NOAA Eastern Region Computer Programs
and Problems NWS ERCP -   No. 17

ZONES

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NOAA TECHNICAL MEMORANDUM

al Weather Service, Eastern Region Computer Programs and Problems

stern Region Computer Programs and Problems (ERCP) series is a sub-
the Eastern Region Technical Memorandum series. It will serve as
icle for the transfer of information about fully documented AFOS
tion programs. The format ERCP - No. 1 will serve as the model
ure issuances in this series.

AFOS version of the Flash Flood Checklist. Cynthia M. Scott,
rch 1981.   (PB81 211252).

2   An AFOS Applications Program to Compute Three-Hourly Stream Stages.
Alan P. Blackburn, September 1981. (PB82 156886).

3   PUPPY (AFOS Hydrologic Data Reporting Program). Daniel P. Provost,
December 1981. (PB82 199720).

4   Special Search Computer Program. Alan P. Blackburn, April 1982.
(PB83 175455).

5   Conversion of ALEMBIC$ Workbins. Alan P. Blackburn, October 1982.
(PB83 138313).

6   Real-Time Quality Control of SAOs. John A. Billet, January 1983.
(PB83 166082).

7   Automated Hourly Weather Collective from HRR Data Input. Lawrence
Cedrone, January 1983   (PB83 167122).

8   Decoders for FRH, FTJ and FD Products. Cynthia M. Scott, February 1983.
(PB83 176057).

9   Stability Analysis Program. Hugh M. Stone, March 1983.   (PB83 197947).

10   Help for AFOS Message Comp. Alan P. Blackburn, May 1983.   (PB83 213561).

11   Stability and Other Parameters from the First Transmission RAOB Data.
Charles D. Little, May 1983. (PB83 220475).

12   TERR, PERR, and BIGC: Three Programs to Compute Verification Statistics.
Matthew R. Peroutka, August 1983. (PB84 127521).

13   Decoder for Manually Digitized Radar Observations. Matthew R. Peroutka,
June 1983. (PB84 127539).

14   Slick and Quick Data Entry for AFOS Era Verification (AEV) Program.
Alan P. Blackburn, December 1983. (PB84 138726).

15   MDR--Processing Manually Digitized Radar Observations. Matthew R.
Peroutka, November 1983.

16   RANP: Stability Analysis Plot Program. Hugh M. Stone, February 1984.

NOAA EASTERN REGION COMPUTER PROGRAMS AND PROBLEMS - No. 17

ZONES
"

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ZONES

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I. General Information

A. Summary

ZONES takes a zone forecast workbin and returns properly formatted
zone forecast products to the AFOS database. This program can be used for
a single set of zones or up to three sets of zones split up from one
workbin. When producing multiple sets of zones, the first set of zones can
have zone numbers from 1 to 49, the second and third sets can only have
zone numbers from 1 to 9.

The program has several checks incorporated into it:

-It checks for missing zones and tells you which zones are
missing.

-It checks for repeated zones and tells you which zones are
repeated.

-It checks for the dollar signs at the end of a zone group (it
will also places them in the proper position so you can save
space in the workbin).

-It checks for the period at the beginning of the lines in each
group of zones (at least two lines must begin with a period or
the program will return an error).

The program also does the following things:

-It puts zone names on your forecast for you.

-It sets up the proper WOUS and mass media headers for you,
including date and time (this is done for normal issuances,
amendments and corrections). It places the date/time line in the
mass media header into each group of zones.

-For amendments and corrections, the program allows you to put
out a full set of zones that indicate which zones are corrected
or amended.

B. Environment

The program was written in Data General FORTRAN IV and can be executed in the background partition at either a WSFO or WSO as a backup.

C. References

Peroutka, M., 1981: Accessing the AFOS Database, NOAA Western Region Computer Programs and Problems No. 23.

Chuisane, D.: CFSTO, AFOS Programming Note No. 93

Schuster, M.: Background Programming with AFOS, AFOS System Programming Note No. 90

Brehm, F.: FORTRAN Utility Library - UTIL.LB, AFOS System Programming Note No. 16.

Sunkel, Warren: The Topeka Library (TOP.LB), NOAA Central Region Computer Programs and Problems, NWS CRCP - No.7.

II. Application

A. Program Description

Figure 1 shows an example of what the forecaster would type up in the workbin. In this example the program outputs three sets of zones: Virginia, Maryland and Delaware.

1. The program takes the system time and fills out the WOUS header.

2. The program then leaves a blank line, then produces the mass media header. The first two lines of the mass media header are taken from a data file (instructions for creating the data file appear in III-A, Preparation).

3. The third line of the mass media header is then produced. In this step the times that are used come from the data file or system time according to the following schedule:

WOUS00 KWBC 312000

/1/2
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE LOW TO MID 20S.
WINDS DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.$$

/M1/D1/M4/3/4/6/7
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.$$

/M2/D2/M5/5/8/9/10/14
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE UPPER 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.$$

/M3/D3/M6/M7/M8/11/12
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE TEENS. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.$$

/M9
...TRAVELERS ADVISORY IN EFFECT THIS AFTERNOON...
.THIS AFTERNOON...COLD WITH OCCASIONAL SNOW SHOWERS ALONG WITH
SOME BLOWING AND DRIFTING SNOW. HIGHS IN THE LOW 20S. NORTHWEST
WINDS 10 TO 20 MPH.
.TONIGHT...PARTLY CLOUDY AND COLD. LOWS 5 TO 10. WINDS
DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.$$

/13/15/16
.THIS AFTERNOON...VARIABLE CLOUDINESS BREEZY AND COLDER WITH A 30
PERCENT CHANCE OF FLURRIES. HIGHS IN THE 20S. NORTHWEST WINDS 10
TO 20 MPH.
.TONIGHT...PARTLY CLOUDY AND COLD. LOWS 10 TO 15. WINDS
DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS AROUND 40.$$

!GGR

Figure 1. Workbin product for ZONES input.

```
       LOCAL TIME                    CODED TIME FROM DATA FILE
```

```
       1 AM to 5.30 AM ................. time assigned to /T1
       8 AM to 11.30 AM ............... time assigned to /T2
       1 PM to 5.30 PM ................. time assigned to /T3
       7 PM to 11.30 PM ............... time assigned to /T4
       Other times .................... system time
       Amendments ..................... system time
       Amendment corrections .......... system time
       Corrections .................... use previous time schedule
```

This schedule can be overridden in one of two ways:

(1) The forecaster can use a /T switch at the end of the RUN: command line (ex. RUN:ZONES/T) and the program will use the system time.

(2) The forecaster can put in his own third line of the mass media header by placing this line, preceded by a # sign, before the first group of zones in the workbin. (In this case the program will use this line in all zone groups). See Figures 2 and 3.

A blank line is then produced.

4. The program then writes the zone names according to the codes that the forecaster put into the workbin. The first set of zones uses the / followed immediately by the zone number (ex. /1/2/3). The second set of zones uses the / followed immediately by the first letter of the state name and the zone number (ex. /M1/M2/M3). The third set of zones is done the same as the second.

5. After the zone names are written, the program writes the third line of the mass media header followed by a blank line.

6. The program then writes the contents of the zone forecast. The dollar signs at the end of each zone forecast in the workbin can either be at the end of the last line of the forecast or on a separate line. In either case, the program will put the dollar signs on a line by themselves following a blank line in the final zone products.

7. If more than one set of zones is to be written, and you want to attach a special forecast to one or more zones, use a /Z# as if this were another set of zones. (/Z1 attaches to first set, /Z2 to second, /Z3 to third). See Figures 4, 5 and 6. This is not needed when only one set of zones is produced.

```
WOUS00 KWBC 312000
#10.30 AM EST TUE JAN 31 1984
/1/2
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE LOW TO MID 20S.
WINDS DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.$$


/M1/D1/M4/3/4/6/7
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.$$


/M2/D2/M5/5/8/9/10/14
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE UPPER 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.$$


/M3/D3/M6/M7/M8/11/12
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE TEENS. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.$$


/M9
...TRAVELERS ADVISORY IN EFFECT THIS AFTERNOON...
.THIS AFTERNOON...COLD WITH OCCASIONAL SNOW SHOWERS ALONG WITH
SOME BLOWING AND DRIFTING SNOW. HIGHS IN THE LOW 20S. NORTHWEST
WINDS 10 TO 20 MPH.
.TONIGHT...PARTLY CLOUDY AND COLD. LOWS 5 TO 10. WINDS
DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.$$


/13/15/16
.THIS AFTERNOON...VARIABLE CLOUDINESS BREEZY AND COLDER WITH A 30
PERCENT CHANCE OF FLURRIES. HIGHS IN THE 20S. NORTHWEST WINDS 10
TO 20 MPH.
.TONIGHT...PARTLY CLOUDY AND COLD. LOWS 10 TO 15. WINDS

.WEDNESDAY...MOSTLY SUNNY. HIGHS AROUND 40.$$


!GGR
```

Figure 2. Workbin product for ZONES input with
           optional mass media header line (preceded by #)

WOUS00 KWBC 311913

MARYLAND/DELAWARE ZONE FORECASTS
NATIONAL WEATHER SERVICE WASHINGTON DC
10.30 AM EST TUE JAN 31 1984

MD01-LOWER EASTERN SHORE
DE01-SUSSEX COUNTY DELAWARE
MD04-LOWER SOUTHERN MARYLAND
10.30 AM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

MD02-UPPER EASTERN SHORE
DE02-KENT COUNTY DELAWARE
MD05-SOUTH CENTRAL MARYLAND
10.30 AM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE UPPER 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.

LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

MD03-CECIL COUNTY MARYLAND
DE03-NEW CASTLE COUNTY DELAWARE
MD06-EAST CENTRAL MARYLAND
MD07-NORTH CENTRAL MARYLAND
MD08-ALLEGANY COUNTY MARYLAND
10.30 AM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE TEENS. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.

$$

MD09-GARRETT COUNTY/MARYLAND MOUNTAINS
10.30 AM EST TUE JAN 31 1984

...TRAVELERS ADVISORY IN EFFECT THIS AFTERNOON...
.THIS AFTERNOON...COLD WITH OCCASIONAL SNOW SHOWERS ALONG WITH
SOME BLOWING AND DRIFTING SNOW. HIGHS IN THE LOW 20S. NORTHWEST
WINDS 10 TO 20 MPH.
.TONIGHT...PARTLY CLOUDY AND COLD. LOWS 5 TO 10. WINDS
DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.

$$

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Figure 3. Resulting zone product using workbin in Figure 2
(optional mass media header line)

/1/2
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE LOW TO MID 20S.
WINDS DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.$$

/M1/D1/M4/3/4/6/7
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.$$

/M2/D2/M5/5/8/9/10/14
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE UPPER 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.$$

/M3/D3/M6/M7/M8/11/12
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE TEENS. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.$$

/M9
...TRAVELERS ADVISORY IN EFFECT THIS AFTERNOON...
.THIS AFTERNOON...COLD WITH OCCASIONAL SNOW SHOWERS ALONG WITH
SOME BLOWING AND DRIFTING SNOW. HIGHS IN THE LOW 20S. NORTHWEST
WINDS 10 TO 20 MPH.
.TONIGHT...PARTLY CLOUDY AND COLD. LOWS 5 TO 10. WINDS
DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.$$

/13/15/16
.THIS AFTERNOON...VARIABLE CLOUDINESS BREEZY AND COLDER WITH A 30
PERCENT CHANCE OF FLURRIES. HIGHS IN THE 20S. NORTHWEST WINDS 10
TO 20 MPH.
.TONIGHT...PARTLY CLOUDY AND COLD. LOWS 10 TO 15. WINDS
DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS AROUND 40.$$

/Z1
EXTENDED FORECAST FOR VIRGINIA

THURSDAY THROUGH SATURDAY
MILD THROUGH THE PERIOD. FAIR THURSDAY. CHANCE OF RAIN FRIDAY
ENDING SATURDAY. HIGHS WILL AVERAGE IN THE UPPER 40S AND 50S
WITH LOWS MOSTLY IN THE 30S. TEMPERATURES ABOUT 5 DEGRESS COLDER
IN THE MOUNTAINS.

/Z2
EXTENDED FORECAST FOR MARYLAND/DELAWARE

THURSDAY THROUGH SATURDAY
MILD THROUGH THE PERIOD. FAIR THURSDAY. CHANCE OF RAIN FRIDAY
ENDING SATURDAY. HIGHS WILL AVERAGE FROM THE MID 40S TO LOW 50S
WITH LOWS IN THE UPPER 20S TO MID 30S. TEMPERATURES 5 TO 10
DEGREES COLDER IN THE MARYLAND MOUNTAINS.

!GGR

Figure 4.   Workbin for ZONES input with special forecast
            attached to two zone sets.

```
WOUS00 KWBC 311920

VIRGINIA ZONE FORECASTS
NATIONAL WEATHER SERVICE WASHINGTON DC
430 PM EST TUE JAN 31 1984

VA01-EASTERN SHORE
VA02-GREATER HAMPTON ROADS
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE LOW TO MID 20S.
WINDS DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

VA03-INTERIOR SOUTHEAST
VA04-CENTRAL TIDEWATER
VA06-CENTRAL VIRGINIA
VA07-SOUTHEASTERN PIEDMONT
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

VA05-NORTHERN PIEDMONT AND FOOTHILLS
VA08-SOUTHWESTERN PIEDMONT
VA09-SOUTHERN FOOTHILLS INCLUDING LYNCHBURG AND VICINITY
VA10-CENTRAL FOOTHILLS
VA14-SOUTHERN SHENANDOAH VALLEY
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE UPPER 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$
```

Figure 5. Resulting Zone product for VA with special
            forecast attached (See Workbin in Figure 4)

Figure 5. Continued

VA11-NORTHERN SHENANDOAH VALLEY
VA12-CENTRAL SHENANDOAH VALLEY
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE TEENS. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.

$$

VA13-WEST CENTRAL HIGHLANDS
VA15-SOUTHERN HIGHLANDS
VA16-SOUTHWESTERN MOUNTAINS
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...VARIABLE CLOUDINESS BREEZY AND COLDER WITH A 30
PERCENT CHANCE OF FLURRIES. HIGHS IN THE 20S. NORTHWEST WINDS 10
TO 20 MPH.
.TONIGHT...PARTLY CLOUDY AND COLD. LOWS 10 TO 15. WINDS
DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS AROUND 40.

$$

EXTENDED FORECAST FOR VIRGINIA

THURSDAY THROUGH SATURDAY
MILD THROUGH THE PERIOD. FAIR THURSDAY. CHANCE OF RAIN FRIDAY
ENDING SATURDAY. HIGHS WILL AVERAGE IN THE UPPER 40S AND 50S
WITH LOWS MOSTLY IN THE 30S. TEMPERATURES ABOUT 5 DEGRESS COLDER
IN THE MOUNTAINS.

GGR

WOUS00 KWBC 311920

MARYLAND/DELAWARE ZONE FORECASTS
NATIONAL WEATHER SERVICE WASHINGTON DC
430 PM EST TUE JAN 31 1984

MD01-LOWER EASTERN SHORE
DE01-SUSSEX COUNTY DELAWARE
MD04-LOWER SOUTHERN MARYLAND
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

MD02-UPPER EASTERN SHORE
DE02-KENT COUNTY DELAWARE
MD05-SOUTH CENTRAL MARYLAND
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE UPPER 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

MD03-CECIL COUNTY MARYLAND
DE03-NEW CASTLE COUNTY DELAWARE
MD06-EAST CENTRAL MARYLAND
MD07-NORTH CENTRAL MARYLAND
MD08-ALLEGANY COUNTY MARYLAND
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE TEENS. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.

$$

Figure 6.   Resulting Zone product for DE/MD with special
            forecast attached (see Workbin in Figure 4)

Figure 6. Continued

MD09-GARRETT COUNTY/MARYLAND MOUNTAINS
430 PM EST TUE JAN 31 1984

...TRAVELERS ADVISORY IN EFFECT THIS AFTERNOON...
.THIS AFTERNOON...COLD WITH OCCASIONAL SNOW SHOWERS ALONG WITH
SOME BLOWING AND DRIFTING SNOW. HIGHS IN THE LOW 20S. NORTHWEST
WINDS 10 TO 20 MPH.
.TONIGHT...PARTLY CLOUDY AND COLD. LOWS 5 TO 10. WINDS
DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.

$$

EXTENDED FORECAST FOR MARYLAND/DELAWARE

THURSDAY THROUGH SATURDAY
MILD THROUGH THE PERIOD. FAIR THURSDAY. CHANCE OF RAIN FRIDAY
ENDING SATURDAY. HIGHS WILL AVERAGE FROM THE MID 40S TO LOW 50S
WITH LOWS IN THE UPPER 20S TO MID 30S. TEMPERATURES 5 TO 10
DEGREES COLDER IN THE MARYLAND MOUNTAINS.

GGR

8. If more than one set of zones is to be written, the forecaster's initials should be preceeded by an exclamation point (!). This is not needed when only one set of zones is produced.

9. Here are some examples of the error messages that the program will return if zones are missing or repeated, dollar signs are left out or too many are put into a set of zones, or at least two lines in each zone group do not begin with a period:

```
JOB ZONES ABORTED! ERROR CONDITION: / 4 MSG
JOB ZONES ABORTED! ERROR CONDITION: / 1Ø RPTD
JOB ZONES ABORTED! ERROR CONDITION: $$ MSG/RPTD
JOB ZONES ABORTED! ERROR CONDITION: . BGN LN MSG
JOB LAST CHECK COMPLETED
```

JOB LAST CHECK COMPLETED indicates that all the checks that the program makes have been completed. The space between the / or letter and the zone number should be ignored.

1Ø. Amendments... If an amendment is to be issued, the forecaster can use a /A switch at the end of the RUN: command line (ex. RUN:ZONES/A) or this can be set up in a separate macro just for amendments. In that case the global switch A would be set in the macro. Another feature of this program allows a full set of zones to be produced indicating which zones are amended. In this case the forecasterwould put a /A with the set of zone numbers. Any zone numbers appearing after that /A on that line would have ...UPDATED added to that zone name. See Figures 7 and 8. If a /A is used with a set of zone numbers but the global switch A is not used, the following error message will be produced:

```
JOB ZONES ABORTED! ERROR CONDITION: /A-NO AMD HDG
```

11. Corrections... If an correction is to be issued, the forecaster can use a /C switch at the end of the RUN: command line (ex. RUN:ZONES/C) or this can be set up in a separate macro just for corrections. In that case the global switch C would be set in the macro. Another feature of this program allows a full set of zones to be produced indicating which zones are corrected. In this case the forecaster would put a /C with the set of zone numbers. Any zone numbers appearing after that /C on that line would have ...CORRECTION added to that zone name. See Figures 9 and 1Ø. If a /C is used with a set of zone numbers but the global switch C is not used, the following error message will be produced:

```
JOB ZONES ABORTED! ERROR CONDITION: /C-NO COR HDG
```

WUUS00 KWBC 312000

/1/2
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE LOW TO MID 20S.
WINDS DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.$$

/M1/D1/A/M4/3/4/6/7
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.$$

/M2/D2/M5/5/8/9/10/14
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE UPPER 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.$$

/M3/D3/M6/M7/M8/11/12
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE TEENS. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.$$

/A/M9
...TRAVELERS ADVISORY IN EFFECT THIS AFTERNOON...
.THIS AFTERNOON...COLD WITH OCCASIONAL SNOW SHOWERS ALONG WITH
SOME BLOWING AND DRIFTING SNOW. HIGHS IN THE LOW 20S. NORTHWEST
WINDS 10 TO 20 MPH.
.TONIGHT...PARTLY CLOUDY AND COLD. LOWS 5 TO 10. WINDS
DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.$$

/13/15/16
.THIS AFTERNOON...VARIABLE CLOUDINESS BREEZY AND COLDER WITH A 30
PERCENT CHANCE OF FLURRIES. HIGHS IN THE 20S. NORTHWEST WINDS 10
TO 20 MPH.
.TONIGHT...PARTLY CLOUDY AND COLD. LOWS 10 TO 15. WINDS
DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS AROUND 40.$$

!GGR

Figure 7.   Workbin for ZONES input showing amendment flags
            for MD Zones 4 and 9.

WUUS00 KWBC 311929 AMD

MARYLAND/DELAWARE ZONE FORECASTS...UPDATED
NATIONAL WEATHER SERVICE WASHINGTON DC
229 PM EST TUE JAN 31 1984

MD01-LOWER EASTERN SHORE
DE01-SUSSEX COUNTY DELAWARE
MD04-LOWER SOUTHERN MARYLAND...UPDATED
229 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

MD02-UPPER EASTERN SHORE
DE02-KENT COUNTY DELAWARE
MD05-SOUTH CENTRAL MARYLAND
229 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE UPPER 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

MD03-CECIL COUNTY MARYLAND
DE03-NEW CASTLE COUNTY DELAWARE
MD06-EAST CENTRAL MARYLAND
MD07-NORTH CENTRAL MARYLAND
MD08-ALLEGANY COUNTY MARYLAND
229 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE TEENS. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.

$$

MD09-GARRETT COUNTY/MARYLAND MOUNTAINS...UPDATED
229 PM EST TUE JAN 31 1984

...TRAVELERS ADVISORY IN EFFECT THIS AFTERNOON...
.THIS AFTERNOON...COLD WITH OCCASIONAL SNOW SHOWERS ALONG WITH
SOME BLOWING AND DRIFTING SNOW. HIGHS IN THE LOW 20S. NORTHWEST
WINDS 10 TO 20 MPH.
.TONIGHT...PARTLY CLOUDY AND COLD. LOWS 5 TO 10. WINDS
DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.

$$

GGR
Figure 8.   Resulting zone product showing UPDATED headlines
            (See workbin in Figure 7)

WWUS00 KWBC 312000

/1/2
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE LOW TO MID 20S.
WINDS DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.$$

/M1/D1/C/M4/3/4/6/7
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.$$

/M2/D2/M5/5/8/9/10/14
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE UPPER 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.$$

/M3/D3/M6/M7/M8/11/12
.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE TEENS. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.$$

/C/M9
...TRAVELERS ADVISORY IN EFFECT THIS AFTERNOON...
.THIS AFTERNOON...COLD WITH OCCASIONAL SNOW SHOWERS ALONG WITH
SOME BLOWING AND DRIFTING SNOW. HIGHS IN THE LOW 20S. NORTHWEST
WINDS 10 TO 20 MPH.
.TONIGHT...PARTLY CLOUDY AND COLD. LOWS 5 TO 10. WINDS
DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.$$

/13/15/16
.THIS AFTERNOON...VARIABLE CLOUDINESS BREEZY AND COLDER WITH A 30
PERCENT CHANCE OF FLURRIES. HIGHS IN THE 20S. NORTHWEST WINDS 10
TO 20 MPH.
.TONIGHT...PARTLY CLOUDY AND COLD. LOWS 10 TO 15. WINDS
DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS AROUND 40.$$

!GGR

Figure 9. Workbin for ZONES input showing correction
           flags for MD ZONES 4 and 9.

WOUS00 KWBC 311932 COR

MARYLAND/DELAWARE ZONE FORECASTS...CORRECTED
NATIONAL WEATHER SERVICE WASHINGTON DC
430 PM EST TUE JAN 31 1984

MD01-LOWER EASTERN SHORE
DE01-SUSSEX COUNTY DELAWARE
MD04-LOWER SOUTHERN MARYLAND...CORRECTION
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

MD02-UPPER EASTERN SHORE
DE02-KENT COUNTY DELAWARE
MD05-SOUTH CENTRAL MARYLAND
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE UPPER 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

MD03-CECIL COUNTY MARYLAND
DE03-NEW CASTLE COUNTY DELAWARE
MD06-EAST CENTRAL MARYLAND
MD07-NORTH CENTRAL MARYLAND
MD08-ALLEGANY COUNTY MARYLAND
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE TEENS. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.

$$

MD09-GARRETT COUNTY/MARYLAND MOUNTAINS...CORRECTION
430 PM EST TUE JAN 31 1984

...TRAVELERS ADVISORY IN EFFECT THIS AFTERNOON...
.THIS AFTERNOON...COLD WITH OCCASIONAL SNOW SHOWERS ALONG WITH
SOME BLOWING AND DRIFTING SNOW. HIGHS IN THE LOW 20S. NORTHWEST
WINDS 10 TO 20 MPH.
.TONIGHT...PARTLY CLOUDY AND COLD. LOWS 5 TO 10. WINDS
DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.

$$

GGR

Figure 10.   Resulting zone product showing CORRECTION
             headlines (See Workbin in Figure 9)

12. Amendment corrections... use both the A and C switches.

13. When the A or C global switches are used, the program does not check for missing zones.

14. When the program runs to completion without finding any mistakes, the output will be similar to this:

```
JOB LAST CHECK COMPLETED
JOB VAZONES COMPLETED: PRODUCT WBCZFPVA STORED
JOB MDZONES COMPLETED: PRODUCT WBCZFPMD STORED
JOB DEZONES COMPLETED: PRODUCT WBCZFPDE STORED
```

The completed zones appear in Figures 11, 12 and 13.

B. Machine requirements

This program requires 16K of memory in the background. It takes about 45 seconds for the first set of zones to run and 30 seconds for each of the next sets of zones. Disk space required for the program is 62 RDOS blocks and 2 to 3 RDOS blocks for each data file.

C. Database

AFOS PRODUCTS:

cccZFPxx for each state's zones that are to be produced
cccWRKZFP workbin for zones

FILES:

xxZONES.DT is used as input for zone headers and times.
cccZFPxx is created for each set of zones.

D. Software structure

The ZONES program uses seven subroutines written specifically for this program. These include ZONUM, RDSW, HEDR, DATIM, CMPARE, CHEK and WRT. ZONES also uses subroutines and functions from the following four AFOS libraries: AFREAD, TOP, UTIL and FORT.

WOUS00 KWBC 311908

VIRGINIA ZONE FORECASTS
NATIONAL WEATHER SERVICE WASHINGTON DC
430 PM EST TUE JAN 31 1984

VA01-EASTERN SHORE
VA02-GREATER HAMPTON ROADS
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE LOW TO MID 20S.
WINDS DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

VA03-INTERIOR SOUTHEAST
VA04-CENTRAL TIDEWATER
VA06-CENTRAL VIRGINIA
VA07-SOUTHEASTERN PIEDMONT
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

VA05-NORTHERN PIEDMONT AND FOOTHILLS
VA08-SOUTHWESTERN PIEDMONT
VA09-SOUTHERN FOOTHILLS INCLUDING LYNCHBURG AND VICINITY
VA10-CENTRAL FOOTHILLS
VA14-SOUTHERN SHENANDOAH VALLEY
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE UPPER 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

Figure 11. Completed VA ZONES.

Figure 11. Continued

VA11-NORTHERN SHENANDOAH VALLEY
VA12-CENTRAL SHENANDOAH VALLEY
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE TEENS. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.

$$

VA13-WEST CENTRAL HIGHLANDS
VA15-SOUTHERN HIGHLANDS
VA16-SOUTHWESTERN MOUNTAINS
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...VARIABLE CLOUDINESS BREEZY AND COLDER WITH A 30
PERCENT CHANCE OF FLURRIES. HIGHS IN THE 20S. NORTHWEST WINDS 10
TO 20 MPH.
.TONIGHT...PARTLY CLOUDY AND COLD. LOWS 10 TO 15. WINDS
DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS AROUND 40.

$$

GCR

MARYLAND/DELAWARE ZONE FORECASTS
NATIONAL WEATHER SERVICE WASHINGTON DC
430 PM EST TUE JAN 31 1984

MD01-LOWER EASTERN SHORE
DE01-SUSSEX COUNTY DELAWARE
MD04-LOWER SOUTHERN MARYLAND
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

MD02-UPPER EASTERN SHORE
DE02-KENT COUNTY DELAWARE
MD05-SOUTH CENTRAL MARYLAND
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE UPPER 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

MD03-CECIL COUNTY MARYLAND
DE03-NEW CASTLE COUNTY DELAWARE
MD06-EAST CENTRAL MARYLAND
MD07-NORTH CENTRAL MARYLAND
MD08-ALLEGANY COUNTY MARYLAND
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE TEENS. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.

$$

MD09-GARRETT COUNTY/MARYLAND MOUNTAINS
430 PM EST TUE JAN 31 1984

...TRAVELERS ADVISORY IN EFFECT THIS AFTERNOON...
.THIS AFTERNOON...COLD WITH OCCASIONAL SNOW SHOWERS ALONG WITH
SOME BLOWING AND DRIFTING SNOW. HIGHS IN THE LOW 20S. NORTHWEST
WINDS 10 TO 20 MPH.
.TONIGHT...PARTLY CLOUDY AND COLD. LOWS 5 TO 10. WINDS
DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.

$$

GGR

Figure 12. Completed MD/DE ZONES.

WOUS00 KWBC 311908

DELAWARE ZONE FORECASTS
NATIONAL WEATHER SERVICE WASHINGTON DC
430 PM EST TUE JAN 31 1984

DE01-SUSSEX COUNTY DELAWARE
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

DE02-KENT COUNTY DELAWARE
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE UPPER 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

DE03-NEW CASTLE COUNTY DELAWARE
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE TEENS. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.

$$

GGR

Figure 13. Completed DE ZONES.

III. PROCEDURES

A. Preparation

The program uses data files for the zone names and headings. There is one file for each set of zones. The file should be prepared with AFOS message comp in the zone forecast product itself; then use the SAVE command to store the file on the disk as xxZONES.DT (where xx is the two letter state designator). For example the file for the Virginia zones would be prepared in AFOS product WBCZFPVA. After the file is prepared use the command SAVE:WBCZFPVA DPØ:VAZONES.DT. Figures 14, 15 and 16 are examples of the VAZONES.DT, MDZONES.DT and DEZONES.DT files.

The .DT files work in the following manner (use Figure 14 as an example). On the left hand side of each line there is a code (ex. /N). This is what the program looks for. Beginning in column 1Ø is the line that the program would write. The following list explains the codes:

/ZN ... (state name) zones (used with F global switch without zone names)
/N .... Normal zone issuance (first line of mass media header)
/A .... Amended zone package (first line of mass media header)
/C .... Corrected zone package (first line of mass media header)
/AC ... Correction of amended zone package (first line of mass media header)
/OF ... Issuing office (second line of mass media header)
/T1 ... Time used in early morning zone package (3rd line of mass media header)
/T2 ... Time used in late morning zone package (3rd line of mass media header)
/T3 ... Time used in afternoon zone package (3rd line of mass media header)
/T4 ... Time used in evening zone package (3rd line of mass media header)
/1 .... Zone number and name for zone 1
/2 .... Zone 2
.
/16 ... Zone 16
/Z1 ... For other forecasts such as extendeds attached to zones (use /Z1 for first set of zones../Z2 for second set etc.) This is not needed if only one set is processed. Dollar signs or periods at beginning of lines are not checked in a group using a /Z. A character other than a space must be in column 1Ø of the .DT file opposite the /Z code. The program does not write the character but is needed for processing.

```
WOUS00 KWBC 311700
1234567890
/ZN       VIRGINIA ZONES
/N        VIRGINIA ZONE FORECASTS
/A        VIRGINIA ZONE FORECASTS...UPDATED
/C        VIRGINIA ZONE FORECASTS...CORRECTED
/AC       VIRGINIA ZONE FORECASTS...UPDATE CORRECTION
/OF       NATIONAL WEATHER SERVICE WASHINGTON DC
/T1       430
/T2       1030
/T3       430
/T4       930
/1        VA01-EASTERN SHORE
/2        VA02-GREATER HAMPTON ROADS
/3        VA03-INTERIOR SOUTHEAST
/4        VA04-CENTRAL TIDEWATER
/5        VA05-NORTHERN PIEDMONT AND FOOTHILLS
/6        VA06-CENTRAL VIRGINIA
/7        VA07-SOUTHEASTERN PIEDMONT
/8        VA08-SOUTHWESTERN PIEDMONT
/9        VA09-SOUTHERN FOOTHILLS INCLUDING LYNCHBURG AND VICINITY
/10       VA10-CENTRAL FOOTHILLS
/11       VA11-NORTHERN SHENANDOAH VALLEY
/12       VA12-CENTRAL SHENANDOAH VALLEY
/13       VA13-WEST CENTRAL HIGHLANDS
/14       VA14-SOUTHERN SHENANDOAH VALLEY
/15       VA15-SOUTHERN HIGHLANDS
/16       VA16-SOUTHWESTERN MOUNTAINS
/Z1       FAKE ZONES
```

Fig. 14. VAZONES.DT

```
WOUS00 KWBC 312000
1234567890
/ZN      MARYLAND/DELAWARE ZONES
/N       MARYLAND/DELAWARE ZONE FORECASTS
/A       MARYLAND/DELAWARE ZONE FORECASTS...UPDATED
/C       MARYLAND/DELAWARE ZONE FORECASTS...CORRECTED
/AC      MARYLAND/DELAWARE ZONE FORECASTS...UPDATE CORRECTION
/OF      NATIONAL WEATHER SERVICE WASHINGTON DC
/T1      430
/T2      1030
/T3      430
/T4      930
/M1      MD01-LOWER EASTERN SHORE
/D1      DE01-SUSSEX COUNTY DELAWARE
/M2      MD02-UPPER EASTERN SHORE
/D2      DE02-KENT COUNTY DELAWARE
/M3      MD03-CECIL COUNTY MARYLAND
/D3      DE03-NEW CASTLE COUNTY DELAWARE
/M4      MD04-LOWER SOUTHERN MARYLAND
/M5      MD05-SOUTH CENTRAL MARYLAND
/M6      MD06-EAST CENTRAL MARYLAND
/M7      MD07-NORTH CENTRAL MARYLAND
/M8      MD08-ALLEGANY COUNTY MARYLAND
/M9      MD09-GARRETT COUNTY/MARYLAND MOUNTAINS
/Z2      FAKE
```

Figure 15. MDZONES.DT

```
WOUS00 KWBC 311700
1234567890
/ZN       DELAWARE ZONES
/N        DELAWARE ZONE FORECASTS
/A        DELAWARE ZONE FORECASTS...UPDATED
/C        DELAWARE ZONE FORECASTS...CORRECTED
/AC       DELAWARE ZONE FORECASTS...UPDATE CORRECTION
/OF       NATIONAL WEATHER SERVICE WASHINGTON DC
/T1       430
/T2       1030
/T3       430
/T4       930
/D1       DE01-SUSSEX COUNTY DELAWARE
/D2       DE02-KENT COUNTY DELAWARE
/D3       DE03-NEW CASTLE COUNTY DELAWARE
/Z3       FAKE
```

Figure 16. DEZONES.DT

NOTE: More than one line can be used for each code but the second
      line must follow the first line. For example:

/12 ... Zone 12
/12 ... Zone 12

B. Initiating the program

ZONES should usually be run from a macro. The macro follows this format:

[name of program]/[global switches] [input workbin]/I [begin
zone#]/B [last zone#]/L [two letter state designator]/Z

Here is an example for the WBC area using three sets of zones:

ZONES.SV/X WBCWRKZFP/I 1/B 16/L M1/B M9/L D1/B D3/L VA/Z MD/Z DE/Z

In this example the program would look for Virginia zones 1 through 16,
then Maryland zones 1 through 9 and then Delaware zones 1 through 3.

Explanation of global switches:

A .... Used for amended zones..can be used either within a macro
       or at time program is run (forecaster input). When this
       switch is used the time in mass media header is system
       time.

C .... Used for corrected zones..can be used either within a
       macro or at time program is run (forecaster input). When
       this switch is used time in the mass media header is from
       .DT file. If Used with "A" global switch..time used is
       system time.

T .... Time used in mass media header is system time. Can be used
       either within macro or when program is run (forecaster
       input).

N .... Central time zone (used only within macro)..defaults to
       Eastern

M .... Mountain time zone (used only within macro)..defaults to
       Eastern

P .... Pacific time zone (used only within macro)..defaults to
       Eastern

26

```
WOUS00 KWBC 311936

VIRGINIA ZONE FORECASTS
NATIONAL WEATHER SERVICE WASHINGTON DC
430 PM EST TUE JAN 31 1984

VA01-VA02-
VIRGINIA ZONES 1 2
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE LOW TO MID 20S.
WINDS DIMINISHING TO LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

VA03-VA04-VA06-VA07-
VIRGINIA ZONES 3 4 6 7
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW 40S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

$$

VA05-VA08-VA09-VA10-VA14-
VIRGINIA ZONES 5 8 9 10 14
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE UPPER 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS AROUND 20. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS 40 TO 45.

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Fig. 17. Sample Zone product without Zone names
          (global switch /F)

Figure 17. Continued

VA11-VA12-
VIRGINIA ZONES 11 12
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...WINDY VARIABLE CLOUDINESS AND COLDER. HIGHS IN
THE LOW TO MID 30S. NORTHWEST WINDS 20 TO 30 MPH AND GUSTY.
.TONIGHT...FAIR AND COLD. LOWS IN THE TEENS. WINDS DIMINISHING TO
LESS THAN 10 MPH.
.WEDNESDAY...MOSTLY SUNNY. HIGHS IN THE MID TO UPPER 30S.

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VA13-VA15-VA16-
VIRGINIA ZONES 13 15 16
430 PM EST TUE JAN 31 1984

.THIS AFTERNOON...VARIABLE CLOUDINESS BREEZY AND COLDER WITH A 30
PERCENT CHANCE OF FLURRIES. HIGHS IN THE 20S. NORTHWEST WINDS 10
TO 20 MPH.
.TONIGHT...PARTLY CLOUDY AND COLD. LOWS 10 TO 15. WINDS

.WEDNESDAY...MOSTLY SUNNY. HIGHS AROUND 40.

$$

GGR

O .... Does not check for missing zones (use within macro)

R .... Does not check for repeated zones (use within macro)

G .... Does not check for dollar signs (use within macro)

D .... Does not check for line beginning with period (use within macro)

X .... Addresses zones to ALL (default is ØØØ .. used within macro)

F .... Formats zones without zone names (see Figures 1 and 17 .. use within macro)

J .... Does not produce a blank line after date/time line in each zone group. A blank line is still produced after date/time line in the mass media header. (Used within macro.)

K .... Does not produce a blank line before line with $$ (used within macro)

E .... Deletes any blank lines between dollar signs and the next line that is not blank (used within macro)

Assuming that the name of the macro is ZONES.MC, the forecaster would use the command:

    RUN:ZONES

to initate the program. A /A switch is used when amendments are sent. A /C switch is used when corrections are sent.

C. ADM error messages

JOB ZONES ABORTED! ERROR CONDITION: / 4 MSG
        Means that /4 (zone 4) is missing

JOB ZONES ABORTED! ERROR CONDITION: / 1Ø RPTD
        Means that /1Ø (zone 1Ø) is repeated

JOB ZONES ABORTED! ERROR CONDITION: $$ MSG/RPTD
        Means that $$ are missing in at least one group or more than one set of $$ is in at least one zone group

JOB ZONES ABORTED! ERROR CONDITION:. BGN LN MSG
      Means that at least one zone group does not have two
      lines beginning with a period.

JOB ZONES ABORTED! ERROR CONDITION:/A-NO AMD HDG
      Means that a /A is within a zone group but an AMD program
      has not been run

JOB ZONES ABORTED! ERROR CONDITION:/C-NO COR HDG
      Means that a /C is within a zone group but a COR program
      has not been run

JOB ZONES ABORTED! ERROR CONDITION:RESTORE INPUT
      Means that the program cannot read your workbin - to
      correct this call up workbin in the edit mode and restore
      it

JOB LAST CHECK COMPLETED
      Means all checks have been completed

D. Cautions and restrictions on use

When running the program for more than one set of zones, the second
and third sets can only contain 1 to 9 zones. If a zone forecast covers
only some of a state's zones and the zone numbers are not consecutive (for
example, northern New Jersey has zones 1, 5 and 15) you will have to run
ZONES with global switch /O or put extra /B's and /L's in the macro.

E. Complete program listing

Begins on page 31.

NOTE: Parts A and B for ZONES have already been published as CP
Brief #5.

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C  *  THIS PROGRAM IS CALLED ZONES AND WILL PUT ZONE NAMES ON THE      *
C  *  ZONE FORECASTS...IT WILL ALSO PUT THE DATE AND TIME LINE INTO     *
C  *  EACH ZONE GROUP. UP TO 3 SETS OF ZONES CAN BE PRODUCED FROM       *
C  *  ONE WORK LOCATION. PROGRAM WILL CHECK FOR MISSING ZONES..         *
C  *  REPEATED ZONES..DOLLAR SIGNS IN ZONE GROUPS..AND CHECK THAT       *
C  *  AT LEAST TWO LINES IN A ZONE GROUP BEGIN WITH A PERIOD.           *
C  *  THE PROGRAM REQUIRES A .DT FILE FOR EACH SET OF ZONES. THE        *
C  *  FOLLOWING SUBROUTINES ARE INCORPORATED..ZONUM..RDSW..HEDR..       *
C  *  DATIM..CMPARE..CHEK..WRT. IT ALSO USES THE FOLLOWING LIBRARIES    *
C  *  AFREAD..TOP..UTIL..FORT...                                        *
C  ************************************************************************
        COMMON/ZONES/ M(69),MN(4),ICH(9),IDT(2),IFNM,ICM
        COMMON/ZON1/ IFILE(5),IFINE(4),IDOL(2)
        DIMENSION IOUT(40),IUP(80),IFIL(3),IUPU(80),IAR(20),IUP4(80),
       CIDA(5),IFIN(5)
        DATA IFINE/"--ZONES"/,IFILE/"--ZONES.DT"/,IDOL/"$$",6412K/
        CALL RDSW (IDA,IFIL,IZ,NUM,NBLT,NBLD)    ;READS SWITCHES
        IBL=6412K
        IFNM=0                               ;SET ZONE SET COUNTER TO 0
        DO 30 I=1,4                      ;SET $$ COUNTERS TO 0
 30     MN(I)=0
        M2=0                                 ;SET PERIOD COUNTERS TO 0
        IFZN=0
 20     IFNM=IFNM+1
        IF (IFNM.EQ.1)IFILE(1)=IFIL(1)    ;FIRST SET OF ZONES
        IF (IFNM.EQ.2)IFILE(1)=IFIL(2)    ;SECOND SET OF ZONES
        IF (IFNM.EQ.3)IFILE(1)=IFIL(3)    ;THIRD SET OF ZONES
        IFINE(1)=IFILE(1)
        IZONE=0                              ;SET ZONE GROUP COUNTER TO 0
        ICK=0                    ;SET ZONE GROUP AND SET COUNTER TO 0
        CALL GCHN (ICHN2,IER)
        CALL OPEN (ICHN2,IFILE,2,IER)   ;OPEN CHANNEL TO .DT FILE
        NB=9
        CALL RDS (ICHN2,IFIN,NB,IER)     ;READ IN LOCATION TO BE SENT FROM
        CALL DELETE (IFIN,IER)
        CALL CRAND (IFIN,IER)
        CALL GCHN (ICHN1,IER)
        CALL OPEN (ICHN1,IFIN,2,IER)    ;OPEN CHANNEL TO FILE FOR WRITING
        ITIM=0                               ;SET TIME LINE COUNTER TO 0
        ICHK=0                               ;SET CHECK COUNTER TO 0
        IF (IFNM.EQ.1)CALL AFREAD (1,IDA,$270)    ;IF FIRST SET OF ZONES
        IF (IFNM.GT.1)CALL AFREAD (3,DUMMY,$270)  ;IF SECOND OR THIRD SET
        CALL HEDR (ICHN1,ICHN2,IFIN,IAR,IZ)  ;PRODUCES PART OF HEADER
 40     CALL AFREAD (2,IOUT,$280,$270)
        CALL UNPACK (IOUT,80,IUP)
        IF (IUP(1).EQ.43K)GOTO 120           ;LOOKS FOR #
        IF (IUP(1).EQ.41K)GOTO 160           ;LOOKS FOR !
        IF (IUP(1).NE.57K)GOTO 180           ;LOOKS FOR EVERYTHING BUT /
        ICH(9)=0
        IFZN=0
        IF (IUP(2).EQ.132K)IFZN=1            ;SET FAKE ZONE COUNTER TO 1
        IF (ITIM.EQ.0.AND.IFNM.GT.1)GOTO 150
        IF (ITIM.EQ.0)CALL DATIM (ICHN1,ICHN2,IUPU,ITIM,IBL,IAR) ;DATE/TIME
 50     CALL ZONUM (ICHN1,ICHN2,M1,M2,IUP,ICK,IZONE,IFZN,ICHK)
        IF (IFZN.EQ.1)GOTO 40
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          IF (IFNM.GT.1)GOTO 100
          M1=0                      ;SET PERIOD COUNTER TO 0
100 IF (IZONE.EQ.0)GOTO 40
          CALL WRT (ICHN1,IUPU)   ;WRITE TIME LINE
          IF (NBLT.EQ.1)GOTO 40
          CALL WRS (ICHN1,IBL,2,IER)   ;WRITE BLANK LINE
          GOTO 40
120 ICH(9)=0
          DO 140 I=1,79             ;REMOVE # SIGN
140 IUPU(I)=IUP(I+1)
150 ITIM=1                         ;SET TIME LINE COUNTER TO 1
          CALL WRT (ICHN1,IUPU)   ;WRITE TIME LINE
          CALL WRS (ICHN1,IBL,2,IER)   ;WRITE BLANK LINE
          IF (IUP(1).EQ.43K)GOTO 40
          GOTO 50
160 ICH(9)=0
          DO 170 I=1,79             ;REMOVE ! FROM LINE
          IUP4(I)=40K
170 IUP4(I)=IUP(I+1)
          CALL WRT (ICHN1,IUP4)      ;WRITE INITIALS
          GOTO 40
180 IF (IFNM.GT.1.OR.IFZN.EQ.1)GOTO 190 ;IF SECOND OR THIRD SET OF ZONES
          IF (ITIM.EQ.0)GOTO 40        ;IF TIME LINE HAS NOT BEEN WRITTEN
          IF (IUP(1).EQ.56K.AND.IUP(2).EQ.56K.AND.IUP(3).EQ.56K)GOTO 190 ;...
          IF (IUP(1).EQ.56K)M1=M1+1   ;INCREASE PERIOD COUNTER BY ONE
190 DO 200 I=1,72
          IF (IUP(I).EQ.44K.AND.IUP(I+1).EQ.44K)GOTO 220 ;CHECK FOR $$
200 CONTINUE
          IF (IZONE.EQ.0)GOTO 40 ;IF NO MATCHING ZONE #'S FOUND DO NOT WRITE LINE
          CALL WRT (ICHN1,IUP,IB)  ;WRITE LINE
          GOTO 40
220 IF (IFZN.EQ.1)GOTO 225
          MN(3)=MN(3)+1              ;INCREASE $$ COUNTER BY ONE
225 IF (IZONE.EQ.0)GOTO 40
          IF (I.EQ.1)GOTO 230
          IUP(I)=40K                ;REPLACE $ WITH SPACE
          IUP(I+1)=40K              ;REPLACE $ WITH SPACE
          CALL WRT (ICHN1,IUP,IB) ;WRITE LINE
230 ICH(9)=1
          IF (IB.EQ.1.OR.NBLD.EQ.1)GOTO 235 ;IF PREVIOUS LINE WRITTEN IS BLANK
          CALL WRS (ICHN1,IBL,2,IER)        ;WRITE BLANK LINE
235 CALL WRS (ICHN1,IDOL,4,IER)    ;WRITE LINE WITH $$
          GOTO 40
270 CALL FORKE (IFINE,"RESTORE INPUT",IER) ;IF CAN'T READ WORK LOCATION
          GOTO 350
280 IF (M1.LT.2.AND.M2.GT.1)MN(4)=1 ;SET PERIOD COUNTER TO 1
          WRITE (ICHN1,290)
290 FORMAT (1X,"<12><203>")
          IF (IFNM.GT.1)GOTO 330         ;IF SECOND OR THIRD SET
          CALL CHEK (ICHK)               ;DO CHECKS
          IF (ICHK.EQ.1)GOTO 350         ;IF CHECK FIND SOMETHING WRONG
330 IF (ICK.EQ.0)GOTO 340              ;IF NO ZONES IN THIS GROUP
          CALL CLOSE (ICHN1,IER)
          CALL FSTORE (IFIN,0,IER)
          CALL FORKP (IFINE,IFIN,IER)
340 IF (IFNM.NE.NUM)GOTO 20
350 CALL EXIT
          END
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C
C
      SUBROUTINE RDSW (IDA,IFIL,IZ,NUM,NBLT,NBLD) ;READ THE SWITCHES
      COMMON/ZONES/ M(69),MN(4),ICH(9),IDT(2),IFNM,ICM
      COMMON /QARDQ/ IOUTU(80)
      DIMENSION ICE(7),ICEU(14),IDA(5),IFIL(3)
      INTEGER DAT(7),SW(2)
      IZ=1                    ;EASTERN TIME ZONE
      NUM=0
      NBLD=0
      NBLT=0
      DO 10 I=1,9
   10 ICH(I)=0
      IDT(1)=60K
      IDT(2)=60K
      DO 20 I=1,69
   20 M(I)=1
      CALL GCHN (ICHN3,IER)
      CALL OPENN (ICHN3,"ICE2.CM",0,IER)
      CALL RDL (ICHN3,ICE,NB,IER)  ;READ COMMAND LINE
      CALL UNPACK (ICE,NB,ICEU)
      ICM=0
      DO 30 I=1,NB
      IF (ICEU(I).EQ.57K.AND.ICEU(I+1).EQ.124K)ICH(4)=1   ;TIME
      IF (ICEU(I).EQ.57K.AND.ICEU(I+1).EQ.101K)ICM=ICM+1 ;AMENDMENTS
      IF (ICEU(I).EQ.57K.AND.ICEU(I+1).EQ.103K)ICM=ICM+2 ;CORRECTIONS
      IF (ICEU(I).EQ.15K)GOTO 40
   30 CONTINUE
   40 IB=1
      CALL FCOM (IS,IER)
   50 CALL COMCM (IS,DAT,N,SW,IER)       ;READ MACRO COMMAND LINE
      IF (IER.EQ.9)GOTO 200
      IF (ISWSE(SW,"B"))GOTO 60       ;BEGINNING ZONE #
      IF (ISWSE(SW,"A"))GOTO 150      ;FOR AMENDMENTS
   54 IF (ISWSE(SW,"C"))GOTO 160      ;FOR CORRECTIONS
   55 IF (ISWSE(SW,"L"))GOTO 110      ;FOR LAST ZONE #
      IF (ISWSE(SW,"Z"))GOTO 190      ;FOR SETS OF ZONES
      IF (ISWSE(SW,"I"))GOTO 170      ;INPUT LOCATION
      IF (ISWSE(SW,"N"))IZ=2          ;CENTRAL TIME
      IF (ISWSE(SW,"M"))IZ=3          ;MOUNTAIN TIME
      IF (ISWSE(SW,"P"))IZ=4          ;PACIFIC TIME
      IF (ISWSE(SW,"O"))ICH(1)=1      ;MSG ZONES
      IF (ISWSE(SW,"R"))ICH(2)=1      ;RPTD ZONES
      IF (ISWSE(SW,"T"))ICH(4)=1      ;TIME
      IF (ISWSE(SW,"G"))ICH(5)=1      ;DOLLAR SIGNS
      IF (ISWSE(SW,"F"))ICH(3)=1      ;ZONES WITH -
      IF (ISWSE(SW,"D"))ICH(6)=1      ;PERIODS AT BEGINNING
      IF (ISWSE(SW,"X"))ICH(7)=1      ;SEND TO ALL
      IF (ISWSE(SW,"E"))ICH(8)=1      ;DELETE BLANK LINES AFT $$
      IF (ISWSE(SW,"J"))NBLT=1        ;NO BLANK LINE AFT TIME LINE
      IF (ISWSE(SW,"K"))NBLD=1        ;NO BLANK LINE BEFORE $$
      GOTO 50
   60 CALL UNPACK (DAT,14,IOUTU)                  ;GET BEGINNING ZONE #
      IF (IOUTU(1).LT.60K.OR.IOUTU(1).GT.71K)GOTO 70 ;IF NOT #
      N=N-1
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        IB=INTCVT(1,N)
        IF (IB.EQ.0)IB=1
        GOTO 50
  70 N=N-2                              ;FOR SECOND OR THIRD SET
        IB=INTCVT(2,N)
        IF (IDT(1).EQ.IOUTU(1))GOTO 80 ;SECOND SET
        IF (IDT(1).NE.60K)GOTO 90
        IDT(1)=IOUTU(1)
  80 IB=IB+50
        GOTO 50
  90 IF (IDT(2).EQ.IOUTU(1))GOTO 100 ;THIRD SET
        IDT(2)=IOUTU(1)
 100 IB=IB+60
        GOTO 50
 110 CALL UNPACK (DAT,14,IOUTU)                    ;LAST ZONE #
        IF (IOUTU(1).LT.60K.OR.IOUTU(1).GT.71K)GOTO 120 ;IF NOT #
        N=N-1
        IC=INTCVT(1,N)
        GOTO 130
 120 N=N-2                              ;FOR SECOND AND THIRD SET
        IC=INTCVT(2,N)
        IF (IDT(1).EQ.IOUTU(1))IC=IC+50  ;SECOND SET
        IF (IDT(2).EQ.IOUTU(1))IC=IC+60  ;THIRD SET
 130 DO 140 I=IB,IC
 140 M(I)=0
        GOTO 50
 150 IF (ICM.EQ.0.OR.ICM.EQ.2)ICM=ICM+1   ;FOR AMENDMENTS
        GOTO 54
 160 IF (ICM.EQ.0.OR.ICM.EQ.1)ICM=ICM+2   ;FOR CORRECTIONS
        GOTO 55
 170 DO 180 I=1,5
 180 IDA(I)=DAT(I)                    ; INPUT WORK LOCATION
        IF (N.LE.9)IDA(5)=20000K
        IF (N.EQ.8)IDA(4)=IDA(4)+40K
        GOTO 50
 190 NUM=NUM+1                         ;ZONE SETS
        IF (NUM.EQ.1)IFIL(1)=DAT(1)      ;FIRST SET
        IF (NUM.EQ.2)IFIL(2)=DAT(1)      ;SECOND SET
        IF (NUM.EQ.3)IFIL(3)=DAT(1)      ;THIRD SET
        GOTO 50
 200 RETURN
        END
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C
C
      SUBROUTINE HEDR (ICHN1,ICHN2,IFIN,IAR,IZ)
      COMMON/ZONES/ M(69),MN(4),ICH(9),IDT(2),IFNM,ICM
      COMMON/HED/ IHDR(10),IHED(11),ITYP(2)
      DIMENSION IHEDU(80),ITYPU(4),IFIN(5),IFINU(10),IAR(20)
      DATA IHDR/"----------00",177777K,177777K,2000K,"<305><200>"/
      DATA IHED/"WOUS00 K--- DDHHMM    "/,ITYP/"/N  "/
      DO 10 I=1,4
   10 IHDR(I)=IFIN(I)             ;OUTPUT LOCATION
      IF (ICH(7).EQ.1)GOTO 20 ; IF X SWITCH SET
      IHDR(5)=IFIN(5)+60K        ;ADDRESS TO 000
      GOTO 30
   20 IHDR(5)=IFIN(5)+101K       ;ADDRESS TO ALL
      IHDR(6)="LL"
   30 IF (IFNM.GT.1)GOTO 80      ; IF SECOND OR THIRD SET
      CALL MMHDR (IZ,IAR,IER)
      DO 40 I=1,3
   40 IHED(I+6)=ISHFT(IAR(I*2-1)+60K,8)+IAR(I*2)+60K  ;DTG IN WOUS HEADER
      IF (ICM.EQ.0)GOTO 80
      ICH(1)=1
      IHDR(9)=2013K
      IF (ICM.EQ.1.OR.ICM.EQ.3)ICH(4)=1  ; IF AMEND USE SYSTEM TIME
      IF (ICM.EQ.2.OR.ICM.EQ.3)GOTO 60   ;CORRECTION
      ITYP(1)=27501K                     ;/A
      IHED(10)=20101K                    ;PUT AMD IN HEADER
      IHED(11)=46504K
      GOTO 80
   60 IHED(10)=20103K                    ;PUT COR IN HEADER
      IHED(11)=47522K
      IF (ICM.EQ.3)GOTO 70
      ITYP(1)=27503K                     ;/C
      GOTO 80
   70 ITYP(1)=27501K                     ;/AC
      ITYP(2)=41440K
   80 DO 90 I=1,80
   90 IHEDU(I)=40K
      CALL WRS (ICHN1,IHDR,20,IER)          ;WRITE ADDRESS HEADER
      CALL UNPACK (IHED,22,IHEDU)
      CALL UNPACK (IFIN,10,IFINU)
      DO 100 I=1,3
  100 IHEDU(I+8)=IFINU(I)            ;PUT NODE ID IN WOUS HEADER
      CALL WRT (ICHN1,IHEDU)                ;WRITE WOUS HEADER
      IBL=6412K
      CALL WRS (ICHN1,IBL,2,IER)            ;WRITE BLANK LINE
      CALL UNPACK (ITYP,4,ITYPU)
      CALL CMPARE (ICHN1,ICHN2,ITYPU,0,IHEDU) ;LOOK FOR AND WRITE IST LINE
      ITYPU(2)=117K                          ;/OF
      ITYPU(3)=106K
      CALL CMPARE (ICHN1,ICHN2,ITYPU,0,IHEDU) ;WRITE OFFICE NAME
      RETURN
      END
```

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C
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C
      SUBROUTINE CMPARE (ICHN1,ICHN2,IZN,IW,IUP,K,IAC)
      COMMON/ZONES/ M(69),MN(4),ICH(9),IDT(2),IFNM,ICM
      COMMON/CMP/IAMD(5),IAMDS(3),ICOR(7),ICORS(3)
      DIMENSION IZN(4),IUP(80),INM(40),INMUP(80),IAMDU(10),IAMDSU(6),
     CICORU(13),ICORSU(5)
      DATA IAMD/"...UPDATED"/,IAMDS/"..UPDT"/,ICOR/"...CORRECTION"/
      DATA ICORS/"..COR"/
      REWIND ICHN2
      K=0
   10 DO 20 I=1,40
      INM(I)=20040K
   20 CONTINUE
      CALL RDL (ICHN2,INM,NB,IER)   ;READ LINE FROM .DT FILE
      IF (IER.EQ.9)GOTO 170
      NB=NB-10
      CALL UNPACK (INM,80,INMUP)
      DO 30 I=1,5
      IF (INMUP(I).EQ.57K) GOTO 40     ;LOOK FOR / IN CODE
   30 CONTINUE
      GOTO 10
   40 IF (IZN(1).EQ.INMUP(I).AND.IZN(2).EQ.INMUP(I+1).AND.IZN(3).EQ.INMUP(I+2)
     C.AND.IZN(4).EQ.INMUP(I+3))GOTO 50   ;LOOK FOR MATCHING CODE
      IF(K.EQ.1)GOTO 170
      GOTO 10
   50 DO 60 I=72,80
      IUP(I)=40K
   60 CONTINUE
      DO 70 I=1,71
   70 IUP(I)=INMUP(I+9)     ;REMOVE FIRST NINE CHARACTERS FROM LINE
      K=1
      IF (IW.EQ.1)GOTO 170  ;IF LINE IS TO BE RETURNED
      IF (IAC.EQ.1)GOTO 90   ;AMENDMENT
      IF (IAC.EQ.2)GOTO 130 ;CORRECTION
   80 CALL WRT (ICHN1,IUP)  ;WRITE LINE
      GOTO 10
   90 IF (NB.GT.59)GOTO 110            ;FOR ..UPDT
      CALL UNPACK (IAMD,10,IAMDU)   ;FOR ...UPDATED
      DO 100 I=1,10
  100 IUP(I+NB)=IAMDU(I)
      GOTO 80
  110 IF (NB.GT.64)GOTO 80            ;LINE TOO LONG FOR ..UPDT
      CALL UNPACK (IAMDS,6,IAMDSU)
      DO 120 I=1,6
  120 IUP(I+NB)=IAMDSU(I)
      GOTO 80
  130 IF (NB.GT.56)GOTO 150           ;FOR ..COR
      CALL UNPACK (ICOR,13,ICORU)     ;FOR ...CORRECTION
      DO 140 I=1,13
  140 IUP(I+NB)=ICORU(I)
      GOTO 80
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150 IF (NB.GT.65)GOTO 80          ;LINE TOO LONG FOR ..COR
    CALL UNPACK (ICORS,6,ICORSU)
    DO 160 I=1,5
160 IUP(I+NB)=ICORSU(I)
    GOTO 80
170 RETURN
    END
```

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C
C
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C
      SUBROUTINE DATIM (ICHN1,ICHN2,IUPU,ITIM,IBL,IAR) ;FINDS TIME
      COMMON/ZONES/ M(69),MN(4),ICH(9),IDT(2),IFNM,ICM
      COMMON /DATM/ ITP(2)
      COMMON /QARDQ/ IOUTU(80)
      DIMENSION IAR(20),IUPU(80),ITPU(4),IOUTP(80)
      DATA ITP/"/T0 "/
      DO 5 I=1,80
      IOUTP(I)=IOUTU(I)
      IUPU(I)=40K
    5 IOUTU(I)=40K
      CALL UNPACK (IAR,40,IOUTU)
      ITIM=1
      DO 10 I=13,17        ;FIND LOCAL TIME AND CONVERT TO INTEGER
      II=I-13
      IF (IOUTU(I).LT.60K.OR.IOUTU(I).GT.71K)GOTO 20
      IUPU(I-12)=IOUTU(I)
   10 III=I
   20 IF (ICH(4).EQ.1)GOTO 40
      IT=INTCVT (13,II)
      IF (IT.GT.100.AND.IT.LT.530.AND.IOUTU(I).EQ.101K)ITP(2)=30440K ;/T1
      IF (IT.GT.100.AND.IT.LT.530.AND.IOUTU(I).EQ.120K)ITP(2)=31440K ;/T2
      IF (IT.GT.800.AND.IT.LT.1130.AND.IOUTU(I).EQ.101K)ITP(2)=31040K;/T3
      IF (IT.GT.700.AND.IT.LT.1130.AND.IOUTU(I).EQ.120K)ITP(2)=32040K;/T4
      IF (ITP(2).EQ.30040K)GOTO 40     ;SYSTEM TIME
      CALL UNPACK (ITP,4,ITPU)
      CALL CMPARE (ICHN1,ICHN2,ITPU,1,IUPU)   ;FIND TIME IN .DT FILE AND RETURN
      DO 36 I=2,5                              ;FIND END OF LINE
      IF (IUPU(I).EQ.15K)GOTO 40
      II=I
   36 CONTINUE
   40 II=II+1
      IUPU(II)=40K
      IV=40-III
      DO 45 I=1,IV
   45 IUPU(I+II)=IOUTU(I+III)
      CALL WRT (ICHN1,IUPU)          ;WRITE THIRD LINE OF MASS MEDIA HEADER
      CALL WRS (ICHN1,IBL,2,IER)        ;WRITE BLANK LINE
      DO 55 I=1,80
   55 IOUTU(I)=IOUTP(I)
      RETURN
      END
```

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C
C
      SUBROUTINE ZONUM (ICHN1,ICHN2,M1,M2,IUP,ICK,ICK1,IFZN,ICHK) ;ZONE #
      COMMON/ZONES/ M(69),MN(4),ICH(9),IDT(2),IFNM,ICM
      DIMENSION IUP(80),IUPU(80),IUP1(80),IZN(4),IUP2(80)
      IZONE=0                        ;SET ZONE GROUP COUNTER TO 0
      ICK1=0
      IAC=0                          ;SET AMENDMENT/CORECTION COUNTER TO 0
      I1=0
      IT=0
      IF (IFZN.EQ.1.OR.ICH(3).NE.1)GOTO 45 ;IF FAKE ZONE OR F SWITCH NOT SET
      IZN(1)=57K                ; }
      IZN(2)=132K               ; } SET /ZN
      IZN(3)=116K               ; }
      IZN(4)=40K                ; }
      CALL CMPARE (ICHN1,ICHN2,IZN,1,IUP2,IZONE) ;SEARCH .DT FOR /ZN
      DO 10 I=1,72                   ;CHECK FOR END OF LINE
      I2=73-I
      IF (IUP2(73-I).EQ.15K.OR.IUP2(73-I).EQ.12K)IUP2(73-I)=40K
      IF (IUP2(73-I).NE.40K)GOTO 20
10    CONTINUE
20    IV=I2
      DO 40 I=1,80
40    IUPU(I)=40K
45    IF (IFNM.GT.1)GOTO 49
      IF (MN(2).NE.MN(3))MN(1)=1 ;SET $$ CHECK COUNTER TO 1 IF # OF $$ INCOR.
      M2=M2+1                        ; INCREASE PERIOD COUNTER BY 1
      IF (M1.LT.2.AND.M2.GT.1)MN(4)=1;SET . CHECK COUNTER TO 1 IF # OF . INCOR.
      IF (IFZN.EQ.0)GOTO 48
      M1=2
      GOTO 49
48    M1=0                           ;PERIOD COUNTER TO 0
      MN(2)=MN(2)+1                  ; INCREASE $$ COUNTER BY 1
49    K=1                            ;BEGIN LOOKING FOR ZONE NUMBERS
50    N=K
      NN=K+2
      DO 80 K=N,NN
      IF (IUP(K).NE.57K)GOTO 80 ;IF NOT /
      L=K-1
      DO 60 I=1,4
60    IZN(I)=40K
      IF (IUP(L+1).EQ.57K.AND.IUP(L+2).EQ.101K.AND.IUP(L+3).EQ.57K)GOTO 220;/A
      IF (IUP(L+1).EQ.57K.AND.IUP(L+2).EQ.103K.AND.IUP(L+3).EQ.57K)GOTO 230;/C
      DO 70 I=1,4
      II=I
      LL=L+I
      IZN(I)=IUP(LL)                          ;IZN = /##
      IF (IUP(K+I).EQ.57K.OR.IUP(K+I).EQ.40K.OR.IUP(K+I).EQ.15K)GOTO 100
70    CONTINUE
80    CONTINUE
      IF (I1.EQ.0)GOTO 270      ;GLOBAL SWITCH F NOT SET
      IF (IT.EQ.1)IUP2(I2)=00K  ;GLOBAL SWITCH F SET AND ONLY 1 ZONE FOUND
      CALL WRT (ICHN1,IUPU)     ;WRITE LINE WITH ZONE #'S AND -
      CALL WRT (ICHN1,IUP2)     ;WRITE STATE NAME AND ZONE # LINE
      GOTO 270
```

```
100 IF (ICH(3).EQ.1.OR.IFZN.EQ.1)GOTO 140  ;IF GLOBAL SWITCH F SET
    CALL CMPARE (ICHN1,ICHN2,IZN,0,IUP1,IZONE,IAC);FIND AND WRITE ZONE NAME
    GOTO 190
120 CALL WRT (ICHN1,IUPU)    ;WRITE LINE WITH ZONE #'S AND -
    I1=0
    DO 130 I=1,80
130 IUPU(I)=40K
    GOTO 150
140 CALL CMPARE (ICHN1,ICHN2,IZN,1,IUP1,IZONE,IAC);FIND AND RETURN ZONE NAME
    IF (IZONE.EQ.0)GOTO 195            ;IF NO MATCHING ZONE NAME FOUND
    IF (IFZN.EQ.1)GOTO 190
    IF (I1.GE.65)GOTO 120              ;IF LINE 65 CHARACTERS OR LONGER
150 DO 160 I=1,5
160 IUPU(I+I1)=IUP1(I)                 ;ADD 5 CHARACTER ZONE NAME TO LINE
    I1=I1+5                            ;INCREASE COUNTER BY 5
    IT=IT+1
    IV=IV+1
    IUP2(IV)=40K
    DO 180 I=2,4
    IF (IZN(I).GE.60K.AND.IZN(I).LE.71K)GOTO 170  ;IF NOT #
    GOTO 180
170 IV=IV+1
    IUP2(IV)=IZN(I)
180 CONTINUE
190 IF (IZONE.EQ.1)ICK=1               ;IF ZONE # FOUND
    IF (IZONE.EQ.1)ICK1=1              ;IF ZONE # FOUND
195 K=K+II                            ;MOVE II SPACES
    IF (IFNM.GT.1.OR.IFZN.EQ.1)GOTO 50  ;IF SECOND OR THIRD SET OF ZONES
    IF (IZN(2).LT.60K.OR.IZN(2).GT.71K)GOTO 200 ;IF NOT #
    LL=L+2
    III=II-1
    IF (III.GE.2.AND.IZN(2).EQ.60K)GOTO 50
    GOTO 210
200 IF (IZN(3).LT.60K.OR.IZN(3).GT.71K)GOTO 50
    LL=L+3
    III=II-2
    IF (III.GE.2.AND.IZN(3).EQ.60K)GOTO 50
210 INUM=INTCVT(LL,III)
    IF (IZN(2).EQ.IDT(1).AND.IDT(1).NE.60K)INUM=INUM+50 ;SECOND SET
    IF (IZN(2).EQ.IDT(2).AND.IDT(2).NE.60K)INUM=INUM+60 ;THIRD SET
    IF (INUM.EQ.0)GOTO 50
    M(INUM)=M(INUM)+1
    GOTO 50
220 IF (ICM.EQ.0.OR.ICM.EQ.2)GOTO 240 ;FOR AMENDMENTS
    IAC=1
    GOTO 260
230 IF (ICM.EQ.0.OR.ICM.EQ.1)GOTO 250 ;FOR CORRECTIONS
    IAC=2
    GOTO 260
240 CALL FORKE ("ZONES","/A-NO AMD HDG",IER)
    GOTO 255
250 CALL FORKE ("ZONES","/C-NO COR HDG",IER)
255 ICHK=1
260 K=K+2
    GOTO 50
270 RETURN
    END
```

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C
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      SUBROUTINE WRT (ICHN1,IUP,IB)
      COMMON/ZONES/ M(69),MN(4),ICH(9),IDT(2),IFNM,ICM
      DIMENSION IUP(80),IOUT(40)
      IB=0
      DO 10 I=1,72                       ;LOOK FOR END OF LINE
      II=74-I
      IF (IUP(73-I).EQ.15K.OR.IUP(73-I).EQ.12K.OR.IUP(73-I).EQ.0K)IUP(73-I)=40K
      IF (IUP(73-I).NE.40K)GOTO 100
   10 CONTINUE
      IF (ICH(8).EQ.1.AND.ICH(9).EQ.1)GOTO 120
      IB=1
      IOUT(1)=6412K              ;PUT CARRIAGE RETURN AND LINE FEED
      N=2
      GOTO 110
  100 ICH(9)=0
      IUP(II)=15K
      IUP(II+1)=12K
      N=II+1
      CALL PACK (IUP,80,IOUT)
  110 CALL WRS (ICHN1,IOUT,N,IER)
  120 RETURN
      END
```

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C
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      SUBROUTINE CHEK (ICHK)
      COMMON/ZONES/ M(69),MN(4),ICH(9),IDT(2),IFNM,ICM
      COMMON/CHK/INAME(6),INAM2(6)
      DIMENSION INME(12),NAME(6)
      DATA INAME/"/------ MSG"/,INAM2/"/------ RPTD"/
      IT=0
      IZ=1
      IF (ICH(1).EQ.1.AND.ICH(2).EQ.1)GOTO 90   ;IF SWITCH O AND R SET
   10 DO 30 I=IZ,69
      IF (ICH(2).EQ.1)GOTO 20      ;IF SWITCH R SET
      IF (M(I).GT.1)GOTO 50        ;IF REPEATED
      IF (ICH(1).EQ.1)GOTO 30      ;IF SWICH O SET
   20 IF (M(I).LT.1)GOTO 40        ;IF MISSING
   30 CONTINUE
      GOTO 90
   40 CALL UNPACK (INAME,12,INME)  ;FOR MISSING ZONE #
      GOTO 60
   50 CALL UNPACK (INAM2,12,INME)  ;FOR REPEATED ZONE #
   60 ICHAR=2
      IZ=I+1
      IF (I.LT.50)GOTO 80
      IF (I.GE.50.AND.I.LE.59)GOTO 70
      I=I-60
      IT=2
      GOTO 80
   70 I=I-50
      IT=1
   80 CALL UBNDEC (I,INME,ICHAR)
      IF (IT.EQ.1)INME(2)=IDT(1)     ;SECOND SET
      IF (IT.EQ.2)INME(2)=IDT(2)     ;THIRD SET
      CALL PACK (INME,12,NAME)
      CALL FORKE ("ZONES",NAME,IER)
      ICHK=1                         ;SET ERROR COUNTER TO 1
      IF (IZ.GT.69)GOTO 90
      IF (I.EQ.0)GOTO 90
      GOTO 10
   90 IF (ICH(5).EQ.1)GOTO 100     ;IF SWITCH G SET
      IF (MN(2).EQ.MN(3).AND.MN(1).EQ.0)GOTO 100
      CALL FORKE ("ZONES","$$ MSG/RPTD",IER)
      ICHK=1                         ;SET ERROR COUNTER TO 1
  100 IF (ICH(6).EQ.1.OR.MN(4).EQ.0)GOTO 110   ;IF D SWITCH SET/2 PDS. FOUND
      CALL FORKE ("ZONES",". BGN LN MSG",IER)
      ICHK=1                         ;SET ERROR COUNTER TO 1
  110 CALL FORK ("LAST CHECK",IER)
      RETURN
      END
```

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