND COMPUTES THE CLIMAT CODE.               C
C  PROGRAM WRITTEN BY PETER G. MUELLER MET INTERN    OCTOBER 1981 C
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
C RLDR/P CLICODE.RB MONTH.RB BG.LB UTIL.LB FORT.LB AFOSE.LB
      COMPILER NOSTACK
      DIMENSION D(31,6),JD(31,3),QUIN(12,6)
      COMMON K
      CALL OPEN(1,"F6DATA",2,IER)
      CALL OPEN(2,"QUINTILES",2,IER)
      CALL OPEN(3,"F6OUTPUT",2,IER)
      CALL OPEN(4,"BOICMMBOI",2,IER)
      READ(1,1)MO,IYR
    1 FORMAT(4(/),13X,I2,5X,I2,//)
      IYR=IYR+900
      ICNTRL=4
      CALL MONTH(MO,ICNTRL,IYR)
C
C   READ F6DATA -- ONE LINE AT A TIME.
   10 M=M+1
      IF(M.GT.K)GO TO 9
      READ(1,2)D(M,1),JD(M,1),D(M,6),D(M,2),JD(M,2),D(M,3),D(M,4),JD(M,3),D(M,5)
    2 FORMAT(11X,F4.2,6X,I4,10X,2(F6.1,1X),I3,2(1X,F6.1),1X,I3,1X,F6.1)
      IF(D(M,1).LT.0)D(M,1)=0
      PRECIP=PRECIP+D(M,1)
C  *** COMPUTE THE SATURATION VAPOR PRESSURE FOR EACH DEW POINT TEMP.
      I=2
   25 TD=((FLOAT(JD(M,I))-32)/1.8)+273.16
      IF(TD.LE.293)SVP=SVP+(10**(9.398-(2353/TD)))
      IF(TD.LE.297.AND.TD.GT.293)SVP=SVP+(10**(9.394-(2353/TD)))
      IF(TD.GT.297)SVP=SVP+(10**(9.391-(2353/TD)))
      IF(I.EQ.2)GO TO 20
      GO TO 21
   20 I=3
      GO TO 25
   21 IF(D(M,1).GE..04)IDAY=IDAY+1
      ISUN=ISUN+JD(M,1)
      STAPRS=D(M,6)+STAPRS
      PRES=D(M,2)+D(M,3)+D(M,4)+D(M,5)+PRES
C           ****** READ IN ANOTHER DAYS DATA **********
      GO TO 10
    9 READ(3,7)AVGT,ISUNPER
      CENT=(AVGT-32)/1.8
    7 FORMAT(17(/),24X,F5.1,25(/),26X,I3)
C           ****** CHANGE ENGLISH UNITS TO METRIC UNITS ********
      PRES=PRES/(4*K)
      STAPRS=STAPRS/K
      SVP=SVP/(2*K)
      PCPN=PRECIP
      IF(PRECIP.LT..04.AND.PRECIP.GT.0)GO TO 8
      PRECIP=PRECIP*25.4
      IPRECIP=PRECIP
      PERR=(PRECIP+.001)-IPRECIP
      IF(PERR.GE..5)IPRECIP=IPRECIP+1
      IF(IPRECIP.GT.8898)IPRECIP=8899
      GO TO 3
    8 IPRECIP=9999
    3 IF(CENT.GE.0)IS=0
      IF(CENT.LT.0)IS=1
      SS=(FLOAT(ISUN)/60)+.001
      ISS=SS
      SSERR=SS-ISS
      IF(SSERR.GE..5)ISS=ISS+1
```

```
C  READ THE ACTUAL PERCENTAGE OF SUNSHINE FROM THE PSOUTPUT FILE ******
      IF(PRES.GE.1000)PRES=PRES-1000
      IF(STAPRS.GE.1000)STAPRS=STAPRS-1000
      ISTAPRS=(STAPRS+.05)*10
      IPRES=(PRES+.05)*10
      CENT=ABS(CENT)
      ISVP=(SVP+.05)*10
      ICENT=(CENT+.05)*10
      DO 4 M=1,12
    4 READ(2,30)(QUIN(M,N),N=1,6)
   30 FORMAT(5(F4.2,1X),F3.0)
      SUNPER=(FLOAT(ISUNPER)/QUIN(MO,6))*20
      ISUNPER=SUNPER+.5
C  ********** FIND WHICH QUINTILE GROUP THE PRECIP FALLS INTO  ********
      IF(PCPN.LE.QUIN(MO,1))GO TO 11
      IF(PCPN.LE.QUIN(MO,2))GO TO 12
      IF(PCPN.LE.QUIN(MO,3))GO TO 13
      IF(PCPN.LE.QUIN(MO,4))GO TO 14
      IF(PCPN.LE.QUIN(MO,5))GO TO 15
      IQ=5
      GO TO 31
   11 IQ=0
      GO TO 31
   12 IQ=1
      GO TO 31
   13 IQ=2
      GO TO 31
   14 IQ=3
      GO TO 31
   15 IQ=4
   31 IF(IPRECIP.GT.9900)IQ=0
      REWIND 4
      WRITE(4,100)
  100 FORMAT(1X,"BOICMMBOI000",4("<377>"),"50","<305>","<200>",/1X,
     +"                    ",/1X,"<12>"," ",/1X,"<12>")
C
C  THIS PORTION OF THE PROGRAM WRITES THE FINAL CODE. IT WILL CHECK ALL
C  COMBINATIONS OF NUMBERS SO THAT ZEROS ARE REPLACED BY BLANKS AT THE
C  BEGINNING OF CODED GROUPS.
C
      WRITE(4,49)
   49 FORMAT(1X,"72681 CLIMAT",Z)
C
C  FIRST PORTION OF CODE EVALUATES THE MONTH AND YEAR. COMPUTER WILL WRITE
C  A MONTH WHICH IS LESS THAN 10 AS A BLANK FIRST THAN A NUMBER. CHECKING
C  ROUTINE WILL PLACE A "0" IN THE FIRST LOCATION.
C
      IF(MO.LT.10)GO TO 50
      WRITE(4,51)MO,IYR
   51 FORMAT(2X,I2,I3,1X,"72681",Z)
      GO TO 53
   50 WRITE(4,52)MO,IYR
   52 FORMAT(2X,"0",I1,I3,1X,"72681",Z)
C
C  FIND THE CORRECT FORMAT STATEMENT FOR THE STATION PRESSURE.
C
   53 IF(ISTAPRS.GT.999)GO TO 5
      IF(ISTAPRS.GT.99)GO TO 6
      IF(ISTAPRS.GT.9)GO TO 16
      WRITE(4,57)ISTAPRS
      GO TO 18
    5 WRITE(4,54)ISTAPRS
      GO TO 18
    6 WRITE(4,55)ISTAPRS
      GO TO 18
   16 WRITE(4,56)ISTAPRS
```

```
C  FIND THE CORRECT FORMAT STATEMENT FOR THE CORRECT SEA LEVEL PRESSURE
C
   18 IF(IPRES.GT.999)GO TO 70
      IF(IPRES.GT.99)GO TO 71
      IF(IPRES.GT.9)GO TO 72
      WRITE(4,57)IPRES
   57 FORMAT(2X,"000",I1,Z)
      GO TO 58
   70 WRITE(4,54)IPRES
   54 FORMAT(2X,I4,Z)
      GO TO 58
   71 WRITE(4,55)IPRES
   55 FORMAT(2X,"0",I3,Z)
      GO TO 58
   72 WRITE(4,56)IPRES
   56 FORMAT(2X,"00",I2,Z)
C
C THIS SECTION DETERMINES WHICH FORMAT TO USE FOR THE SIGN OF TEMPERATURE
C AND THE AVERAGE MONTHLY TEMPERATURE IN DEGREES CELCIUS.
C
   58 IF(ICENT.EQ.0)GO TO 59
      IF(ICENT.GT.99)GO TO 60
      IF(ICENT.GT.9)GO TO 61
      WRITE(4,62)ICODE,ICENT
   62 FORMAT(2X,I1,"00",I1,Z)
      GO TO 73
   59 WRITE(4,63)ICODE
   63 FORMAT(2X,I1,"000",Z)
      GO TO 73
   60 WRITE(4,65)ICODE,ICENT
   65 FORMAT(2X,I1,I3,Z)
      GO TO 73
   61 WRITE(4,66)ICODE,ICENT
   66 FORMAT(2X,I1,"0",I2,Z)
C
C THIS PORTION DETERMINES WHICH FORMAT WILL BE USED FOR VAPOR PRESSURE
C
   73 IF(ISVP.GT.99)GO TO 74
      IF(ISVP.GT.9)GO TO 75
      WRITE(4,67)ISVP
   67 FORMAT(2X,"00",I1,Z)
      GO TO 76
   74 WRITE(4,68)ISVP
   68 FORMAT(2X,I3,Z)
      GO TO 76
   75 WRITE(4,69)ISVP
   69 FORMAT(2X,"0",I2,Z)
C
C CHECK TO SEE IF MORE THAN 10 DAYS WITH PRECIP GREATER THAN .04
C
   76 IF(IDAY.GT.9)GO TO 78
      WRITE(4,77)IDAY
   77 FORMAT(1X,"0",I1,Z)
      GO TO 80
   78 WRITE(4,79)IDAY
   79 FORMAT(1X,I2,Z)
C
C FROM THE TOTAL PRECIP FOR THE MONTH FIND THE CORRECT FORMAT STATEMENT
C
   80 IF(IPRECIP.GT.999)GO TO 81
      IF(IPRECIP.GT.99)GO TO 82
      IF(IPRECIP.GT.9)GO TO 83
      WRITE(4,84)IPRECIP,IQ
   86 FORMAT(2X,I4,I1,Z)
      GO TO 85
   81 WRITE(4,86)IPRECIP,IQ
   98 FORMAT(2X,"0",I3,I1,Z)
```

```
      GO TO 85
   82 WRITE(4,98)IPRECIP,IQ
   88 FORMAT(2X,"00",I2,I1,Z)
      GO TO 85
   83 WRITE(4,88)IPRECIP,IQ
   84 FORMAT(2X,"000",I1,I1,Z)
C
C FROM THE TOTAL SUNSHINE FOR THE MONTH FIND THE CORRECT FORMAT STATEMENT
C
   85 IF(ISS.GT.99)GO TO 90
      IF(ISS.GT.9)GO TO 91
      WRITE(4,67)ISS
      GO TO 87
   90 WRITE(4,68)ISS
      GO TO 87
   91 WRITE(4,69)ISS
C
C FROM PERCENT OF SUNSHINE FIND THE APPROPRIATE FORMAT STATEMENT
C
   87 IF(ISUNPER.GT.9)GO TO 92
      WRITE(4,77)ISUNPER
      GO TO 95
   92 WRITE(4,79)ISUNPER
   95 WRITE(4,99)
   99 FORMAT(1X,"=",/1X,"<12>"," ",/1X,"<12><203>")
      CALL RESET
      CALL FSTORE("BOICMMBOI",0,IER)
      CALL FORKP("CLICODE","BOICMMBOI",IER)
      CALL DFILW("BOICMMBOI")
      STOP
      END
```

Figure 1.

```
WOUS00 KBOI 310900
01=JANUARY 02=FEBRUARY 03=MARCH     04=APRIL   05=MAY      06=JUNE
07=JULY    08=AUGUST   09=SEPTEMBER 10=OCTOBER 11=NOVEMBER 12=DECEMBER
                                    AVG
MONTH NUMBER[--],19[--]   S  # OF * DAILY*     6 HOURLY PRESSURE GROUPS
                  AVG     K  SPCLS* STATN*
   MAX MIN PCPN WIND  SUN Y  SP/RS* PRESR* 12Z   (TD) 18Z    00Z   (TD) 06Z
 1[--- --- .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-]
 2  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
 3  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
 4  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
 5  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
 6  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
 7  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
 8  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
 9  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
10  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
11  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
12  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
13  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
14  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-[ ]
15  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
16  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
17  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
18  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
19  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
20  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
21  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
22  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
23  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
24  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
25  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
26  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
27  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
28  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
29  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
30  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
31  --  --  .00  -.-  --- -- --/--* ---.-*----.-/ -- ----.- ----.-/ -- ----.-
   MAX MIN PCPN WIND  SUN SKY # OF STATION      (TD)              (TD)
               SPEED      CVR SPCLS PRESR*     6 HOURLY PRESSURE GROUPS
**********************************************************************
.1) SAVE:BOISADBOI DP0:F6DATA
2) RUN:@F6BOI@ --- (IN APPROX 1 MINUTE GET PRINTOUT OFF PRINTER/PLOTTER)
3) TWO FILES HAVE BEEN STORED IN AFOS. 1) BOICMMBOI AND 2) BOICLMBOI
4) M:SAD TO START A NEW MONTHS WORTH OF DATA.  PUT CURSOR HERE-------->     [ ]
```

PRE-FORMAT. NOTE ON DAY 1 THE BRACKETS. DASHES WILL REMAIN FOR EACH DAY OF THE MONTH AND WILL BE IGNORED IF THE MONTH HAS LESS THAN 31 DAYS.

SAMPLE OF QUINTILES

	QUINTILE GROUP #1	QUINTILE GROUP #2	QUINTILE GROUP #3	QUINTILE GROUP #4	QUINTILE GROUP #5	% OF POSSIBLE SUNSHINE
JANUARY	0.12	0.64	1.04	1.49	2.15	41.
FEBRUARY	0.19	0.56	0.85	1.19	1.65	51.
MARCH	0.18	0.41	0.69	1.02	1.50	63.
APRIL	0.09	0.43	0.75	1.14	1.72	67.
MAY	0.32	0.58	0.94	1.34	1.92	71.
JUNE	0.01	0.24	0.55	0.98	1.71	75.
JULY	0.00	0.00	0.04	0.12	0.26	88.
AUGUST	0.00	0.00	0.06	0.22	0.52	85.
SEPTEMBER	0.00	0.05	0.16	0.34	0.68	81.
OCTOBER	0.00	0.29	0.53	0.80	1.21	68.
NOVEMBER	0.35	0.74	1.04	1.37	1.80	45.
DECEMBER	0.25	0.65	1.00	1.39	1.94	39.

THE CONFIGURATION OF THE QUINTILES FILE IS: 5(f4.2,1x),f3.0

Figure 2.

GENERATED BY FØBOI.SV

CLIMAT SUMMARY FOR THE MONTH OF SEPTEMBER

MAXIMUM	MINIMUM	TOTALS OF HEATING DEGREE DAYS	COOLING DEGREE DAYS	PRECIP-ITATION	WIND SPEED	SUNSHINE	SKY COVER
2369	1448	137	101	0.36	241.2	18107	98

AVERAGES OF MAXIMUM	MINIMUM	WIND SPEED	SKY COVER
79.0	48.3	8.0	3.3

TEMPERATURE DATA

→AVERAGE MONTHLY..... 63.6
DEPARTURE FROM NORMAL... 0.5

HIGHEST 96 ON 18
LOWEST 32 ON 30

NUMBER OF DAYS WITH-
MAX 32 OR BELOW..... 0
MAX 90 OR ABOVE..... 8
MIN 32 OR BELOW..... 1
MIN 0 OR BELOW..... 0

HEATING DEGREE DAYS
TOTAL THIS MONTH..... 137
DEPARTURE FROM NORMAL... 10
SEASONAL TOTAL..... 157
DEPARTURE FROM NORMAL... 18

COOLING DEGREE DAYS
TOTAL THIS MONTH..... 101
DEPARTURE FROM NORMAL... 31
SEASONAL TOTAL..... 658
DEPARTURE FROM NORMAL... -50

PRECIPITATION DATA

TOTAL FOR MONTH..... 0.36 INCHES
DEPARTURE FROM NORMAL.. -0.05

WEATHER DATA

NUMBER OF DAYS-

CLEAR.....19
PARTLY CLOUDY.... 5
CLOUDY..... 6

WITH 0.01 INCH OR MORE PRECIP 4
WITH 0.10 INCH OR MORE PRECIP 1
WITH 0.50 INCH OR MORE PRECIP 0
WITH 1 INCH OR MORE OF PRECIP 0

→PERCENTAGE OF SUNSHINE.... 80.%
NUMBER OF SPECIALS.....13
NUMBER OF RECORD SPECIALS.. 8

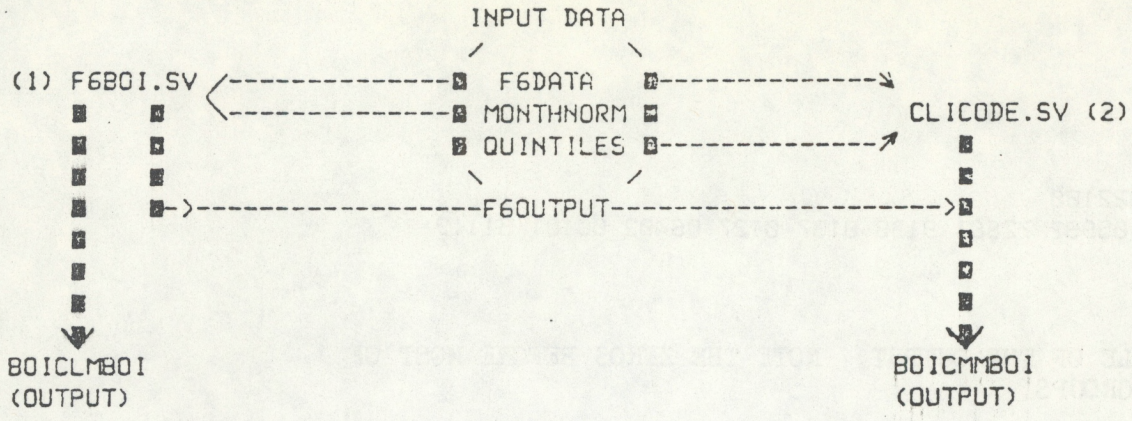
ARROWS INDICATE INPUTS USED FOR CLICODE.SV

Figure 3.

```
BOICMMBOI
WOU500 KBOI 022100
72681 CLIMAT 05982 72681 9138 0137 0127 06402 00101 31119=
```

SAMPLE OF THE OUTPUT. NOTE THE ZEROS BEFORE MOST OF THE GROUPS.

********** FLOWCHART OF PROGRAM INPUTS AND OUTPUTS **********



****

DESCRIPTION OF TERMS

MONTHNORM -- THIS IS AN INPUT FILE USED FOR F6BOI. ONCE THIS FILE IS CREATED AND IS DETERMINED TO BE ERROR-FREE, IT SHOULD ALMOST NEVER BE TOUCHED. IT CONTAINS ALL THE NORMALS, ALL THE NECESSARY ACCUMULATED TOTALS, AND DATA FOR FEBRUARY 29TH. (SEE WRCP #35)

QUINTILES -- THIS IS AN INPUT FILE USED FOR CLICODE AND ONCE CREATED NEED NEVER BE TOUCHED. IT CONTAINS 5 GROUPS OF QUINTILE VALUES FOR EACH MONTH OF THE YEAR AND THE PERCENT OF POSSIBLE SUNSHINE.

F6DATA ----- THIS IS AN INPUT FILE USED FOR BOTH F6BOI AND CLICODE. IT IS UPDATED DAILY WITH THE CURRENT MONTHS DATA.

F6OUTPUT --- THIS FILE IS CREATED AS AN OUTPUT PRODUCT FROM F6BOI AND IS USED AS INPUT FOR CLICODE. THE AVERAGE TEMPERATURE AND PERCENT OF SUNSHINE FOR THE MONTH ARE THE ONLY INPUT VALUES USED

BOICLMBOI -- THIS FILE IS CREATED AS AN OUTPUT PRODUCT FROM F6BOI (WRCP #35) AND STORED DIRECTLY INTO THE AFOS DATABASE AS THE MONTHLY CLIMATIC SUMMARY. AFTER A FEW MINOR MODIFICATIONS, IT IS THEN SENT OUT ON THE NOAA WEATHER WIRE.

BOICMMBOI -- THIS IS THE ONLY OUTPUT GENERATED FROM CLICODE. IT IS COMPLETE AND READY FOR TRANSMISSION UNDER "ALL".

F6BOI.SV --- THIS IS THE FORTRAN PROGRAM WHICH GENERATES BOTH BOICLMBOI AND F6OUTPUT. IT IS NECESSARY THAT THIS PROGRAM BE RUN FIRST.

CLICODE.SV - THIS IS THE FORTRAN PROGRAM WHICH PRODUCES BOICMMBOI. IT IS RUN SECOND, AFTER F6BOI.SV.

Figure 4.

NOAA Computer Programs and Problems NWS WR (continued)

36 Soaring Forecast Program. David S. Toronto, July 1982.

NOAA SCIENTIFIC AND TECHNICAL PUBLICATIONS

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