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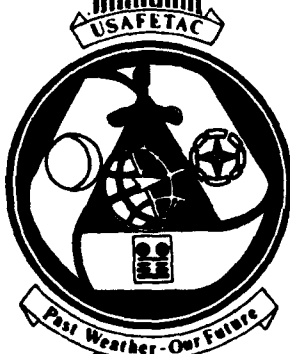
USAFETAC ONLINE CLIMATOLOGY DIAL-IN SERVICE USERS MANUAL

by

MSgt Robert G. Pena

FEBRUARY 1994

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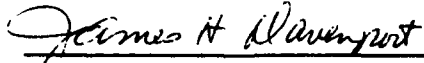
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Scott Air Force Base, Illinois, 62225-5116

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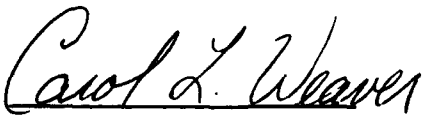
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13. Abstract: Tells users of the USAF Environmental Technical Applications Center's (USAFETAC's) Online Climatology Dial-In Service how to gain direct access (through PC and modem) to certain climatological applications available on USAFETAC's IBM 3090 mainframe computer. Dial-In services, available to any agency of the U.S. Government, are provided upon validation of a support assistance request submitted in accordance with AFP 15-118, *Air Force Weather Support System*, and USAFETAC/TN-94/001, *Capabilities, Products, and Services of USAFETAC*. In the first 14 chapters, the manual describes the program and tells how to use it. Each currently available application (surface, upper-air, and utilities) is described in detail by three appendices.
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PREFACE

This manual describes the climatological applications currently available on USAFETAC's Online Dial-In Service, and tells how to gain access to them. Dial-In offers Department of Defense (or any U.S. Government agency) users direct access, via modem, to certain climatological applications (surface, upper-air, and utilities) on the IBM 3090 mainframe computer at Scott AFB, IL. Online access, which became operational in 1992, makes climatological data quickly and easily available. Although many dial-in applications finish processing within minutes, some require tape resources that contend with other tape-based applications. Because of that, USAFETAC can only guarantee that requested products will be available within 24 hours.

Dial-In uses a batch-type communication technique called "Advanced Program-to-Program Communication (APPC)." Dial-In works cooperatively with Network Software Associates (NSA) AdaptSNA APPC software to allow information exchange between your computer and the USAFETAC mainframe, through another small computer at USAFETAC. Dial-In also has a "messaging" capability; that is, users can communicate with USAFETAC through their computers. If users need help with Dial-In, they can get it by using the two-way message system.

USAFETAC services are not limited to the software currently accessible with Dial-In. Users with requirements for other applications should submit a support assistance request (IAW AFP 15-118 and USAFETAC/TN-94/001) to USAFETAC/DOO.

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Accession For	
NTIS GRA&I	☒
DTIC TAB	☐
Unannounced	☐
Justification	
By	
Distribution	
Availability Codes	
Dist	Avail and/or Special
A-1	

Chapter 1

INTRODUCTION TO DIAL-IN

What Is Dial-In?

USAFETAC developed Dial-In to support quick turn-around climatology projects for engineers, planners, and contingency forces. It makes certain climatological applications on USAFETAC'S IBM 3090 mainframe computer available to any Department of Defense or U.S. Government agency via modem. The program, which features "point and click" commands, is as user-friendly as USAFETAC could make it. As will be explained in subsequent chapters, Dial-In's main display contains a column of 3-D control buttons. Each application prompts you with a dialog window that asks for the required information. With the press of a button, your information is passed to USAFETAC's computer and processed. You can then end the session or submit another request.

Applications

Applications currently available are described in Appendices A (Surface Applications), B (Upper-Air Applications), and C (Utilities). Most of the applications available are in the Surface category. The Upper-Air category includes icing probability and extracted data for selected stations and periods. The Utilities category offers "Nearest 50 Stations" data and a station locator.

Hardware/Software Requirements.

- IBM-compatible, 286-based personal computer with 640KB main memory.
- 1.5 MB of available hard-disk space.
- MS DOS version 3.2 or better.
- EGA display (256KB) memory.
- 100% Hayes-compatible 2400-baud modem.
- A Microsoft-compatible mouse is highly recommended.

Requesting Dial-In Services

Submit a support assistance request (SAR) to USAFETAC/DOO, 859 Buchanan St, Scott AFB IL 62225-5116. For SAR preparation instructions, see AFP 15-118, *Air Force Weather Support System*, and USAFETAC/TN-94/001, *Capabilities, Products, and Services of USAFETAC*. Applications possible through Dial-In are not necessarily limited to those currently available and listed in this users manual. If you have a requirement for other applications that are not now available, describe them in a SAR.

Turn-around Times

Although many Dial-In applications finish processing within minutes, some require tape resources that compete with other tape-based applications. For that reason, USAFETAC can only guarantee that requested products will be available within 24 hours. There is no limit to the number of requests you can submit, but our ability to provide a 24-hour turn-around may be affected by the number and types of those requests.

Software and Messaging

Dial-In uses a batch-type communication technique called "Advanced Program-to-Program Communication (APPC)." Dial-In works cooperatively with Network Software Associates (NSA) AdaptSNA APPC software to allow information exchange between the user's computer and the USAFETAC mainframe, through another small computer at USAFETAC. If users need help with Dial-In, they can communicate with USAFETAC through a two-way message system built-in to Dial-In and described in Chapters 9 and 10.

License Agreement

Your validated support assistance request (SAR) authorizes USAFETAC to provide you with the commercial software incorporated in the Dial-In

program. Your user's package includes a copy of the license agreement from Network Software Associates (NSA). The NSA software, which sells for \$110.00 a copy, is *For Official Use Only*. USAFETAC can only release it with a validated SAR. For more information, call USAFETAC/DOO at DSN 576-4024 or (618) 256-4024.

Tactical Applications

Although tactical systems don't require additional

hardware/software to access the USAFETAC computer, we cannot guarantee that Dial-In will work properly on all types of tactical systems. This does not mean that we have abandoned support to deployed forces; Dial-In is still under development, and we'll continue to work with operators on their tactical requirements. Users who plan to use Dial-In software for mobility should load and try it well in advance so that USAFETAC can help insure success.

Chapter 2

GETTING STARTED AND LOGGING ON

Familiarization

Dial-In was designed to operate both online and offline. Before you log on to the ETAC computer, we recommend you take time to familiarize yourself with all of the program documentation and practice operating the program offline first.

Installation

First, install the program software while referring to the DIALIN 1.0 Installation Guide. After completing the installation, read the documentation before operating the program offline. To run offline, enter the following commands from the DOS prompt:

```
CD \DIALIN <Enter>
DIALIN /E <Enter>
```

Logging In

The program is now loaded in offline mode. You can go through most Dial-In capabilities by following the directions in Chapters 3 through 11. When you're ready to go online (that is, communicate with the ETAC computer), quit the program and follow the log-on instructions. From the DOS prompt, issue the following commands:

```
CD \DIALIN <Enter>
ETAC <Enter>
```

You will first see a title screen. Press Esc to continue. You now see a screen like the one in Figure 2-1. Enter your User ID and Password and press Enter. The program will call the ETAC computer and establish a session. Dial-In will notify you when a session has been established. Selecting Cancel terminates the program. If you accidentally enter the wrong User ID or PASSWORD, the session is terminated and you will have to restart the program, as described above.

USAFETAC DIALIN Version 1.0

Start on App

Upper Air Apps

Utility Apps

View Job Status

Download Result

View Result

Delete Result

View Message

Send Message

Help

Quit

Shell to DOS

LOGON PANEL

Please enter your user ID and password.

User ID:

Password:

< Submit > < Cancel >

Help <F10> Exit <Enter> Select Item <Up/Down> Next/Previous Select

Figure 2-1. The Logon Panel.

Chapter 3

MAIN DISPLAY

The Main Display Screen

As shown in Figure 3-1, the Dial-In main display screen is in three sections: the Control Buttons are on the left, a large Log Area is on the right, and a "Hints" menu runs across the bottom.

The Control Buttons. The control buttons shown in Figure 3-1 are activated by highlighting the appropriate button and pressing **Enter** (see "Moving Around in Dial-in," next page), or by pressing the control button Hot Key (the highlighted letter on each control button). Control button functions are:

- **Surface Apps** - creates climatologies of surface weather phenomena.
- **Upper Air Apps** - creates climatologies of upper-air weather phenomena.
- **Utility Apps** - provides block station information.
- **View Job Status** - displays job status.
- **Download Results** - gets list of completed jobs.
- **View Results** - reads downloaded jobs results.
- **Delete Results** - deletes files from the ETAC computer.

USAF/ETAC DIALIN Version 1.0	
Start in OFF Upper Air Apps Utility Apps View Job Status Download Results View Results Delete Results View Message Send Message Help Quit Shell to DOS	12:28:54 Sending Station Locator run cards 12:28:56 Request successfully transmitted 12:29:05 Sending Mean Coincident Wet Bulb run cards 12:29:07 Request successfully transmitted 12:29:14 Sending Wind Speed Summary run cards 12:29:16 Request successfully transmitted 12:29:23 Sending Distribution Summary run cards 12:29:25 Request successfully transmitted 12:29:31 Sending Summary of the RUSSMO run cards 12:29:33 Request successfully transmitted 12:29:39 Sending Sads Data Interpolator run cards 12:29:41 Request successfully transmitted 12:30:40 Sending Station Locator run cards 12:30:42 Request successfully transmitted 12:32:39 Downloading WINDSPD.TXT 12:32:40 WINDSPD.TXT was downloaded successfully
<F1> Help <F10> Quit <Enter> Select Item <Down/Up> Next/Previous Selection	

Figure 3-1. The Main Display Screen.

- **View Message** - reads messages stored on the ETAC computer. You should check your messages every time you log on to ETAC's computer.
- **Send Message** - sends messages to ETAC.
- **Help** - gets help on program.
- **Quit** - Logs you off the ETAC computer and quits the program.
- **Shell to DOS** - runs DOS commands.

The Log Area

The right-hand portion of the main display screen displays a summary of transactions. The log is also be copied to a file named "LOG.FIL" and stored in the **\\DIALIN\\DOWNLOAD** directory.

Hints Menu

The following hints are displayed at the bottom of the Main Display screen—see Figure 3-1.

<F1> Help

Performs the same function as the **Help** control button.

<F10> Quit

Performs the same functions as the **Quit** control button.

<Enter> Select Item

Selects an item. When the screen offers multiple selections, use the **Tab/Shift Tab** or the **Up/Down** arrow keys to maneuver through them.

<Down/Up> Next/Previous Selection

The **Up/Down** arrow keys let you move to the Previous or Next selection.

Moving Around in Dial-In

The following key functions describe actions that take place when that key is pressed:

- **Tab** - Moves the cursor to next input box or control button.
- **Shift Tab** - Moves the cursor to previous input box or control button.
- **Space Bar** - Selects or deselects on/off buttons.
- **Up/Down Arrows** - Moves the cursor to previous/next control button.
- **Left Mouse Button** - Same as **Enter**.
- **Right Mouse Button** - Same as **Esc**.

Chapter 4

RUNNING AN APPLICATION

Surface Applications (Appendix A)

Surface applications run against the DATSAV2 surface dataset, which consists of worldwide weather observations collected through the USAF Automated Weather Network (AWN). These observations are decoded at the Air Force Global Weather Central (AFGWC), Offutt AFB, NE, and stored on magnetic tape at USAFETAC, Scott AFB, IL, and at USAFETAC's Operating Location A at Asheville, NC. The surface database contains synoptic, METAR, SMARS, AMOS, AERO, MARS, and airways observations. Appendix A gives details.

Upper-Air Applications (Appendix B)

Upper-air applications run against the DATSAV upper-air dataset, which contains rawinsonde and pilot balloon observations derived from reports

received at AFGWC over the AWN. These observations are hydrostatically checked before they are sent to USAFETAC. Appendix B gives details.

Utility Applications (Appendix C)

These are general purpose utilities that help locate Block Station information by running against the Air Weather Service Master Station Catalog (AWSMSC), a comprehensive list of weather observing stations current to the last 9 months. The AWSMSC lists name, identifier, location, types of data reported, field elevation, pressure reporting locations, equipment types, etc., for every reporting station. USAFETAC Receives the AWSMSC via GEON (the Global, ETAC, OL-A Network) from Tinker AFB, OK. Appendix C gives details.

Example Job Submission Sequence

The following example gives the three-step sequence of events that occur when you submit an application to the USAFETAC computer. To reduce delays and minimize telephone charges, you should familiarize yourself with the application abstracts in the Appendices before you log on to Dial-In.

Step 1 Select the appropriate control button (Surface Apps, Upper Air Apps, or Utility Apps) and a list of available applications will appear, as shown in Figure 4-1.

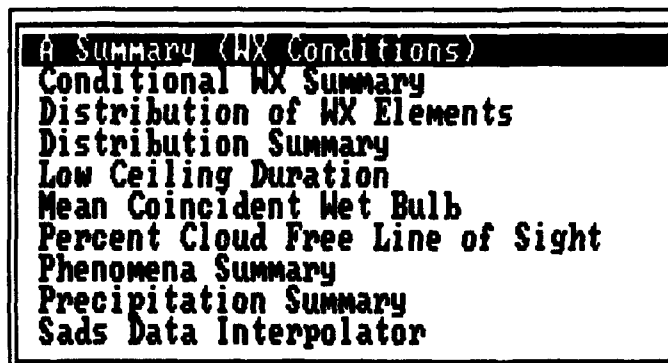


Figure 4-1. Example Applications List.

Step 2 Highlight the application you want to submit and press **Enter**. Customize your job by making entries in the input panel shown in Figure 4-2. *Note:* Use the **Tab/Shift Tab** key(s) to navigate inside the input panel. Select **Cancel** if you decide *not* to submit the application.

Step 3 Press **Enter** when you're satisfied that all input values are correct. The program creates the necessary inputs to submit your job and progressively displays messages; an example is shown in Figure 4-3.

PHENOMENA SUMMARY			
Block Station #:	*****		
Station Name:	Scott AFB		
POR Start Date:	7301 YYMM	End Date:	8612 YYMM
Local Time Conversion:	-06 HH	(- for West)	
Identifier:	USER TEXT TO DISTINGUISH JOBS		
< Submit >		< Cancel >	

Figure 4-2. Example Input Panel.

PREPARING APPLICATION RUN CARDS...

Figure 4-3. Example Program Response.

VIEWING JOB STATUS

Although status is updated automatically, you are not notified when the status changes and you should therefore check regularly. Most jobs take less than an hour to run, but some that require tape loads may take up to 24 hours.

Status messages and their meanings are shown below.

USAFETAC DIALIN Version 1.0	
Surface Apps	
Upper Air Apps	
Utility Apps	
Airport Status	
Download Results	
REQUEST BEING SUCCESSFULLY TRANSMITTED JOE COMPLETED SUCCESSFULLY WINDSPEED REPORT JOE COMPLETED SUCCESSFULLY DISTRIBUTION SUMMARY FOR SCOTT AFB JOE COMPLETED SUCCESSFULLY STATION ANALYSIS REQUEST BEING SUCCESSFULLY CREATING UTILITY STATIONS IN SOUTHWEST CONUS	
Send Message	12:29:25 Request successfully transmitted
Help	12:29:31 Sending Summary of the RUSSWO run cards
Quit	12:29:33 Request successfully transmitted
Shell to DOS	12:29:39 Sending Sads Data Interpolator run cards
	12:29:41 Request successfully transmitted
	12:30:40 Sending Station Locator run cards
	12:30:42 Request successfully transmitted

F1) Help F10) Quit (Enter) Select Item (Down/Up) Next/Previous Selection

- **Request Being Processed** - The job you submitted is either being worked on or is waiting for resources such as a tape or tape drive.
- **Job Completed Successfully** - The output is ready to be downloaded. See Chapter 6 for more information on downloading your results.

- **Results Already Downloaded** - The output has already been downloaded—these results can be deleted. See Chapter 8 for details on deleting files.
- **Tape Request** - The job you submitted will require a tape mount; it will be completed within 24 hours.

Chapter 6

DOWNLOADING RESULTS

Once you have verified that your job has been successfully completed, you can download the results to your PC by selecting the **Download Results** Control Button, as shown in Figure 6-1. When the list of files available for downloading appears, position the highlight bar on the file to be downloaded and press the **Space Bar** to select or deselect the highlighted file. Press **Enter** when you've made your selection.

When the Download Input Panel (see example in Figure 6-2) is displayed, type in the filename and extension (filename.ext) at the **File Name:** prompt and press **Enter**. The file will be downloaded and stored in the **DIALIN\DOWNLOAD** directory with the DOS filename that you have specified.

While the file is being downloaded, a window with the count of records will appear in the bottom right hand corner of the panel. The log portion of the screen will be updated when downloading is complete.

The screenshot shows the 'USAFETAC DIALIN Version 1.0' window. On the left is a vertical menu with buttons: 'Surface Apps', 'Upper Air Apps', 'Utility Apps', 'View Job Status', 'Download Results', 'View', 'Delete', 'View', 'Send Message', 'Help', 'Quit', and 'Shell to DOS'. The 'Download Results' button is highlighted. The main area displays a list of files for download:

File Name	Size	Unit
DISTRIBUTION SUMMARY FOR SCOTT AFB	47880	Bytes
MISSO	141880	Bytes
POINT ANALYSIS	47880	Bytes

Below the file list is a log of recent transmissions:

12:29:25	Request successfully transmitted
12:29:31	Sending Summary of the MISSO run cards
12:29:33	Request successfully transmitted
12:29:39	Sending Sads Data Interpolator run cards
12:29:41	Request successfully transmitted
12:30:40	Sending Station Locator run cards
12:30:42	Request successfully transmitted

At the bottom, a status bar shows: 'F1) Help <F10> Quit <Enter> Select Item <Down/Up> Next/Previous Selection'.

Figure 6-1. Example Download File List.

The screenshot shows the 'WINDSPEED REPORT' window. It contains a 'File Name:' prompt followed by a text box containing 'WINDSPEED REPORT.DAT'. Below this is the instruction 'Enter a DOS file name for the downloaded data.' and two buttons: '< Submit >' and '< Cancel >'.

Figure 6-2. Example Download Input Panel.

Chapter 7

VIEWING DOWNLOADED RESULTS

After you've downloaded your program results from the ETAC mainframe, you can view them by selecting the **View Results Control Button**. When you do, you'll see a list of the files that are in the **\DIALIN\DOWNLOAD** directory—see the example in Figure 7-1.

Position the highlight bar on the file you want to view and press the **Space Bar** to select or deselect the highlighted file. Press **Enter** when you've made your selection.

Once the file has been selected, the program displays the results with a full-screen browse utility.

Because many of the output results will be larger than the screen, use **Tab/Shift Tab** or the **Left/Right arrow** keys to view an entire large horizontally. Use **PgUp/PgDn** and the **Up/Down arrow** keys to view the entire file vertically.

USAFETAC DIALIN Version 1.0	
Surface Apps	
Upper Air Apps	
Utility Apps	
View Job Status	12:28:54 Station Locator run cards
Download Results	12:28:54 Station Locator run cards
View Results	12:29:08 Station Locator run cards
Delete Results	12:29:08 Station Locator run cards
View Message	12:29:11 Station Locator run cards
Send Message	12:29:11 Station Locator run cards
Help	12:29:11 Station Locator run cards
Quit	12:29:11 Station Locator run cards
Shell to DOS	12:29:11 Station Locator run cards
<F1> Help <F10> Quit <Enter> Select Item <Down/Up> Next/Previous Selection	

Figure 7-1. Example Downloaded File List.

Chapter 8

DELETING UNWANTED FILES

After verifying your downloaded data, delete any unwanted files left on the ETAC computer. To do so, select the **Delete Results** control button. A list of files available for deletion will appear as shown in Figure 8-1.

Position the highlight bar on the file(s) you want to delete and press the **Space Bar**. The files you identify for deletion are tagged with an arrow.

Press **Enter** when you have selected all the files you want to delete. The program will delete all tagged files and update your log.

USAFETAC DIALIN Version 1.0	
Surface Apps	
Upper Air Apps	
Utility Apps	
View Job Status	12:28:54 Sending Station Locator run cards
Download Results	
View	+ WINDSPEED REPORT 47000 Bytes ↑
Delete	STATION IN SOUTHWEST CONUS 141000 Bytes
View	WINDSPEED AT 30 KNOTS 47000 Bytes
Send Message	
Help	12:29:41 Request successfully transmitted
Quit	12:30:40 Sending Station Locator run cards
Shell to DOS	12:30:42 Request successfully transmitted
	12:32:39 Downloading WINDSPD.TXT
	12:32:40 WINDSPD.TXT was downloaded successfully
<F1> Help <F10> Quit <Enter> Select Item <Down/Up> Next/Previous Selection	

Figure 8-1. Example List of Files Available for Deletion. The first file has been tagged.

VIEWING MESSAGES FROM USAFETAC

Check your messages every time you logon to the ETAC computer by selecting the View Message control button. A list of messages available for download will be displayed, as shown in Figure 9-1. To download a message, position the highlight bar on the file that you want and press Enter. Press Esc to cancel an operation.

At the prompt shown in Figure 9-2, type in the filename.ext and press enter. The message is downloaded and stored in the \DIALIN\DOWNLOAD directory with the DOS filename you specified.

While the file is being downloaded, a window with the count of records will appear in the bottom right-hand corner of the screen. Once the file has been downloaded, the program will display the results with a full-screen browse utility.

Use the Arrow keys, PgUp/PgDn, Home or Ctrl-Left Arrow keys to move through the file. Press Esc to end the browse utility and return to the Main Display.

[illegible]

Figure 9-1. Example Message-File List.



SURFACE UPDATE

File Name: **SFCPKG.MSG**

Enter a DOS file name for
the downloaded data.

< Submit > **< Cancel >**

Figure 9-2. Example Message Panel with Filename.Ext Entered.

Chapter 10

SENDING MESSAGES TO USAFETAC

You can use Dial-In's message capability to communicate with anyone at USAFETAC.

To do so, simply select the **Send Message** control button. When the full-screen editor appears, compose your message and press the F3 key to send it. The message will be received in the Dial-In Technical Support Office and passed to the addressee.

When you select the **Send Message** control button, the following hints appear at the bottom of the screen:

- **Esc** - Cancels the editor—no action will be taken.
- **F1 Help** - Displays a help panel for using the editor.
- **F3 Send Text** - Submits your message to the ETAC computer without saving a copy.
- **F10 Save Text** - Prompts you for a *filename.ext*, then returns you to the editor. Outgoing messages are stored in the **DIALIN** directory.

Chapter 11

ONLINE HELP

The main Help display is shown in Figure 11-1.

Online Help is available at any point in the Dial-In program simply by pressing F1. You may also request help from the Main Display by selecting the **Help** control button.

For some applications, Help is available to explain the numerous WMO codes. See the application descriptions in the appendices for additional information.

USAFETAC DIALIN Version 1.0	
Surface Apps Upper Air Apps	MAIN HELP Surface Apps - Applications dealing with surface data Upper Air Apps - Applications dealing with upper air data Utility Apps - General Purpose Applications View Job Status - Check on the status of the jobs you submitted Download Results - Download the output from the completed jobs View Results - Select a downloaded file to browse Delete Results - Delete the output from the USAFETAC mainframe View Messages - Select and view a message (listed by topics) Send Messages - Edit and send a message to USAFETAC Help - Displays this help window Quit - Ends the program Shell to DOS - temporarily exits to the DOS prompt ESC to continue Quit 12:29:41 Request successfully transmitted Shell to DOS 12:30:40 Sending Station Locator run cards 12:30:42 Request successfully transmitted
<F1> Help <F10> Quit <Enter> Select Item <Down/Up> Next/Previous Selection	

Figure 11-1. The Main Help Display.

Chapter 12

QUITTING THE DIAL-IN PROGRAM

Quitting Dial-In terminates your connection to the USAFETAC computer and closes the program. To quit, select the **Quit** control button or press **F10**. You will be asked to confirm your quit request before the connection is terminated—see Figure 12-1.

Press **Esc** to cancel the request, and press **Enter** to confirm it.

If you want to use Dial-In to view your downloaded files and/or messages, you can load the program in the offline mode. The procedure for operating offline was explained in Chapter 1.

USAFETAC DIALIN Version 1.0	
Surface Apps	
Upper Air Apps	
Utility Apps	
View Job Status	12:28:54 Sending Station Locator run cards
Download Results	12:28:56 Request successfully transmitted
View Results	12:29:05 Sending Mean Coincident Wet Bulb run cards
Delete Results	12:29:07 Request successfully transmitted
View Message	12:29:07 Request successfully transmitted
Send Message	12:29:07 Request successfully transmitted
Help	12:29:07 Request successfully transmitted
Shell to DOS	12:29:07 Request successfully transmitted
PRESS ENTER TO QUIT PROGRAM PRESS ESC TO GO BACK	
12:29:07 Request successfully transmitted 12:29:31 Sending Summary of the NUSW40 run cards 12:29:33 Request successfully transmitted 12:29:39 Sending Sads Data Interpolator run cards 12:29:41 Request successfully transmitted 12:30:40 Sending Station Locator run cards 12:30:42 Request successfully transmitted 12:32:39 Downloading WINDSPD.TXT 12:32:40 WINDSPD.TXT was downloaded successfully	
(F1) Help (F10) Quit (Enter) Select Item (Down/Up) Next/Previous Selection	

Figure 12-1. Example Quit Confirmation Panel.

Chapter 13

SHELLING TO DOS

The Dial-In **Shell to DOS** feature lets you exercise such simple DOS commands as copying, deleting, or printing files.

When you select **Shell to DOS**, the program places you at the DOS prompt, where you can now enter basic DOS commands.

All the files that you download from the USAFETAC computer are in ASCII format. You can print these files by using the DOS **Print** command or by transferring them to a word processor. Refer to your DOS manual for more information on the DOS **Print** command.

Although most word processors accept ASCII input, some may require special commands; refer to your word-processor manual. For assistance, call the Dial-In Technical Support Office at DSN 576-3743 or leave a Dial-In message on the USAFETAC mainframe—see Chapter 10.

Note that there is only a limited amount of memory available—don't be surprised if you can't start some of your other programs while using DOS.

To return to Dial-In, type **Exit** and press **Enter**.

Appendix A

SURFACE OBSERVATION APPLICATIONS

A Summary	A-2
Phenomena Summary	A-4
Conditional Weather Summary	A-5
Distribution Summary	A-8
Ceiling Duration	A-10
Mean Coincident Temperature	A-12
Percent Cloud-Free Line-of-Sight	A-14
Precipitation Summary	A-17
Surface Package	A-20
Temp, RH, and Wind Climo Summary	A-28
Wind-Chill Summary	A-35
Wind-Speed Analysis	A-38

A SUMMARY

This program provides an output equivalent to the Surface Observation Climatic Summary (SOCS), Part A. It provides *total occurrence count* and *percent frequency of occurrence* for the weather categories listed for a specified period of record (POR). Data for this program is extracted from the complete USAFETAC surface observation database, which includes all reporting stations and offers an extended POR. Since the database is on tape, the program takes considerably longer than 24 hours to run. If you need the data quickly (in less than 24 hours), use the "Phenomena Summary" program, which is based on DB2 tables and described next.

Weather Categories

Thunderstorms
Rain and/or Drizzle
Freezing Rain and/or
Drizzle

Snow and/or Sleet
Hail
Fog

Smoke and/or Haze
Blowing Snow
Dust and/or Sand

Program Inputs. At the input panel (see example), enter the following:

- **Six-digit Block Station Number**
- **Station Name**
- **POR start and end dates (YYMMDD)**
- **Time Conversion** (local to Z) in two digits, prefixed with + or - sign.
- **Identifier:** Enter a unique name (up to 40 characters) for each job submitted (e.g., "SCOTTWX").
- **Submit/Cancel.** Select "Submit" to start program, or "Cancel" to change entries.

A SUMMARY (MAX CONDITIONS)

Block Station #: 000000

Station Name: Scott AFB

Begin Date: 730101 End Date: 861231
YYMMDD YYMMDD

Local Time Conversion: -06 (- for West)
HH

Identifier: USER TEXT TO DISTINGUISH JOBS

< Submit > < Cancel >

Figure A-1. Example A Summary Input Panel.

Output Tables The program generates two sets of 13 tables based on the weather categories listed above. An example of the first set (*Total Occurrences*) is given on the next page. The second set (not shown) provides *percent occurrence frequency*. Both sets are in 3-hour increments (e.g., 00-02 local). An "all-hours" summary is also provided. The total observation count is given for all increments so that users can determine the relative reliability of the data. All percentages are rounded to 1/10 of a percent.

Example A Summary Table

UNITED STATES AIR FORCE
ENVIRONMENTAL TECHNICAL APPLICATIONS CENTER

Scott AFB
POR JAN 86-DEC 86
WMO # 724338

A SUMMARIES
WEATHER CONDITIONS

AS OF 26 OCT 92

UNITED STATES AIR FORCE ENVIRONMENTAL APPLICATIONS CENTER, SCOTT AIR FORCE BASE, IL 62225-5438, PROGR: ECOASUM (14.0), 26 OCT 92

Scott AFB

WMO # 724338

POR JAN 86-DEC 86

MONTH JAN

TOTAL OCCURRENCES
(FROM HOURLY OBSERVATIONS)

```
*****
*
*      *THUNDER-* RAIN * FRZING * SNOW *      *NUM OBS *      * SMOKE * BLOWING* DUST * NUM OBS * TOTAL
* HOURS * STORMS * AND/OR * RAIN/ * AND/OR * HAIL * WITH * FOG * AND/OR * SNOW * AND/OR *WITH OBST * NUMBER
*      *      * DRIZZLE* DRIZZLE* SLEET *      * PRECIP *      * HAZE *      * SAND *TO VISION * OF OBS
*****
*
* 00-02L *      0*      2*      0*      11*      0*      13*      14*      0*      0*      0*      14 *      93
* 03-05L *      0*      1*      0*      8*      0*      9*      22*      0*      0*      0*      22 *      93
* 06-08L *      0*      0*      0*      3*      0*      3*      26*      0*      0*      0*      26 *      93
* 09-11L *      0*      0*      0*      2*      0*      2*      20*      5*      0*      0*      25 *      93
* 12-14L *      0*      1*      0*      0*      0*      1*      6*      8*      0*      0*      14 *      93
* 15-17L *      0*      2*      0*      2*      0*      4*      5*      4*      0*      0*      9 *      93
* 18-20L *      0*      0*      0*      3*      0*      3*      6*      2*      0*      0*      8 *      93
* 21-23L *      0*      0*      0*      2*      0*      2*      10*      0*      0*      0*      10 *      93
*****
TOTALS*      *      0*      6*      0*      31*      0*      37*      109*      19*      0*      0*      128 *      744
*****
*
```

Scott AFB

724338

896106 = TOTAL OBS INPUT
896106 = TOTAL OBS FOR STATION PROCESSED
9601 = TOTAL OBS USED COMPUTATIONS
0 = TOTAL ERRORS DETECTED

PHENOMENA SUMMARY

This program also provides output equivalent to the Surface Observation Climatic Summary (SOCS), Part A, but from an abbreviated database resident on USAFETAC's DB2 tables. The abbreviated database offers a shorter POR (from 1973 to present) and may not contain all reporting stations. Although not as comprehensive as the complete tape-mounted surface database, this program provides a quick-turn alternative. If you are *not* in a hurry for the data (i.e., if you don't need it in less than 24 hours), we suggest you use the "A Summary" program.

Weather Categories

Thunderstorms

Rain and/or Drizzle

Freezing Rain and/or

Drizzle

Snow and/or Sleet

Hail

Fog

Smoke and/or Haze

Blowing Snow

Dust and/or Sand

Program Inputs. At the input panel (see example), enter the following:

- **Six-digit Block Station Number**
- **Station Name**
- **POR start and end dates (YYMMDD)**
- **Time Conversion** (local to Z) in two digits, prefixed with + or - sign.
- **Identifier:** Enter a unique name (up to 40 characters) for each job submitted (e.g., "SCOTTWX").
- **Submit/Cancel.** Select "Submit" to start program, or "Cancel" to change entries.

CONDITIONAL MX SUMMARY

Block Station #: 000000 POR Start Year: 73 YY

Station Name: Scott AFB POR Ending Year: 86 YY

Local Time Conversion: +06 (- for East, + for West)

(Press <F1> for listing of MX elements)

Conditional element #1: 37 Min range elem #1: 1600

Max range elem #1: 4800

Conditional element #2: Min range elem #2:

Max range elem #2:

Choose logic identifier

{ } 1 element chosen

{ } AND

{ } OR

Identifier: USER DEFINED TEXT TO DISTINGUISH JOBS

< Submit > < Cancel >

Figure A-2. Example Phenomena Summary Input Panel.

Output Tables. The tables produced are the same as those for the "A Summary" program.

CONDITIONAL WEATHER SUMMARY

This program provides the *mean number of days* a selected surface weather element (e.g., fog, rain, precipitation) or a *combination of any two elements* occurred in each month of a specified POR. The data is arranged in hourly and 3-hourly groups, in local time. A *range* of values may be used to further describe an element (e.g., visibility from 4,800 to 8,000 meters). The output created by this application is for the *entire* POR--not for *each year* of the POR.

Program Inputs. At the input panel (see example), enter the following:

- **Six-digit Block Station Number**
- **Station Name**
- **POR Start and end years (YY)**
- **Time Conversion** (local to Z) in two digits, prefixed with + or - sign.

Figure A-3. Example Conditional Weather Summary Input Panel.

- **Conditional Element #1:** Press F1 in this input window for a display of elements and code numbers. After selecting an element, enter its two-digit code number. Now select the *range restrictions* for that element by entering (in Min and Max range elem #1) the *lowest* and *highest* values, respectively, of the element you need.
- **Conditional Element #2:** If you're requesting a *combination* of two elements (e.g., ceiling vs. visibility, or a range of visibilities with fog), enter the information in the same format as for Conditional Element #1. Enter *range restrictions* in the same way, as well.
- **Choose Logic Identifier:** Use **Tab** to move to the correct logic identifier, and select it by pressing the **Space Bar**. These are the options:

--*Single element only:* This option provides the mean number of days that the specified element occurred during the selected POR.

--*Either Element #1 or Element #2:* This option provides the mean number of days that *either* element occurred.

--*Element #1 and Element #2:* This option provides the mean number of days that *both* elements occurred at the same time.

- **Identifier:** Enter a unique name (up to 40 characters) for each job submitted (e.g., "SCOTTWX").
- **Submit/Cancel.** Select "Submit" to start program, or "Cancel" to change entries.

Output Tables. This program generates tables that give the mean number of days a specified surface weather element (or combination of elements) occurred. As shown in the example, output is in three parts. The first part (shown below) displays the selections you made in the input panel. The second part (below and on the next page) contains the data you requested (monthly and annual mean values for individual hours and for 3-hourly groups). All times are local. The third and last part displays data relative to *processing* the request; e.g., total number of records input and total number of records used.

Example Conditional Weather Summary Output Tables

```

724338 731010 861231 -6 Scott AFB 1
  IDX 1
LOGIC 1 Element Chosen
ECOCND

Visibility          57          1600      4800

UNITED STATES AIR FORCE ENVIRONMENTAL APPLICATIONS CENTER, SCOTT AIR FORCE BASE, IL 62225-5438.  PROGR: ECOCNDWX(9.0 ) .21 OCT 92

STATION NAME: Scott AFB          724338          POR: 380101 - 911001
LOCATION:      30.33N 89:51W          STATION ELEV: 134M

MIN VISIBILITY (MB)      1600          MAX VISIBILITY (MB)      4800
ECOCND
CONDITIONAL LOGIC FORMULA ( 1 ) 1 Element Chosen
      MEAN NUMBER OF DAYS FOR THE POR THAT THE SPECIFIED WEATHER CRITERIA DID OCCUR (LST )

                                INDIVIDUAL HOURLY GROUPS
                                00  01  02  03  04  05  06  07  08  09  10  11  12  13  14  15  16  17  18  19  20  21  22  23

JAN      4.1  4.0  3.8  3.9  3.9  4.4  4.4  4.2  4.1  3.7  4.3  4.0  4.0  4.1  4.2  4.4  4.3  4.4  4.9  5.6  5.8  5.6  5.4  4.8
FEB      3.6  3.1  2.9  3.1  2.9  3.2  3.5  3.4  3.2  3.2  3.3  3.1  3.1  3.2  3.2  3.2  3.6  3.7  4.6  5.2  5.4  5.2  4.7  4.0
MAR      2.1  1.9  1.9  1.9  2.1  2.2  2.7  2.3  2.3  2.3  2.5  2.4  2.4  2.7  2.7  2.8  2.9  3.3  4.6  4.8  4.5  3.6  3.0  2.4
APR      1.2  0.9  0.9  0.9  0.9  1.1  1.3  1.3  1.1  1.2  1.3  1.3  1.4  1.3  1.5  1.5  1.5  2.3  2.5  2.8  2.1  1.6  1.3  1.2
MAY      0.9  0.8  0.7  0.6  0.6  0.8  0.7  0.9  0.8  0.8  0.8  0.8  1.2  1.6  1.9  2.3  3.1  4.3  3.9  3.5  2.3  1.4  1.2  0.9
JUN      0.5  0.4  0.4  0.4  0.4  0.4  0.4  0.5  0.8  0.8  0.9  0.8  1.0  1.3  1.5  1.5  2.6  3.3  3.2  2.3  1.5  1.0  0.7  0.6
JUL      0.4  0.4  0.3  0.4  0.4  0.5  0.5  0.5  0.7  0.6  0.7  0.9  0.9  1.3  1.8  2.4  3.2  5.2  5.4  3.8  2.3  1.2  0.9  0.7
AUG      0.6  0.5  0.5  0.4  0.4  0.4  0.5  0.9  1.1  1.0  1.1  1.2  1.5  1.8  2.4  2.8  3.5  6.3  7.2  5.9  3.7  2.1  1.4  0.9
SEP      0.6  0.7  0.5  0.6  0.6  0.6  1.0  1.2  1.1  1.1  1.1  1.2  1.3  1.6  2.1  2.4  2.9  4.2  5.2  5.1  3.8  2.6  1.3  0.8
OCT      1.2  1.3  1.4  1.1  1.2  1.5  2.0  1.5  1.5  1.3  1.5  1.5  1.8  2.0  2.3  2.2  2.5  3.0  4.9  5.5  4.5  3.0  2.0  1.8
NOV      2.1  1.8  1.5  1.6  1.8  2.5  2.4  2.2  2.1  2.2  2.3  2.4  2.3  2.4  2.4  2.4  2.6  2.8  4.0  5.0  4.8  4.3  3.0  2.4
DEC      3.6  3.4  3.0  3.1  3.7  4.2  3.9  3.7  3.7  3.7  3.4  3.6  3.7  3.8  4.1  3.9  3.8  3.9  4.2  5.2  5.3  5.3  4.5  4.1
ANNUAL   20.9      17.7      18.8      23.3      22.3      22.8      24.4      30.0      36.5      54.7      45.9      29.2
TOTALS    19.1      17.9      21.6      22.6      21.9      23.2      27.0      31.8      46.8      54.6      36.8      24.7

```

Example Conditional Weather Summary Output Tables

	3 - HOURLY GROUPS (LST)								ALL	TOTAL
	00 - 02	03 - 05	06 - 08	09 - 11	12 - 14	15 - 17	18 - 20	21 - 23	HOURS	OBS
JAN	5.7	6.0	5.7	5.2	5.4	5.8	8.2	8.0	14.9	74941
FEB	4.7	4.3	4.6	4.4	4.3	4.9	7.9	7.0	13.6	68398
MAR	3.1	3.0	3.5	3.4	3.7	4.4	7.0	4.7	12.0	76394
APR	1.6	1.4	1.8	1.9	2.4	3.1	4.1	2.3	7.7	73974
MAY	1.4	1.2	1.5	1.2	2.5	5.4	5.4	1.9	9.0	76486
JUN	0.8	0.7	1.1	1.2	1.9	4.2	4.0	1.4	6.9	73797
JUL	0.6	0.7	0.9	1.1	2.2	6.1	6.1	1.7	8.8	76351
AUG	0.9	0.7	1.4	1.6	2.7	7.4	8.8	2.5	11.4	76247
SEP	1.1	1.0	1.7	1.8	2.5	5.2	7.2	3.0	10.3	73240
OCT	1.9	1.9	2.3	2.2	2.9	3.6	7.4	3.7	10.3	74913
NOV	2.7	3.1	3.2	3.2	3.2	3.7	6.9	5.4	11.5	72703
DEC	4.9	5.6	5.1	5.0	5.2	5.1	7.7	7.1	14.4	75084
ANNUAL	29.4	29.6	32.8	31.9	39.0	59.0	80.8	48.7	130.4	892528
TOTALS										

UNITED STATES AIR FORCE ENVIRONMENTAL APPLICATIONS CENTER, SCOTT AIR FORCE BASE, IL 62225-5438, PROGR: ECOCDWXX(9.0),21 OCT 92
 LOWEST WHO NUMBER REQUESTED: 724338

HIGHEST WHO NUMBER REQUESTED: 724338

REQUESTED POR: 731010 TO 861231

ACTUAL POR : 380101 TO 911001

TOTAL NUMBER OF RECORDS INPUT: 896107

TOTAL NUMBER OF RECORDS USED : 892552

TOTAL TAPE ERRORS ENCOUNTERED: 0

NUMBER OF MISSING OBS FOR VISIBILITY (MB) 24 0 0 0 0
 NUMBER OF VALID OBS CHECKED 892552

TOTAL NUMBER OF OBS NOT USED DUE TO MISSING DATA 24

DISTRIBUTION SUMMARY

This program provides cumulative frequency distributions for density altitude (DA), pressure altitude (PA), or dry-bulb temperature (DBT) for a specified POR. The user selects one of three reports: *hourly, monthly and annual; monthly and annual only; or annual only.*

Program Inputs. At the input panel (see example), enter the following:

- **Six-digit Block Station Number**
- **Station Name**
- **POR start and end years and months (YYMM)**
- **Time Conversion** (local to Z) in two digits, prefixed with + or - sign.
- **Unit of Measurement, Data Type, and Report Type:** TAB to your choices and select them with the space bar.

DISTRIBUTION SUMMARY			
Block Station #: 000000	POR Start Date: 7301 YYMM		
Station Name: Scott AFB	POR Ending Date: 8612 YYMM		
Local Time Conversion: -06 (+ for East, - for West)	Unit of Measurement { } Feet/Fahrenheit { } Meters/Celsius		
Lowest Report Value: 00001	Data Type { } Density Altitude { } Pressure Altitude { } Temperature		
Highest Report Value: 00100	Report Type { } Hour, Month, & Annual { } Monthly & Annual { } Annual Only		
Report Value Increment: 00100			
Low Altimeter Setting: 00000			
High Altimeter Setting: 00000			
Altimeter Values: (100 = 1 Inch)			
Minimum Monthly Temp: 000	Minimum Yearly Temp: 000		
Maximum Monthly Temp: 000	Maximum Yearly Temp: 000		
Identifier: USER DEFINED TEXT TO DISTINGUISH JOBS			
< Submit >		< Cancel >	

Figure A-4. Example Distribution Summary Input Panel.

- **Lowest and Highest Report Values:** Enter the lowest and highest DA, PA, or DBT value to be printed in the output. These values should be low enough or high enough to include the lowest and highest values that might ever be expected at the station.
- **Report Value Increment:** Enter the incremental value of DA, PA, or DBT to be printed in the output. The maximum allowable value is 100. Program output is in *descending* incremental order.
- **Low and High Altimeter Settings:** For DA and PA only, enter the lowest and highest altimeter settings you would expect at the station in hundredths of inches, with NO decimal point (e.g., 2992) The program uses these entries for quality control; i.e., altimeter settings lower or higher than these values are discarded.
- **Minimum and Maximum Monthly Temp:** Enter the lowest and highest temperatures that can be expected in any month of the year. Do NOT enter a minimum value for a *summer* month if you also want to look at the distribution for *winter*. The program uses these entries for quality control; temperatures lower or higher than the values selected are discarded.

- Output Tables.** The tables are self-explanatory. Maximum and minimum values of the pressure altitude, density altitude, or temperature are also printed at the bottom of the summary for each month, hour, or year.

724338 Scott AFB
7301 8612 -06
D H 02800 03200
E 0-070 00130 00002

POR : 7301 TO 8612
MONTH: JANUARY

		HOURS (LOCAL)																								
* O *	A *	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	TOT*
*	130	66.7	65.8	68.1	64.0	69.6	62.9	55.6	66.7	50.0	66.7	75.0	68.4	76.5	82.4	80.0	57.1	66.7	61.5	72.7	90.9	90.9	68.8	81.3	80.0	379*
*	128	66.7	65.8	68.1	64.0	69.6	62.9	55.6	70.8	50.0	66.7	75.0	68.4	76.5	82.4	80.0	57.1	66.7	61.5	72.7	90.9	90.9	68.8	81.3	80.0	2*
*	126	66.7	65.8	68.1	64.0	69.6	62.9	55.6	70.8	50.0	66.7	75.0	68.4	76.5	82.4	80.0	57.1	66.7	61.5	72.7	90.9	90.9	68.8	81.3	80.0	0*
*	124	70.0	65.8	68.1	64.0	69.6	62.9	55.6	70.8	54.2	71.4	75.0	68.4	76.5	82.4	86.7	57.1	66.7	61.5	72.7	90.9	90.9	68.8	81.3	80.0	4*
*	122	70.0	65.8	68.1	64.0	69.6	62.9	55.6	70.8	54.2	71.4	75.0	68.4	76.5	82.4	86.7	57.1	66.7	61.5	72.7	90.9	90.9	68.8	81.3	80.0	0*
*	120	70.0	65.8	68.1	64.0	71.7	62.9	55.6	70.8	54.2	71.4	75.0	68.4	76.5	82.4	86.7	57.1	66.7	61.5	72.7	90.9	90.9	68.8	81.3	80.0	1*
*	118	70.0	65.8	68.1	64.0	71.7	62.9	55.6	70.8	54.2	71.4	80.0	68.4	76.5	82.4	86.7	64.3	66.7	61.5	72.7	90.9	90.9	68.8	81.3	80.0	2*
*	116	70.0	71.1	68.1	64.0	71.7	62.9	55.6	70.8	54.2	71.4	80.0	68.4	76.5	82.4	86.7	64.3	66.7	61.5	72.7	90.9	90.9	68.8	81.3	80.0	2*
*	114	70.0	71.1	68.1	66.0	71.7	62.9	55.6	70.8	54.2	71.4	80.0	68.4	76.5	82.4	86.7	64.3	66.7	61.5	72.7	90.9	90.9	68.8	81.3	80.0	1*
*	112	70.0	73.7	70.2	66.0	71.7	62.9	55.6	75.0	54.2	71.4	80.0	68.4	76.5	82.4	86.7	64.3	66.7	61.5	72.7	90.9	90.9	68.8	81.3	80.0	3*
*	110	73.3	73.7	70.2	66.0	71.7	62.9	55.6	75.0	54.2	71.4	80.0	68.4	76.5	82.4	86.7	64.3	66.7	61.5	72.7	90.9	90.9	68.8	81.3	80.0	1*
*	108	73.3	73.7	70.2	66.0	71.7	62.9	55.6	79.2	58.3	76.2	80.0	68.4	76.5	82.4	86.7	64.3	66.7	61.5	72.7	90.9	90.9	68.8	81.3	80.0	3*
*	106	73.3	73.7	70.2	66.0	71.7	62.9	55.6	79.2	58.3	76.2	80.0	68.4	76.5	82.4	86.7	64.3	66.7	61.5	72.7	90.9	90.9	68.8	81.3	80.0	0*
*	104	73.3	73.7	70.2	66.0	73.9	62.9	55.6	79.2	58.3	76.2	80.0	68.4	76.5	82.4	86.7	64.3	66.7	61.5	81.8	90.9	90.9	68.8	81.3	80.0	2*
*	102	73.3	73.7	70.2	66.0	73.9	62.9	55.6	79.2	58.3	81.0	80.0	68.4	76.5	82.4	86.7	64.3	66.7	61.5	81.8	90.9	90.9	68.8	81.3	80.0	1*
*	100	73.3	73.7	70.2	66.0	73.9	62.9	55.6	79.2	58.3	81.0	80.0	73.7	76.5	82.4	86.7	64.3	66.7	61.5	90.9	90.9	90.9	68.8	81.3	80.0	2*

NOTE: **** = 100.0 PERCENT

CEILING DURATION

This program provides hourly durations of ceilings below specified levels for user-specified PORs. Beginning and ending year, month, day, and hour (YYMMDDHH) are provided for each duration.

Program Inputs. At the input panel (see example), enter the following:

- **Six-digit Block Station Number**
- **Station Name**
- **POR start and end year and month (YYMM).** *NOTE:* Because this program can produce a very long output, use extreme care in making this entry.
- **Time Conversion** (local to Z) in two digits, prefixed with + or - sign.
- **Ceiling Limit Codes.** Place the cursor on the input box and press **F1** to display a list of ceiling values and corresponding codes. Using the **ARROW** or **PgUp/PgDn** keys, scroll through the list to find the value for the ceiling height you want. Once you've found the correct ceiling value, note the code, press **ESC**, and enter the code in the box.
- **Identifier:** Enter a unique name (up to 40 characters) for each job submitted.
- **Submit/Cancel.** Select "Submit" to start program, or "Cancel" to change entries.

Table Outputs. The table header gives block station number, station name, latitude and longitude (a minus sign prefix signifies south/east latitude/longitude), months, and years used. The body of the table is self-explanatory.

Figure A-5. Example Ceiling Duration Input Panel.

Example Ceiling Duration Table

SPECIFIC LOW CEILING DURATIONS

723540 TINKER AFB, OK

3525 LAT 9723 LON

MONTHS YEARS

1-12 73-86

CEILING	BEGIN	END	DURATION
THRESHOLD	DATE	DATE	LENGTH
WMO 1677	(YYMMDDHH)	(YYMMDDHH)	(HOURS)
80	73010123	73010212	14
80	73010216	73010419	52
80	73010423	73010423	1
80	73010504	73010820	89
80	73010910	73011113	52
80	73011220	73011223	4
80	73011418	73011421	4
80	73011617	73011810	42
80	73011913	73012006	18
80	73012013	73012308	68
• • •			
80	73031308	73031400	17
80	73031511	73031511	1
80	73031516	73031608	17
80	73031619	73031622	4
80	73031807	73031807	1
80	73031811	73031902	16
80	73031912	73031915	4
80	73031920	73032004	9
80	73032010	73032102	17
80	73032117	73032117	1

MEAN COINCIDENT TEMPERATURE

This program gives mean frequency of occurrence of a primary temperature with a mean coincident secondary temperature for each primary temperature range. It provides the number of occurrences within a range of a temperature type and the average corresponding value of another specified temperature type. Primary and secondary temperature types can be dew point (DP), dry bulb (DB), and wet bulb (WB), *but the primary and secondary cannot be the same.*

Program Inputs At the input panel (see example), enter the following:

- **Six-digit Block Station Number**
- **Station Name**
- **POR start and end dates (YYMM)**
- **Time Conversion (local to Z) in two digits, prefixed with + or - sign.**

MEAN COINCIDENT MET BULB

Block Station #: 0100001

Station Name: ELMHENDORF, AK

Start Date: 7301 End Date: 8831
YYMM YYMM

Local Time Conversion: -10 (~ for West)
HH

Units: () Celsius (.) Fahrenheit

Primary Temp: (.) Dew Point () Dry Bulb () Wet Bulb

Secondary Temp: () Dew Point (.) Dry Bulb () Wet Bulb

Hours per Group: () One (.) Four () Eight

Minimum # Obs per Month: 600

Identifier: USER DEFINED TEXT TO DISTINGUISH JOBS

< Submit > < Cancel >

Figure A-6. Example Mean Coincident Temperature Input Panel.

- **Units.** To select *Celsius*, press the SPACE BAR. To select *Fahrenheit*, press the TAB key, then the SPACE BAR. Celsius temperatures are in 2-degree increments, from -54 to 49°. Fahrenheit temperatures are in 5-degree increments, from -65 to 124°. Temperatures that exceed these limits are changed to the closest extreme value.
- **Primary Temperature.** Use the TAB and/or SPACE BAR to select the *primary and secondary temperature types*.
- **Hours Per Group.** Use the TAB and/or SPACE BAR to select *hours per group* (one, four, or eight).
- **Minimum # of Obs Per Month.** The maximum number of observations a month for a 3-hourly station should be between 224 and 248. A number between 150 and 200 would let you obtain data for stations that report most of the time.
- **Identifier.** Enter a unique name (up to 40 characters) for each job submitted.
- **Submit/Cancel.** Select "Submit" to start program, or "Cancel" to change entries.

Table Outputs. All values are rounded to whole units. The primary temperature type is displayed as the mean number of occurrences for that time period and range. A zero entry indicates a mean occurrence of less than 0.5 for that POR. The secondary temperature type is expressed as the

mean value corresponding to the occurrences in that time period and range of the primary temperature. The number of total occurrences is shown for each time period and of the primary temperature ranges. A mean of the secondary value is given for each of the primary temperature ranges. "mean frequency of occurrence" is the average number of occurrences in a given period. "MC" stands for "mean coincident."

Example Mean Coincident Temperature Table

UNITED STATES AIR FORCE ENVIRONMENTAL APPLICATIONS CENTER, SCOTT AIR FORCE BASE, IL 62225-5438, PROGRAM: EEMEANC9, DATE: 22 OCT 92

ELMENDORF, AK

LAT 61 15N

LOX 149 48W 213 FT

MEAN NUMBER OF OCCURRENCE OF DEW POINT TEMPERATURE WITH MEAN
COINCIDENT DRY BULB TEMPERATURE FOR EACH DEW POINT TEMPERATURE RANGE
8001 - 9012
MONTH = FEBRUARY

* HOURS ARE IN LOCAL TIME. ZULU = LOCAL + 10
ALL VALUES ROUNDED

TEMP RANGE (F)	OBSN HOUR GROUP AND MEAN COINCIDENT DRY BULB												T O A L S	A L M L E H A R M S C
	00 TO 03	MC DB	04 TO 07	MC DB	08 TO 11	MC DB	12 TO 15	MC DB	16 TO 19	MC DB	20 TO 23	MC DB		
40/ 44											0	40	0	40
35/ 39	0	36	0	36	1	37	1	37	1	36	0	37	3	36
30/ 34	3	33	4	35	4	35	6	35	5	34	3	34	24	35
25/ 29	12	31	9	32	11	33	15	34	15	32	15	31	78	32
20/ 24	14	28	13	28	14	28	17	30	16	30	13	29	86	29
15/ 19	19	24	18	24	18	24	18	27	19	26	16	25	107	25
10/ 14	12	19	14	19	15	20	16	22	13	22	13	21	83	21
5/ 9	10	15	10	15	11	17	10	17	9	18	10	16	60	16
0/ 4	10	12	10	12	10	12	8	16	9	15	9	12	55	13
-5/ -1	9	7	8	6	9	8	10	9	9	9	9	8	54	8
-10/ -6	6	2	9	2	8	3	7	7	8	6	8	5	46	4
-15/ -11	6	0	6	-1	7	-1	4	4	6	4	7	1	37	1
-20/ -16	6	-5	4	-6	4	-6	2	-2	1	-3	4	-4	22	-5
-25/ -21	4	-9	3	-10	2	-9	0	-8	1	-7	2	-7	12	-9
-30/ -26	2	-13	2	-11	1	-12			1	-14	2	-13	7	-12
-35/ -31	1	-17	1	-17	0	-17					1	-17	3	-17
-40/ -36	0	-21	1	-21	0	-21					0	-21	1	-21
TOTALS	113		113		113		113		113		113		679	

CLOUD-FREE LINE-OF-SIGHT

This program gives the percent probability of cloud-free line-of-sight above a selected location. Tables give average percent values by month for each 3-hour period beginning with 0000Z. Angles above a location are computed for every 10 degrees from 0 to 80 degrees (0 is directly overhead). Processing takes some time. In most cases, three tapes for each year of record must be mounted and read to produce the data required; it would take 2-3 hours, for example, to process data for 1984-1991. Surface-derived databases (which require block station numbers) produce results similar to satellite databases, but are much faster because they don't require tape handling. Surface databases are not limited to 3-hour reporting periods. Satellite databases can be run for any point by entering latitude and longitude; they can produce significant results because both satellite and surface data are used.

Program inputs. At the input panel (see example), enter the following:

- **Six-digit block station number** (if known), or latitude/ longitude.
- **Start and end dates of required POR** (YYMMDDHH)
- **Duration of the CFLOS window** (0-60 minutes)
- **Identifier.** Enter a unique name (up to 40 characters) for each job submitted.
- **Submit/Cancel.** Select "Submit" to start program, or "cancel" to change entries.

Percent Cloud Free Line of Sight	
Block Station #:	024938
Begin POR: 73010100 YYMMDDHH	End POR: 86123123 YYMMDDHH
Duration of CFLOS window:	10
Identifier:	USER TEXT TO DISTINGUISH JOBS
< Submit > < Cancel >	

Figure A-7. Example Cloud-Free Line-of-Sight Input Panel.

Output Tables. This program produces two sets of monthly tables for each location specified. The first set gives percent probability of cloud-free line-of-sight while the other gives cloud cover frequency distribution. The former is self-explanatory. In the latter, 11 sets of ranges are arranged across the top of the table—read down from range and across from hour to find cloud cover frequency percentage.

Example Probability of Cloud-Free Line-of-Sight Tables

PERCENT PROBABILITY OF CLOUD-FREE LINE-OF-SIGHT

LOCATION: BLOCK STATION 724338

FOR THE MONTH OF: JAN

	0 DEG	10 DEG	20 DEG	30 DEG	40 DEG	50 DEG	60 DEG	70 DEG	80 DEG
00Z	35	34	34	33	33	32	31	30	27
03Z	40	40	40	39	39	38	37	36	33
06Z	42	42	41	41	41	40	39	38	35
09Z	41	41	40	40	40	39	38	37	34
12Z	36	36	36	35	35	34	33	32	29
15Z	32	32	31	31	30	30	29	27	24
18Z	33	32	32	31	31	30	29	28	25
21Z	33	33	32	32	32	31	30	28	25

PERIOD OF RECORD: 1973 - 1986

EACH FIGURE IS DERIVED FROM APPROXIMATELY 1278 OBSERVATIONS

SOURCE: USAFETAC DB2 SURFACE

Example Probability of Cloud-Free Line-of-Sight Tables

CLOUD COVER FREQUENCY DISTRIBUTION

(AS VIEWED FROM THE SURFACE)

		<=	0.06	0.16	0.26	0.36	0.46	0.56	0.66	0.76	0.86	>=
		0.05	0.15	0.25	0.35	0.45	0.55	0.65	0.75	0.85	0.95	0.96
		----	----	----	----	----	----	----	----	----	----	----
00Z	21	5	3	3	3	3	3	3	3	4	6	46
03Z	29	4	3	2	2	2	2	3	3	3	5	45
06Z	32	4	3	2	2	2	2	2	3	3	4	44
09Z	30	4	3	2	2	2	2	2	3	3	4	45
12Z	23	5	3	3	3	3	3	3	3	4	6	45
15Z	17	5	3	3	3	3	3	3	4	4	7	47
18Z	17	5	4	3	3	3	3	3	4	5	7	46
21Z	19	5	3	3	3	3	3	3	3	4	7	46

SOURCE: USAFETAC DB2 SURFACE

PERCENTAGE OF OBSERVATIONS BASED ON SURFACE DATA: 100

PERCENTAGE OF OBSERVATIONS BASED ON SATELLITE DATA: 0

TOTAL NUMBER OF OBSERVATIONS: 10416

PRECIPITATION SUMMARY

This program gives precipitation, temperature, and sky cover for selected stations. The data is derived from the DATSAV database and can be obtained for any reporting station since 1973. This relatively fast program produces a large amount of data but is limited to an 11-year POR per request because of size limitations.

Program Inputs. At the input panel (see example), enter the following:

- **Six-digit Block Station Number**
- **Station Name**
- **Start and end dates of required POR (YYMMDD)**
- **Time Conversion** (local to Z) in two digits, prefixed with + or - sign.

PRECIPITATION SUMMARY

Block Station #:

Beginning POR: Ending POR:

YYMMDD YYMMDD

Identifier:

< Submit > < Cancel >

Figure A-9. Example Precipitation Summary Input Panel.

- **Identifier.** Enter a unique name (up to 40 characters) for each job submitted.

Output Tables. Table headings are explained below:

- **YRMODA.** The date; for example, 771031 is October 31 1977.
- **BLOCK STATION.** Six-digit station identifier.
- **# OF OBS.** The number of observations for a day, usually 24 for one observation an hour.
- **MAX TEMP.** Maximum temperature for the 24-hour period.to nearest tenth of a Celsius degree.
- **MIN TEMP.** Minimum temperature for the 24-hour period.to nearest tenth of a Celsius degree.
- **PRECIP FLAG.** In two digits, defined as follows:

First digit:

- 1 = reported precip and reported weather agree
- 2 = no reported precip but precip type weather
- 3 = precip reported but no precip type weather
- 4 = precip not reported or determinable

Second digit:

- 1 = precip amount primarily from 24-hour reports
- 2 = precip amount primarily from 12-hour reports
- 3 = precip amount primarily from 6-hour reports
- 4 = precip amount primarily from bogus (estimated) precip
- 5 = precip not reported or determinable

- **PRECIP AMOUNT.** In inches to two decimal places; a trace is reported as .01.
- **SNOWFALL FLAG.** In two digits, defined as follows: *NOTE: Snowfall measurement by subtracting snowdepths was considered but found to be unreliable.*

First digit:

- 1 = reported snowfall and reported weather agree
- 2 = no reported snowfall but snow type weather
- 3 = snowfall reported but no snow type weather
- 4 = snowfall not reported or determinable

Second digit:

- 1 = snowfall primarily reported from snowfall
- 2 = snowfall primarily from reported precip
- 3 = snowfall primarily from bogus precip
- 4 = snowfall not reported or determinable

- **SNOWFALL AMOUNT.** In inches, in the same format as for PRECIP AMOUNT.
- **DEPTH FLAG.** In two digits, defined as follows:

First digit:

- 1 = reported snowdepth and reported weather agree
- 2 = no reported snowdepth but snow type weather
- 3 = snowdepth reported but no snow type weather
- 4 = snowdepth not reported or determinable

Second digit:

- 1 = snowdepth primarily from reported snowdepth
- 2 = snowdepth not reported or determinable

- **SNOW DEPTH:** In inches, to the nearest tenth of an inch.
- **NOON SKY 8S:** Sky cover in eighths at local noon or nearest (-1 = missing).
- **NEAR ZULU:** Zulu time (day/hour) of local noon.
- **MIDN SKY 8S:** Sky cover in eighths at local midnight or nearest.
- **NEAR ZULU:** Zulu time (day/hour) of local midnight.

Example Precipitation Summary Tables

BLOCK		#OF	TEMP	MAX	MIN	PRECIP	PRECIP	SNOWFALL	SNOWFALL	DEPTH	SNOW	NOON	NEAR	MIDN	NEAR			
YR	MODA	STATION	OBS	FLAG	TEMP	TEMP	FLAG	AMOUNT	FLAG	AMOUNT	FLAG	DEPTH	SKY	BS	ZULU	SKY	BS	ZULU
7610	1	724338	24.	**	1.0	28.3	17.	13.00	1.	44.00	0.	42.0	0		118	0		206
7610	2	724338	24.	1.	21.7	7.2	45.	0.00	44.	0.00	42.	0.0	0		218	0		306
7610	3	724338	24.	1.	22.8	9.4	13.	0.20	44.	0.00	42.	0.0	2		318	0		406
7610	4	724338	24.	1.	18.3	13.3	13.	0.28	44.	0.00	42.	0.0	2		418	2		506
7610	5	724338	24.	1.	13.3	10.6	13.	0.16	44.	0.00	42.	0.0	8		518	8		606
7610	6	724338	24.	1.	18.9	3.3	45.	0.00	44.	0.00	42.	0.0	7		618	7		706
7610	7	724338	24.	1.	21.1	8.9	45.	0.00	44.	0.00	42.	0.0	8		718	8		806
7610	8	724338	24.	1.	27.2	14.4	45.	0.00	44.	0.00	42.	0.0	2		818	2		906
7610	9	724338	24.	1.	29.4	18.9	45.	0.00	44.	0.00	42.	0.0	2		918	0		1006
761010		724338	24.	1.	28.3	18.3	45.	0.00	44.	0.00	42.	0.0	7		1018	0		1106
761011		724338	24.	1.	28.9	18.3	45.	0.00	44.	0.00	42.	0.0	2		1118	2		1206
761012		724338	24.	1.	27.2	12.8	13.	0.31	44.	0.00	42.	0.0	0		1218	7		1306
761013		724338	24.	1.	15.0	8.9	13.	0.20	44.	0.00	42.	0.0	2		1318	0		1406
761014		724338	24.	1.	22.2	7.2	45.	0.00	44.	0.00	42.	0.0	0		1418	0		1506
761015		724338	24.	1.	27.2	9.4	45.	0.00	44.	0.00	42.	0.0	0		1518	0		1606
761016		724338	24.	1.	25.0	10.0	45.	0.00	44.	0.00	42.	0.0	2		1618	0		1706
761017		724338	24.	1.	22.2	8.3	45.	0.00	44.	0.00	42.	0.0	0		1718	0		1806

• • •

7611 9	724338	24.	1.	18.3	6.7	45.	0.00	44.	0.00	42.	0.0	7		918	8		1006
761110	724338	24.	1.	16.1	11.7	33.	0.12	44.	0.00	42.	0.0	8		1018	8		1106
761111	724338	24.	1.	20.0	10.0	45.	0.00	44.	0.00	42.	0.0	8		1118	7		1206
761112	724338	24.	1.	23.9	14.4	45.	0.00	44.	0.00	42.	0.0	8		1218	8		1306
761113	724338	24.	1.	16.7	8.9	13.	1.38	44.	0.00	42.	0.0	2		1318	2		1406
761114	724338	24.	1.	12.2	5.0	45.	0.00	44.	0.00	42.	0.0	7		1418	0		1506
761115	724338	24.	1.	18.9	1.7	45.	0.00	44.	0.00	42.	0.0	7		1518	0		1606
761116	724338	24.	1.	15.6	5.0	45.	0.00	44.	0.00	42.	0.0	7		1618	0		1706
761117	724338	24.	1.	13.9	1.7	45.	0.00	44.	0.00	42.	0.0	2		1718	0		1806
761118	724338	24.	1.	21.1	3.9	45.	0.00	44.	0.00	42.	0.0	2		1818	8		1906
761119	724338	24.	1.	18.9	7.8	45.	0.00	44.	0.00	42.	0.0	2		1918	0		2006
761120	724338	24.	1.	23.3	4.4	45.	0.00	44.	0.00	42.	0.0	0		2018	0		2106
761121	724338	24.	1.	26.7	7.2	45.	0.00	44.	0.00	42.	0.0	2		2118	0		2206
761122	724338	24.	1.	25.0	13.9	45.	0.00	44.	0.00	42.	0.0	8		2218	7		2306
761123	724338	24.	1.	20.6	10.6	45.	0.00	44.	0.00	42.	0.0	8		2318	0		2406
761124	724338	24.	1.	13.9	0.0	45.	0.00	44.	0.00	42.	0.0	0		2418	2		2506
761125	724338	24.	1.	19.4	7.8	13.	0.08	44.	0.00	42.	0.0	8		2518	8		2606

SURFACE PACKAGE

This program produces percent occurrence frequency of specified elements for user-specified PORs. It can provide data for a single element, but by letting the user move through a series of detailed screens, comparisons of more than 50 elements are possible.

Program Inputs. At the first input panel (see example), enter the following:

- **Six-digit Block Station Number**
- **Station Name**
- **Start and end dates of required POR (YYMMDD)**
- **Time Conversion** (local to Z) in two digits, prefixed with + or - sign.
- **Identifier.** Enter a unique name (up to 40 characters) for each job submitted.

- **Check inputs.** If you've made an error, use **Tab** or **Shift/Tab** to move through the field and correct it. When you're satisfied that all entries are correct, press **Enter** to proceed to the next screen.

At the *second* input panel:

- **Element selection.** Scroll through this screen (using **PgUp/PgDn** and/or the **ARROW** keys) until the highlight line is on the first element you would like to compare. Press **Enter** to make this selection and move to the next input panel.

SURFACE PACKAGE

Block Station #: 724338

Station Name: SCOTT AFB

Beginning POR: 78010100 Ending POR: 88123123
YYMMDDHH YYMMDDHH

Time deviation from GMT: -6 (- for West)

Identifier: TEMP VS. WIND DIR 78-88

< Submit > < Cancel >

Figure A-10. Example Surface Package Input Panel #1.

Select a weather Variable by pressing ENTER.
Use Up/Down arrow keys to move to selection.

Pressure Altitude	(Feet)
Sea Level Pressure	(Tenths of Millibars)
Station Pressure	(Tenths of Millibars)
Altimeter setting	(Hundredths of inches)
Barometric tendency	(MMO Code 6200)
6 Hour Precipitation	(Millimeters)
Sky Cover	(Dependent on Obs Type)
Cloud Amount	(Dependent on Obs Type)
Cloud Ceiling	(MMO Code 1677)
Present Weather	(MMO Code 4677)
Past Weather	(MMO Code 4500)
Visibility	(Airways Visibility Indicator)
CN	(Fraction of Celestial Dome Covered by Low Clouds)
CL	(Type of Low Cloud)
HN	(Low Cloud Height - MMO Code 1677)
CH	(Type of Middle Cloud - MMO Code 215)
CS	(Type of High Cloud - MMO Code 305)
NS	(Amount of Cloud in the Layer)
NH	(Class of Cloud in the Layer)
NSHS	(Cloud Height - MMO Code 1677)

Figure A-11. Example Surface Package Input Panel #2.

At the *third* input panel :

- **Operator.** The comparison operator is used to calculate the percentages. Enter your two-letter choice from the list supplied and tab to the "Value" window.
- **Value.** Enter a numeric value. Values for some elements have to be encoded. When the window asks for an encoded value, press **F1**, and a help table will be displayed. Scroll through this table with the **PgUp/PgDn** and/or **arrow** keys to find the right values. Press **Esc** to return to the input panel and enter your encoded selection.

Figure A-12. Example Surface Package Input Panel #3

- **Extra Entries.** If you've asked for "Crosswind/Tailwind (gust) Component," you'll be asked to enter a runway direction. If you've requested "Present Weather," you'll need to enter *two* coded values; the program will compare all present weather values that fall between those two values.
- To return to the previous screen, **Tab** to **<CANCEL>** and press **Enter** or **ESC**. If all inputs are correct, press **Enter**. The last panel will be displayed.

At the *last* input panel:

Select how you want the elements you've selected to be compared ("AND," "OR," or "Finished") by pressing **Enter**. If you select "AND" or "OR," your selections to this point will be displayed on the bottom of the screen and you'll be prompted to select another element (from screen 2).

Repeat the sequence until you select "Finished" and the job is submitted for processing.

Figure A-13. Example Surface Package Input Panel #4.

Example inputs. Let's say you want to know the percent occurrence frequency for dry-bulb temperature greater than or equal to 90° F with southwest winds, POR 1978-1988, at Scott AFB. You'd make the following nine sequential entries:

- **1. Input Screen #1**
Blk station #: 724338
Station Name: SCOTT AFB, IL.
Beginning POR: 78010100
Ending POR: 88123123
Time deviation: -6
Identifier: SCOTT TMP VS WND
Press **Enter**.
- **2. Input Screen #2**
Scroll down to Dry-Bulb Temperature (F) and press **Enter**.
- **3. Input Screen #3**
Comparison input: GE
Value input: 90
Press **Enter**.
- **4. Input Screen #4**
Tab to and select "AND" with **Space Bar**. Press **Enter**. When Screen #2 reappears, scroll down to "Wind Direction."
Press **Enter**.
- **5. Input Screen #3**
Comparison input: GE
Value input: 180
Press **Enter**.
- **6. Input Screen #4**
Tab to and select "AND" with **Space Bar**.
Press **Enter**.
- **7. Input Screen #2**
Scroll down to Wind Direction again.
Press **Enter**.
- **8. Input Screen #3**
Comparison input: LT
Value input: 270
Press **Enter**.
- **9. Input Screen #4**
Tab to and select "FINISHED" with **Space Bar**.
Press **Enter**.

The job is now submitted. It can be tracked by viewing "Job Status."

Output Tables. The program generates percent occurrence frequency tables as follows:

- The first table gives percent occurrence frequency by hour (Local and Zulu) and month, with totals for each month.
- Table two gives percent occurrence frequency for 3-hourly groups by month, and totals.
- Tables three and four give percent occurrence frequency of 6- and 12-hourly groups by month.
- Table five gives the count of observations used by hour, month, and total monthly observations used.
- Table six gives a count of observations not used.
- The last two tables give duration of occurrences by hour and month, along with average annual duration by month.

Example Surface Package Tables

STATION: 724338

STATION NAME: SCOTT AFB

78010100 - 88123123 REQUESTED

USING ONLY VALID OBSERVATIONS

PERCENT FREQUENCY OF THE FUNCTION :

(A .AND. B .AND. C)

WHERE -- A IS Dry Bulb Temperature (Degrees Fahrenheit)GE 90.

-- B IS Wind Direction (Whole Degrees)GE 18.

-- C IS Wind Direction (Whole Degrees)LT 27.

78010100 - 88123123 ACTUAL POR RANGE

TIME DEVIATION FROM UNIVERSAL COORDINATED TIME (ZULU): -6

MO/HR-ZULU

UTC	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	ALL
LCL	18	19	20	21	22	23	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	ALL
JAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
FEB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
JUN	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	1.0	0.4	0.0	0.0	0.09
JUL	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.6	0.9	0.3	1.5	0.21
AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.3	0.6	0.6	0.6	0.11
SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
ANN	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.04

Example Surface Package Tables

STATION NAME: SCOTT AFB

PERCENT FREQUENCY 3-HOURLY SUMMARIES

UTC	0- 2	3- 5	6- 8	9-11	12-14	15-17	18-20	21-23	ALL
LCL	18-20	21-23	0- 2	3- 5	6- 8	9-11	12-14	15-17	ALL
JAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
FEB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
MAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
APR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
MAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
JUN	0.3	0.0	0.0	0.0	0.0	0.0	0.5	0.2	0.09
JUL	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.9	0.21
AUG	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.5	0.11
SEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
OCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
NOV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
ANN	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.04

STATION NAME: SCOTT AFB

PERCENT FREQUENCY 6-HOURLY SUMMARIES

UTC	0- 5	6-11	12-17	18-23	ALL
LCL	18-23	0- 5	6-11	12-17	ALL
JAN	0.0	0.0	0.0	0.0	0.00
FEB	0.0	0.0	0.0	0.0	0.00
MAR	0.0	0.0	0.0	0.0	0.00
APR	0.0	0.0	0.0	0.0	0.00
MAY	0.0	0.0	0.0	0.0	0.00
JUN	0.1	0.0	0.0	0.3	0.09
JUL	0.1	0.0	0.1	0.7	0.21
AUG	0.0	0.0	0.0	0.5	0.11
SEP	0.0	0.0	0.0	0.0	0.00
OCT	0.0	0.0	0.0	0.0	0.00
NOV	0.0	0.0	0.0	0.0	0.00
DEC	0.0	0.0	0.0	0.0	0.00
ANN	0.1	0.0	0.1	0.2	0.04

Example Surface Package Tables

STATION NAME: SCOTT AFB

PERCENT FREQUENCY 12-HOURLY SUMMARIES

	UTC 0-11	12-23	ALL
	LCL 18- 5	6-17	ALL
JAN	0.0	0.0	0.00
FEB	0.0	0.0	0.00
MAR	0.0	0.0	0.00
APR	0.0	0.0	0.00
MAY	0.0	0.0	0.00
JUN	0.1	0.2	0.09
JUL	0.1	0.4	0.21
AUG	0.0	0.3	0.11
SEP	0.0	0.0	0.00
OCT	0.0	0.0	0.00
NOV	0.0	0.0	0.00
DEC	0.0	0.0	0.00
ANN	0.1	0.1	0.04

ASTERISKS (***) DENOTE 100 PERCENT

Example Surface Package Tables

STATION NAME: SCOTT AFB

1978 - 1988

VALID OBSERVATION COUNT USED IN CALCULATIONS

MO/HR-ZULU

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	ALL
JAN	341	341	341	341	341	341	341	341	341	341	341	341	342	341	341	341	341	341	341	341	341	341	341	341	8185
FEB	311	311	311	312	311	311	311	311	311	311	311	311	312	312	311	311	312	311	311	311	311	311	311	311	7468
MAR	341	341	341	341	341	341	342	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	8185
APR	330	330	330	330	330	330	330	330	330	330	330	331	330	330	330	330	330	330	330	330	330	330	330	330	7921
MAY	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	8184
JUN	330	330	331	330	330	330	330	330	330	330	330	331	330	330	330	330	330	330	330	330	330	330	330	330	7922
JUL	341	341	341	341	341	341	341	341	341	341	343	341	341	342	341	341	341	341	341	341	341	341	341	342	8188
AUG	341	341	341	341	341	341	341	341	341	342	341	341	341	341	341	341	341	341	341	340	341	341	341	343	8186
SEP	330	330	330	330	330	330	330	331	330	329	330	330	330	330	330	330	330	330	330	330	330	330	330	330	7920
OCT	341	341	341	342	341	341	341	341	341	341	341	342	341	342	341	341	341	341	341	341	341	341	341	341	8187
NOV	330	330	329	330	330	330	330	331	330	330	330	331	330	330	330	330	330	330	330	331	330	330	330	331	7923
DEC	341	341	341	343	341	341	341	341	341	341	341	342	341	341	341	341	341	341	341	341	341	341	341	341	8187
ANN	4018	4018	4018	4022	4018	4018	4019	4019	4019	4018	4020	4021	4021	4022	4018	4018	4019	4018	4018	4018	4018	4018	4019	4021	96456

MISSING OR INVALID OBSERVATION COUNT (NOT USED)

MO/HR-ZULU

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
JAN	9	15	12	8	7	19	13	15	12	17	17	23	24	25	29	26	21	20	9	12	20	27	24	17
FEB	13	18	26	31	17	19	19	25	21	20	18	22	47	40	32	39	39	34	21	23	17	24	28	27
MAR	8	14	10	7	11	4	13	9	14	10	20	17	17	19	23	23	19	18	13	13	15	17	19	20
APR	8	14	8	13	13	13	12	14	15	11	17	23	19	17	15	15	12	4	8	6	6	12	6	13
MAY	6	10	9	5	3	5	17	22	17	22	27	17	22	21	21	14	20	14	10	13	15	3	8	10
JUN	12	11	6	13	13	7	9	13	15	17	22	11	12	19	10	6	3	12	16	9	10	9	14	24
JUL	15	9	9	4	6	7	4	8	14	16	27	22	20	27	20	12	8	13	8	8	21	31	27	20
AUG	15	12	13	7	10	11	7	7	18	11	15	15	11	19	20	13	17	9	5	15	13	14	10	12
SEP	4	13	11	9	9	8	20	13	15	15	24	30	26	33	24	24	16	13	9	22	18	17	12	13
OCT	16	20	25	32	27	18	16	23	29	29	29	36	35	40	29	24	26	27	20	21	17	31	19	18
NOV	25	34	28	32	39	34	29	40	34	33	41	41	49	45	42	55	49	42	32	37	33	44	36	33
DEC	29	21	26	22	35	32	19	30	24	25	20	27	19	32	39	28	29	27	18	39	31	30	30	20

Example Surface Package Tables

STATION NAME: SCOTT AFB

CONDITIONAL WEATHER SECTION

NO/HR-ZULU	NUMBER OF OCCURRENCES IN A REPRESENTATIVE YEAR																								AVG NUM DAYS
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
JAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FEB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JUN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
JUL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
AUG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SEP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OCT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANN	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	3	7	5	3	7	24

STATION NAME: SCOTT AFB

AVERAGE NUMBER		AVERAGE LENGTH(HOURS)	
OF DURATIONS		OF DURATIONS	
ANNUALLY	BY MONTH	ANNUALLY	
JAN	0	JAN	0.00
FEB	0	FEB	0.00
MAR	0	MAR	0.00
APR	0	APR	0.00
MAY	0	MAY	0.00
JUN	0	JUN	1.16
JUL	1	JUL	1.21
AUG	0	AUG	1.00
SEP	0	SEP	0.00
OCT	0	OCT	0.00
NOV	0	NOV	0.00
DEC	0	DEC	0.00
ANN	1	ANN	1.00

TEMP, RH, AND WIND CLIMO SUMMARY

This program provides climatological statistics (for specified PORs not to exceed 30 years) for the following:

- Monthly/Annual temperature and relative humidity.
- Percent occurrence frequency of wind direction and speed, sustained and in gusts.
- Monthly/Annual winds (in knots).
- Maximum wind occurrence--the five highest values per year.

Program Inputs. At the input panel, enter the following:

- Six-digit Block Station Number
- Station Name
- Start and end year and month of required POR (YYMM)
- Latitude and longitude of station requested in degrees and minutes. Use **tab** to move to the appropriate hemisphere for each and select by pressing the Space Bar.

TEMP, RH and WIND CLIMO SUMMARY			
Block Station #: 000000			
Station Name: Scott AFB			
Beginning POR: 7301		Ending POR: 8612	
YYMM		YYMM	
Latitude: 3833		Hemisphere: { } North South	
DDMM			
Longitude: 08950		Hemisphere: { } East West	
DDDMM			
Station Elevation: 1452 (In Feet)			
Identifier: USER TEXT TO DISTINGUISH JOBS			
< Submit >		< Cancel >	

Figure A-14. Example Temp, RH, and Wind Climo Summary Input Panel.

- **Station Elevation.** Enter in feet.
- **Identifier.** Enter a unique name (up to 40 characters) for each job submitted.
- **Submit/Cancel.** Select "Submit" to start program, or "Cancel" to change entries.

Output tables. The program generates the following tables; examples are given on pages 31-34.

- | | |
|---|---|
| <ul style="list-style-type: none"> • Monthly and annual temperature. <ul style="list-style-type: none"> --Absolute maximum/minimum. --Mean daily maximum/minimum. --Daily mean and standard deviation. --Mean dew point and standard deviation. --Mean wet bulb and standard deviation. | <ul style="list-style-type: none"> • Monthly and annual relative humidity. <ul style="list-style-type: none"> --Mean percent and standard deviation. --Absolute minimum. |
|---|---|

- **Percent frequency of occurrence** of wind direction and speed to six points of the compass, including variable direction and calm winds.
- **Monthly and annual wind values:**
 - Maximum* sustained speed with direction, year, day, and hour (Z).*
 - Maximum* gust speed with direction, year, day, and hour (Z).*
 - Mean speed (all directions).*
 - Prevailing direction.*
- **Maximum wind occurrence values** (five peak values per year). *Note:* Use maximum values with caution--they may contain bad data.
 - Number of observations per year.*
 - Wind direction.*
 - Wind speed.*
 - Year/Month/Day/Hour (Z).*

Example Temp, RH, and Wind Climo Summary Tables

* TEMPERATURE AND HUMIDITY STATISTICS *															

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN	OBS	

* TEMPERATURE(CENTIGRADE)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
* ABSOLUTE MAXIMUM	* 25.0*	* 26.7*	* 27.8*	* 31.1*	* 39.4*	* 36.1*	* 42.2*	* 40.6*	* 37.8*	* 31.7*	* 26.1*	* 23.3*	* 42.2*	*	
* MEAN DAILY MAXIMUM	* 8.8*	* 11.1*	* 17.0*	* 21.2*	* 26.0*	* 29.8*	* 34.0*	* 34.1*	* 29.2*	* 22.4*	* 15.1*	* 8.8*	* 21.5*	*	
* DAILY MEAN	* 2.4*	* 5.2*	* 10.8*	* 15.1*	* 20.3*	* 24.4*	* 28.1*	* 27.8*	* 23.2*	* 16.9*	* 9.5*	* 3.4*	* 15.6*	* 43808*	
* STANDARD DEVIATION	* 6.6*	* 7.7*	* 6.1*	* 5.9*	* 4.9*	* 4.4*	* 4.4*	* 4.5*	* 6.1*	* 5.3*	* 6.5*	* 7.2*	* 10.7*	*	
* MEAN DAILY MINIMUM	* -2.0*	* 1.1*	* 6.3*	* 10.3*	* 15.6*	* 19.9*	* 22.6*	* 22.5*	* 18.3*	* 12.6*	* 5.5*	* -0.3*	* 11.1*	*	
* ABSOLUTE MINIMUM	* -16.6*	* -15.5*	* -4.9*	* -1.0*	* 6.1*	* 10.6*	* 17.2*	* 14.4*	* 2.8*	* 3.9*	* -8.2*	* -17.1*	* -17.1*	*	
* MEAN DEWPOINT	* -5.1*	* -1.8*	* 3.1*	* 6.9*	* 13.4*	* 17.5*	* 18.1*	* 18.3*	* 14.9*	* 10.5*	* 3.6*	* -2.2*	* 8.1*	* 43796*	
* STANDARD DEVIATION	* 6.7*	* 7.2*	* 6.4*	* 6.5*	* 4.5*	* 3.3*	* 2.6*	* 2.7*	* 5.8*	* 5.8*	* 7.1*	* 7.8*	* 10.0*	*	
* MEAN WET-BULB	* 0.0*	* 2.7*	* 7.5*	* 11.2*	* 16.5*	* 20.2*	* 21.7*	* 21.8*	* 18.3*	* 13.6*	* 7.1*	* 1.6*	* 11.9*	*	
* STANDARD DEVIATION	* 5.5*	* 6.5*	* 5.2*	* 5.1*	* 3.7*	* 3.0*	* 2.2*	* 2.4*	* 4.8*	* 4.6*	* 6.0*	* 6.6*	* 9.1*	*	
* TEMPERATURE(FARENHEIT)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
* ABSOLUTE MAXIMUM	* 77.0*	* 80.0*	* 82.0*	* 88.0*	* 103.0*	* 97.0*	* 108.0*	* 105.0*	* 100.0*	* 89.0*	* 79.0*	* 74.0*	* 108.0*	*	
* MEAN DAILY MAXIMUM	* 47.8*	* 52.0*	* 62.6*	* 70.1*	* 78.9*	* 85.6*	* 93.1*	* 93.3*	* 84.5*	* 72.3*	* 59.1*	* 47.8*	* 70.7*	*	
* DAILY MEAN	* 36.3*	* 41.4*	* 51.5*	* 59.1*	* 68.5*	* 76.0*	* 82.5*	* 82.0*	* 73.7*	* 62.4*	* 49.2*	* 38.2*	* 60.1*	* 43808*	
* STANDARD DEVIATION	* 11.8*	* 13.8*	* 10.9*	* 10.6*	* 8.8*	* 7.9*	* 7.9*	* 8.2*	* 11.0*	* 9.5*	* 11.7*	* 13.0*	* 19.2*	*	
* MEAN DAILY MINIMUM	* 28.5*	* 34.0*	* 43.3*	* 50.6*	* 60.1*	* 67.9*	* 72.7*	* 72.5*	* 65.0*	* 54.7*	* 41.9*	* 31.5*	* 52.0*	*	
* ABSOLUTE MINIMUM	* 2.0*	* 4.0*	* 23.0*	* 30.0*	* 43.0*	* 51.0*	* 63.0*	* 58.0*	* 37.0*	* 39.0*	* 17.0*	* 1.0*	* 1.0*	*	
* MEAN DEWPOINT	* 22.8*	* 28.8*	* 37.6*	* 44.4*	* 56.1*	* 63.6*	* 64.7*	* 65.0*	* 58.7*	* 50.8*	* 38.6*	* 28.0*	* 46.6*	* 43796*	
* STANDARD DEVIATION	* 12.0*	* 13.0*	* 11.5*	* 11.7*	* 8.2*	* 6.0*	* 4.7*	* 4.9*	* 10.4*	* 10.4*	* 12.8*	* 14.0*	* 18.0*	*	
* MEAN WET-BULB	* 32.0*	* 36.8*	* 45.5*	* 52.1*	* 61.6*	* 68.4*	* 71.1*	* 71.2*	* 65.0*	* 56.5*	* 44.8*	* 34.9*	* 53.4*	*	
* STANDARD DEVIATION	* 9.9*	* 11.7*	* 9.3*	* 9.2*	* 6.7*	* 5.3*	* 3.9*	* 4.3*	* 8.6*	* 8.2*	* 10.7*	* 11.8*	* 16.3*	*	
* MEAN NO. DAYS GE-90	* 0.0*	* 0.0*	* 0.0*	* 0.0*	* 1.6*	* 4.4*	* 21.4*	* 22.8*	* 8.4*	* 0.0*	* 0.0*	* 0.0*	* 4.9*	*	
* MEAN NO. DAYS LE-32	* 20.0*	* 12.0*	* 3.2*	* 0.2*	* 0.0*	* 0.0*	* 0.0*	* 0.0*	* 0.0*	* 0.0*	* 5.0*	* 15.4*	* 4.6*	*	

* RELATIVE HUMIDITY	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
* MEAN PERCENT	* 60.6*	* 62.9*	* 61.6*	* 61.1*	* 67.2*	* 67.1*	* 57.1*	* 58.5*	* 62.2*	* 68.8*	* 69.4*	* 68.5*	* 63.4*	* 43796*	
* STANDARD DEVIATION	* 18.5*	* 17.0*	* 17.9*	* 18.8*	* 17.4*	* 14.7*	* 15.1*	* 14.6*	* 17.4*	* 19.4*	* 18.8*	* 17.2*	* 18.6*	*	
* ABSOLUTE MINIMUM	* 11.9*	* 18.6*	* 12.8*	* 11.3*	* 15.3*	* 25.5*	* 19.5*	* 20.7*	* 16.7*	* 16.2*	* 16.1*	* 20.7*	* 11.3*	*	

* NO. OF TEMPERATURES IGNORED BECAUSE OF A GROSS-ERROR WAS	15														*
* NO. OF DEWPOINTS IGNORED BECAUSE OF A GROSS-ERROR WAS	5														*

Example Temp, RH, and Wind Climo Summary Tables

* PERCENT FREQUENCY OF OCCURRENCE *																
* OF WIND DIRECTION AND SPEED *																
* (SUSTAINED WINDS) *																

* SPEED(KTS) *																
DIR	*****															
															MEAN	
	1-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40	41-47	48-55	GT-55	PCT	SPEED	OBS		

N	1.6	2.9	4.0	4.0	1.1	0.3	0.0	0.0	0.0	0.0	0.0	13.8	9.6	6042		
NNE	0.8	1.1	1.5	1.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	4.8	8.4	2097		
NE	0.7	1.1	1.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	6.5	1437		
ENE	0.9	1.1	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	5.3	1211		
E	1.3	1.7	0.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	5.1	1776		
ESE	1.0	1.1	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	4.7	1161		
SE	1.2	2.0	0.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	5.2	1854		
SSE	0.9	2.3	1.8	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	5.6	6.5	2468		
S	1.3	5.2	9.3	7.2	1.3	0.2	0.0	0.0	0.0	0.0	0.0	24.5	9.5	10741		
SSW	0.9	2.4	3.7	3.6	0.9	0.2	0.0	0.0	0.0	0.0	0.0	11.7	9.9	5110		
SW	0.6	1.0	1.3	1.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	4.7	9.3	2044		
WSW	0.3	0.5	0.6	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0	2.2	8.9	949		
W	0.4	0.5	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	7.5	803		
WNW	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	6.5	407		
NW	0.4	0.4	0.4	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.6	8.2	723		
NNW	0.8	1.0	1.2	1.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	4.4	8.5	1918		
VAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0		
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	3083		
PCT	13.2	24.7	28.4	21.1	4.5	1.0	0.1	0.0	0.0	0.0	0.0	100.0	7.8	0		

OBS	5796	10807	12451	9240	1985	423	38	1	0	0	0	0	0	43824		

* NO. OF WINDS IGNORED BECAUSE OF A GROSS-ERROR WAS 0 *																

FROM HOURLY OBSERVATIONS ONLY



Example Temp, RH, and Wind Climo Summary Tables

* ANNUAL WIND STATISTICS *															
* SPEED IN KNOTS *															

***** JAN * FEB * MAR * APR * MAY * JUN * JUL * AUG * SEP * OCT * NOV * DEC * ANN *															

* MAX. SUSTAINED SPEED	* 30.	* 28.	* 28.	* 34.	* 28.	* 28.	* 26.	* 22.	* 25.	* 30.	* 30.	* 28.	* 34.	*	
* DIRECTION	* NNE	* N	* SSW	* N	* S	* SSW	* S	* S	* NNW	* W	* S	* S	* N	*	
* YEAR/DAY/HOUR (GMT)	*852006*842711*860917*830116*821303*840723*830316*860818*832011*841619*832218*842105*830116*														
* MEAN SPEED(ALL DIRECTIONS)	* 7.9	* 8.4	* 8.9	* 8.7	* 7.4	* 6.4	* 6.8	* 5.6	* 8.4	* 7.8	* 9.1	* 8.5	* 7.8	*	
* PREVAILING WIND DIRECTION	* N	* N	* S	* S	* S	* S	* S	* S	* S	* S	* S	* N	* S	*	
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
* MAX. GUST SPEED	* 41.	* 37.	* 45.	* 52.	* 54.	* 38.	* 35.	* 35.	* 47.	* 47.	* 46.	* 36.	* 54.	*	
* DIRECTION	* NNE	* N	* SSW	* W	* SE	* N	* S	* NW	* S	* NE	* S	* NNW	* SE	*	
* YEAR/DAY/HOUR (GMT)	*851920*842706*861004*820220*861704*851105*830321*860204*862911*860105*832218*850108*861704*														

* PREVAILING WIND DIRECTION OF THE (4) WARMEST CONSECUTIVE MONTHS IS S															*
* PREVAILING WIND DIRECTION OF THE (3) COLDEST CONSECUTIVE MONTHS IS N															*

SUSTAINED WINDS ARE FROM HOURLY OBSERVATIONS ONL - GUSTS ARE FROM ALL OBSERVATIONS

Example Temp, RH, and Wind Climo Summary Tables

* MAXIMUM WIND OCCURRENCE STATISTICS(FIVE PEAK VALUES PER YEAR)					*				
* SPEED IN KNOTS					*				

* SUSTAINED					* GUSTS				

* OBS DIR SPEED YR/MO/DA/HR(GMT) *					* OBS DIR SPEED YR/MO/DA/HR(GMT) *				
* *					* *				
* 8760 W 32 82040221 *					* 555 W 52 82040220 *				
* N 28 82111414 *					* W 50 82040221 *				
* N 28 82111214 *					* S 42 82051303 *				
* S 28 82111117 *					* W 40 82040223 *				
* S 28 82051303 *					* S 40 82012718 *				
* 8760 N 34 83040116 *					* 976 S 46 83112218 *				
* S 30 83112218 *					* NNW 46 83040122 *				
* NNW 30 83040123 *					* NNW 45 83040123 *				
* N 30 83040119 *					* NNW 44 83040121 *				
* N 30 83040118 *					* N 44 83040119 *				
* 8784 W 30 84101619 *					* 1402 WSW 46 84042918 *				
* NW 30 84042923 *					* W 44 84042921 *				
* W 30 84042921 *					* W 44 84042920 *				
* W 30 84042920 *					* WSW 43 84101618 *				
* WSW 30 84042919 *					* W 42 84101619 *				
* 8760 NNE 30 85012006 *					* 1136 NNE 41 85011920 *				
* NNE 28 85011920 *					* W 40 85042204 *				
* W 27 85042204 *					* NNE 40 85012006 *				
* NNW 26 85120103 *					* NNE 40 85012001 *				
* N 26 85030408 *					* NNE 39 85012004 *				
* 8760 SSW 28 86030917 *					* 1773 SE 54 86051704 *				
* S 27 86032520 *					* NE 47 86100105 *				
* NNW 26 86101200 *					* S 47 86092911 *				
* N 26 86051422 *					* SSW 45 86031004 *				
* SW 26 86050704 *					* W 39 86092703 *				

SUSTAINED WINDS ARE FROM HOURLY OBSERVATIONS ONLY - GUSTS ARE FROM ALL OBSERVATIONS

STA.723540 DATA CARD FOR IS 1/1982-12/1986, FOR PROCESSED WAS 1/1982-12/1986, OBS IGNORED- 0/
 TAPE READ ERRORS 0
 TOTAL OBS READ 365232

WIND-CHILL SUMMARY

This program provides percent occurrence frequencies of equivalent wind-chill temperature (ECT). Frequency distributions are given for user-specified temperature categories and PORs.

Program Inputs. At the input panel, enter the following:

- **Six-digit Block Station Number**
- **Station Name**
- **Start and end years and months of required POR (YYMM)**
- **Time Conversion** (local to Z) in two digits, prefixed with + or - sign.

WIND CHILL SUMMARY

Block Station #: 0800001	POR Start Date: 7301 YYMM
Station Name: Scott AFB	POR Ending Date: 8612 YYMM
Local Time Conversion: +06 (- for East, + for West) HH	Unit of Measurement {} Fahrenheit {} Celcius
Upper temp limit: 120	
Lower temp limit: -10	
Increment: -10 (Must be an even multiple of upper and lower limits)	
Percent value for ECT: 80 (ECT = Equivalent Chill Temp)	
Percent of the time <= 50	
Required # of OBS per day to be searched: 24	
Identifier: USER DEFINED TEXT TO DISTINGUISH JOBS	
< Submit >	< Cancel >

Figure A-15. Example Wind-Chill Summary Input Panel.

- **Unit of Measurement.** Tab to the correct unit and select it by pressing the Space Bar.
- **Upper and Lower temp limits.** Enter the highest and lowest temperatures to be printed. Temperatures above or below these values will default to these entries. If no entries are made, defaults of 60 and -65° F will be used.
- **Increment.** Enter (in two digits) the desired temperature increment. A default of 5° F will be used if a zero is entered or if it is left blank. Upper and lower limits must be even multiples of the desired increment.
- **Percent value for ECT.** Enter a number from 1 to 100. This is the percent occurrence frequency of the equivalent chill temperature for indicated hours and categories.
- **Percent of the time <=.** This threshold is used to calculate the percent of time ECT is less than or equal to this value.
- **Required number of OBS per day to be searched.** Enter the required number of observations for any day to be used in the calculations--for a station that reports every 3 hours, you would enter 08.
- **Identifier.** Enter a unique name (up to 40 characters) for each job submitted.
- **Submit/Cancel.** Select "Submit" to start program, or "Cancel" to change entries.

Output Tables. The first set of ECT tables (one per month) provides cumulative frequency of ECT by temperature range (down the left side) and hour (across the top). An all-hours mean ECT and the requested percentile ECT for that month are given at the bottom of each of these monthly tables. A second table (next page) gives the actual number of hours used for calculations, along with the minimum ECT for all months and the requested percentile ECT with the percent of time ECT was less than or equal to the requested value.

Example Wind-Chill Summary Tables

CARD #1 724338 73010100 86120100 24 +6 F 111111111111 120 -10 10

CARD #2 80 50 1 Scott AFB

CARD #3 A

UNITED STATES AIR FORCE ENVIRONMENTAL APPLICATIONS CENTER, SCOTT AIR FORCE BASE, IL 62225-5438, PROGR: ECEWINDCL(8.0),21 OCT 92

STATION NAME: Scott AFB
910930
LOCATION: 38.33N 89:51W
138M

724338

POR: 380101 -

STATION ELEV:

JANUARY

PERCENTAGE FREQUENCY OF EQUIVALENT CHILL TEMPERATURE (F).

		HOUR(LST)																								DAILY	
		CUM																									
ECT	RANGE	SUM	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
ABOVE	0120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0120 TO 0111		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0110 TO 0101		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100 TO 0091		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0090 TO 0081		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0080 TO 0071		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0070 TO 0061		1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
0060 TO 0051		2	1	1	1	1	1	1	0	1	1	1	1	1	2	3	4	4	3	3	1	1	1	1	1	1	0
0050 TO 0041		8	5	4	4	4	4	4	3	3	3	4	5	6	8	9	9	10	11	10	9	7	6	5	5	5	4
0040 TO 0031		23	15	14	14	13	12	11	12	11	11	13	14	15	17	16	17	16	17	19	19	19	18	18	18	17	14
0030 TO 0021		45	24	24	23	23	22	23	22	22	23	19	19	21	19	19	20	20	21	21	22	23	25	23	23	23	25
0020 TO 0011		66	21	22	23	23	23	23	23	23	21	22	23	22	21	22	20	19	18	20	21	21	21	22	21	21	25
0010 TO 0001		81	16	16	15	16	16	16	16	18	18	18	17	15	14	12	13	14	14	13	13	14	14	15	14	15	16
0000 TO -009		91	9	9	10	10	10	12	11	10	10	10	9	9	10	10	8	9	8	8	8	8	8	8	9	10	9
BELOW	-009	91	9	10	10	11	11	11	12	12	12	13	12	11	9	8	8	7	8	7	7	8	9	9	9	9	7

Example Wind-Chill Summary Tables

MEAN EQUIVALENT CHILL TEMPERATURE 22

80TH PERCENTILE ECT 8

PERCENT TIME 50F OR LESS 96

UNITED STATES AIR FORCE ENVIRONMENTAL APPLICATIONS CENTER, SCOTT AIR FORCE BASE, IL 62225-5438, PROGR ECEWNDCL(8 0), 21 OCT 92

NUMBER OF HOURS USED FOR CALCULATIONS BY MONTH AND BY HOUR (LST)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
00	3088	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
01	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
02	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
03	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
04	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
05	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
06	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
07	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
08	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
09	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
10	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
11	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
12	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
13	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
14	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
15	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
16	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
17	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
18	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
19	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
20	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
21	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
22	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094
23	3089	2817	3150	3048	3152	3054	3156	3154	3024	3098	2996	3094

UNITED STATES AIR FORCE ENVIRONMENTAL APPLICATIONS CENTER, SCOTT AIR FORCE BASE, IL 62225-5438, PROGR:

STATION NAME: Scott AFB
LOCATION: 38.33N 89.51W

724338

POR: 380101 - 910930
STATION ELEV: 138M

80TH PERCENTILE

80TH PERCENTILE ECT / PERCENT TIME ECT 50F OR LESS

ECT (COLDEST MO)

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0/98	6/96	16/85	33/55	50/19	*** / 2	*** / 0	*** / 0	*** / 10	40/43	22/83	8/96

(ECTS ARE IN DEGREES F)

*** INDICATES GREATER THAN 50F

UNITED STATES AIR FORCE ENVIRONMENTAL APPLICATIONS CENTER, SCOTT AIR FORCE BASE, IL 62225-5438, PROGR ECEWNDCL(8 0), 21 OCT 92
LOWEST WMO NUMBER REQUESTED: 724338

HIGHEST WMO NUMBER REQUESTED: 724338

REQUESTED POR: 73010100 TO 86120100

ACTUAL POR : 38010101 TO 91093017

TOTAL NUMBER OF RECORDS INPUT: 896107

TOTAL NUMBER OF RECORDS USED : 883968

TOTAL TAPE ERRORS ENCOUNTERED: 0

WIND-SPEED ANALYSIS

This program provides the five highest wind speeds (sustained or gust) for each year and month of a specified POR.

Program Inputs. At the input panel, enter the following :

- **Six-digit Block Station Number**
- **Start and end years of required POR (YYYY)**
- **Wind Speed Type.** Select "Gust" or "Sustained" wind speeds.
- **Maximum Sustained Wind Speed.** If you selected "Sustained," you must make an entry here. This value is used to eliminate "bad data" wind speeds; that is, sustained speeds exceeding this value are discarded.

WINDSPEED ANALYSIS	
Block Station #:	000000
Begin POR Year:	1973
	YYYY
End Year:	1992
	YYYY
Wind Speed Type:	() Gust (•) Sustained
Maximum Sustained Wind Speed:	020
	Knots
Identifier:	USER TEXT TO DISTINGUISH JOBS
< Submit > < Cancel >	

Figure A-16. Example Wind-Speed Summary Panel.

- **Identifier.** Enter a unique name (up to 40 characters) for each job submitted.
- **Submit/Cancel.** Select "Submit" to start program, or "Cancel" to change entries.

Output Tables. Output is provided in annual tables. Table headings are as follows:

- **MMDDHH.** A five- or six-digit date/time group.
- **WNDS PD.** Wind speed (sustained or gust) in knots.
- **WNDDIR.** Wind direction (whole degrees) corresponding to the wind speed.

Example Wind Speed Analysis Tables

YEAR = 1973 IBKSTN = 724338 NAME = SCOTT AFB/BELEVILLE

MMDDHH	WINDSPD	WINDDIR	MMDDHH	WINDSPD	WINDDIR	MMDDHH	WINDSPD	WINDDIR	MMDDHH	WINDSPD	WINDDIR	MMDDHH	WINDSPD	WINDDIR
12119	20	110	12123	20	120	12819	20	350	12823	20	350	12822	18	350
22117	20	320	20119	20	160	20121	20	170	20111	18	130	20216	18	290
31718	20	310	32501	20	140	33110	20	60	33112	20	90	31023	20	110
41611	20	170	41612	20	180	42017	20	160	42112	20	180	42113	20	180
52203	20	180	52708	20	130	52712	20	140	52716	20	210	52717	20	210
61120	20	160	62721	18	300	62722	18	320	60307	16	170	60320	16	190
72400	18	310	72621	18	260	70412	18	320	72804	16	350	72620	13	270
81321	16	320	83122	15	170	83003	14	180	82321	14	160	82923	12	240
92616	16	160	90319	16	190	90318	14	170	92422	14	210	91718	14	290
101117	15	170	101119	15	160	101122	15	150	101118	14	150	101921	14	230
111519	20	300	112116	20	210	112508	20	330	112807	18	300	112810	18	310
121309	20	230	121315	20	300	121316	20	310	121318	20	310	120413	20	130

YEAR = 1974 IBKSTN = 724338 NAME = SCOTT AFB/BELEVILLE

MMDDHH	WINDSPD	WINDDIR	MMDDHH	WINDSPD	WINDDIR	MMDDHH	WINDSPD	WINDDIR	MMDDHH	WINDSPD	WINDDIR	MMDDHH	WINDSPD	WINDDIR
12622	20	210	12020	18	290	10700	17	310	10907	17	320	10906	16	320
22215	20	300	22217	20	300	22222	20	300	22412	20	350	22413	20	340
33002	20	290	33003	20	270	33009	20	300	33018	20	310	33020	20	300
41415	20	240	41416	20	270	41417	20	270	41419	20	280	42106	20	160
51219	20	310	51215	18	320	51216	18	310	51214	18	310	50821	18	320
60907	20	150	60908	20	170	60914	20	160	60917	20	180	60918	20	180
72811	20	350	70215	15	190	70223	14	180	70321	14	210	70322	14	200
80202	16	330	80920	14	240	80318	13	280	80217	12	120	80419	12	270
90102	18	340	91303	18	320	92815	16	130	92903	16	290	92904	16	290
103118	20	170	103119	20	170	100421	20	180	100422	18	160	100423	18	160
112018	20	290	112619	20	140	112621	20	150	110101	20	160	110100	18	150
122221	20	150	122222	20	160	120119	20	320	120122	20	320	120118	19	320

Appendix B

UPPER-AIR APPLICATIONS

Probability of Icing	B-2
Upper-Air Data Extract	B-4
Upper-Air Interpolation	B-6

PROBABILITY OF ICING

This program computes icing probability for selected rawinsonde stations at the mandatory levels of 1,000, 850, 700, 500, and 400 mb. Icing probabilities are then multiplied by a correction factor from AWSM 105-39 (AWS/TR-80/001) based on 20,000 aircraft flights in icing conditions.

Program Inputs. At the input panel (see example), enter the following :

- **Six-digit Block Station Number.**
- **Station Name**
- **POR start and end years (YY).** *Note:* Most upper-air databases start in 1973.
- **Identifier.** Enter a unique name (up to 40 characters) for each job submitted.
- **Submit/Cancel.** Select "Submit" to start program, or "Cancel" to change entries.

PROBABILITY OF ICING

Block Station #: 022333

Station Name: SCOTT AFB

Beginning Year: 73 Ending Year: 86
YY YY

Identifier: USER TEXT TO DISTINGUISH JOBS

< Submit > < Cancel >

Figure B-1. Example Probability of Icing Panel.

Output Tables. Monthly icing probability statistics are given for the mandatory levels of 1,000, 850, 700, 500, and 400 mb. An example is given on the next page.

Example Probability of Icing Table

UNITED STATES AIR FORCE ENVIRONMENTAL TECHNICAL APPLICATIONS CENTER, SCOTT AFB, IL
62225 - ENOICING - 2.0 - PREPARED: 23 OCT 92

THIS TABLE PROVIDES PROBABILITY OF OCCURRENCE OF ICING AT THE INDICATED LEVELS.

FOR THE FOLLOWING STATION 702720 ELMENDORF AB, AK
PERIOD OF RECORD NOV 83 TO DEC 90

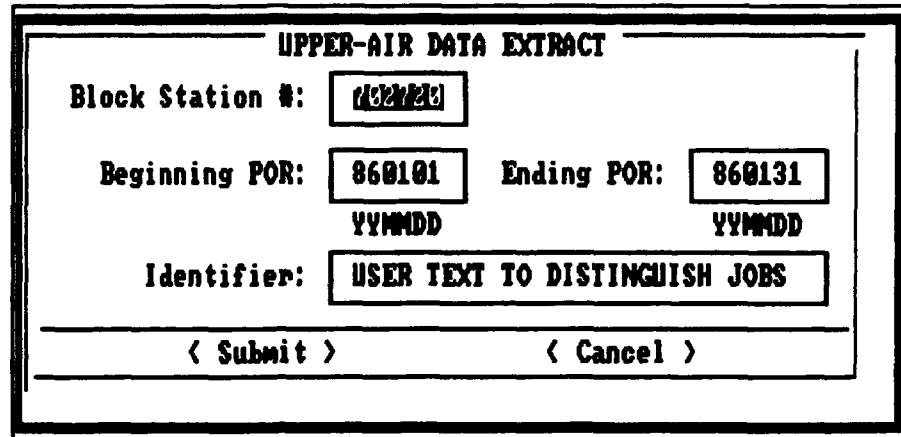
JAN.		PROB	POT	NUM OBS
	1000MBS,	5.21	21.74	2765
	850MBS,	11.01	31.75	7259
	700MBS,	6.74	31.15	7243
	500MBS,	1.94	17.11	6600
	400MBS,	0.40	2.75	2906
FEB.		PROB	POT	NUM OBS
	1000MBS,	4.22	17.53	3246
	850MBS,	9.55	29.66	6710
	700MBS,	6.15	28.88	6697
	500MBS,	1.68	13.88	6169
	400MBS,	0.26	1.77	2940
MAR.		PROB	POT	NUM OBS
	1000MBS,	3.07	11.19	3477
	850MBS,	11.30	31.20	7401
	700MBS,	6.99	32.70	7389
	500MBS,	1.78	14.72	7067
	400MBS,	0.38	2.40	3296
APR.		PROB	POT	NUM OBS
	1000MBS,	1.71	5.22	4157
	850MBS,	11.14	28.37	7296
	700MBS,	7.52	32.48	7293
	500MBS,	2.11	16.04	7158
	400MBS,	0.49	4.00	3624
MAY.		PROB	POT	NUM OBS
	1000MBS,	0.38	0.99	4460
	850MBS,	8.11	18.12	7537

UPPER-AIR DATA EXTRACT

This program extracts upper-air data for a given station and POR from USAFETAC's climatic database, which contains RAOB and pibal data from all reporting stations since 1973. Data is extracted and presented from surface to 100 millibars. Elements extracted are height, pressure, temperature, dew-point depression, wind direction, and wind speed.

Program Inputs. At the input panel (see example), enter the following:

- **Six-digit Block Station Number:**
- **POR start and end dates (YYMMDD)**
- **Identifier.** Enter a unique name (up to 40 characters) for each job submitted.



The figure shows a graphical user interface window titled "UPPER-AIR DATA EXTRACT". Inside the window, there are four input fields with labels to their left. The first field is labeled "Block Station #:" and contains the text "132123". The second field is labeled "Beginning POR:" and contains "860101", with "YYMMDD" printed below it. The third field is labeled "Ending POR:" and contains "860131", with "YYMMDD" printed below it. The fourth field is labeled "Identifier:" and contains "USER TEXT TO DISTINGUISH JOBS". At the bottom of the window, there are two buttons: "< Submit >" on the left and "< Cancel >" on the right.

Figure B-2. Example Upper-Air Data Extract Panel.

- **Submit/Cancel.** Select "Submit" to start program, or "Cancel" to change entries.

Output Tables. For each upper-air observation extracted, a header provides the WMO block-station number, year (YR), month, day (DY), and hour (GMT). Data is output in six columns for each level of the observation.

Example Upper-Air Data Extract Table

UNITED STATES AIR FORCE ENVIRONMENTAL TECHNICAL APPLICATIONS CENTER

SCOTT AIR FORCE BASE, ILLINOIS 1
10:35 Monday, October 26, 1992

UPPER-AIR DATA EXTRACT

BLKSTN=129820 YR=86 MONTH=JANUARY DY=1 HR=0000 UTC

HGT (FEET)	PRESS (MB)	TEMP (C)	DEWP (C)	WDIR (DEG)	WSPD (KNTS)
280	996.0	M	M	20	4.0
1050	967.0	M	M	45	5.0
2510	914.0	M	M	60	4.0
3250	888.0	M	M	115	2.0
4380	850.0	M	M	190	7.0
4690	840.0	M	M	200	9.0
6100	796.0	M	M	210	13.0
8570	724.0	M	M	225	11.0
9450	700.0	M	M	230	11.0
11070	657.0	M	M	235	13.0
15960	540.0	M	M	235	13.0
17810	500.0	M	M	240	11.0
20200	452.0	M	M	245	5.0
23030	400.0	M	M	235	9.0
27400	328.0	M	M	235	15.0
29300	300.0	M	M	235	24.0
30980	277.0	M	M	235	27.0
32380	259.0	M	M	240	23.0
33100	250.0	M	M	240	21.0
33530	245.0	M	M	245	20.0
37580	202.0	M	M	250	23.0
37790	200.0	M	M	250	23.0
43340	154.0	M	M	265	17.0
43900	150.0	M	M	260	17.0
46890	130.0	M	M	255	22.0
51600	104.0	M	M	265	21.0

UPPER-AIR INTERPOLATION

This program also extracts upper-air data from USAFETAC's climatic database for a given station and POR, then *interpolates* the data (pressure, temperature, moisture, and wind) to either pressure or height. Wind data is only output for data interpolated to *height*. Pressure interpolation is from the surface to 100 mb in 100-mb intervals. Height interpolation is from the surface to 50,000 feet MSL in 1,000-foot intervals.

Program inputs. At the input panel (see example), enter the following:

- **Six-digit Block Station Number**
- **Start and end dates of required POR (YYMMDD)**
- **Interpolation Type.** Select either *height* or *pressure* interpolation. If you need wind data, choose *height* interpolation.

UPPER AIR INTERPOLATION	
Block Station #:	731015
Begin POR:	731015
	YYMMDD
End POR:	1115
	MMDD
Interpolation Type	{ } Height Pressure
Identifier:	USER TEXT TO DISTINGUISH JOBS
<input <="" <input="" td="" type="button" value=" < Cancel > "/>	

- **Submit/Cancel.** Select "Submit" to start program, or "Cancel" to change entries.

Output Tables. A header provides the WMO block-station number, year (YR), month, day (DY), and hour (GMT). Data is output in six columns for each level of the observation.

Example Upper-Air interpolation Table

UPPER AIR DATA FOR BLOCK-STATION 723870				ELEVATION = 3304 FEET	
13 NOV 1991 12Z				LAT = 36.60	
				LON = 116.00	
LEVEL	PRESSURE	TEMPERATURE	DEW POINT	WIND SPEED	WIND DIRECTION
FT MSL	MB	DEG C	DEG C	KTS	DEG
3304	902.0	7.8	-1.2	3.9	340.0
3455	897.0	10.4	0.4	*****	*****
3855	884.0	13.2	0.2	*****	*****
3999	879.4	*****	*****	1.0	95.0
4357	868.0	13.8	-1.2	*****	*****
4931	850.0	12.4	-1.6	2.9	85.0
6001	817.2	*****	*****	2.9	145.0
6578	800.0	9.0	-6.0	*****	*****
7001	787.6	*****	*****	1.0	140.0
7999	759.3	*****	*****	4.9	50.0
8661	741.0	9.2	-20.8	*****	*****
8999	731.8	*****	*****	8.0	10.0
10207	700.0	6.0	-24.0	7.0	355.0
11152	675.0	5.0	-25.0	*****	*****
12001	653.4	*****	*****	8.0	330.0
13999	605.1	*****	*****	8.0	285.0
14921	584.0	-4.1	-34.1	*****	*****
15102	580.0	-4.5	-16.5	*****	*****
15463	572.0	-4.7	-21.7	*****	*****
16001	560.3	*****	*****	4.9	250.0
18963	500.0	-11.9	-27.9	8.9	315.0
20000	479.3	*****	*****	8.0	325.0
20171	476.0	-13.7	-31.7	*****	*****
23999	407.3	*****	*****	10.9	310.0
24442	400.0	-23.7	-39.7	13.0	305.0
25000	390.5	*****	*****	11.8	305.0
30000	314.6	*****	*****	11.8	275.0
30873	303.0	-39.9	-49.9	*****	*****
31102	300.0	-40.5	*****	16.9	280.0
35000	251.2	*****	*****	11.8	275.0
35105	250.0	-50.9	*****	11.8	275.0
36001	239.5	*****	*****	13.0	275.0
38999	207.5	*****	*****	23.9	310.0
39764	200.0	-61.1	*****	28.9	315.0
41001	188.1	*****	*****	28.9	315.0
41667	182.0	-60.7	*****	*****	*****
42001	179.0	*****	*****	16.9	305.0
42999	170.4	*****	*****	14.0	265.0
43402	167.0	-64.7	*****	26.0	265.0
45000	154.3	*****	*****	42.0	275.0
45571	150.0	-63.5	*****	39.0	285.0
48278	131.0	-62.9	*****	*****	*****
50000	120.2	*****	*****	35.0	260.0
51230	113.0	-67.9	*****	*****	*****
52999	103.4	*****	*****	33.0	245.0
53675	100.0	-66.9	*****	33.0	245.0
53999	98.4	*****	*****	33.0	245.0
54485	96.0	-68.3	*****	*****	*****
57001	84.6	*****	*****	29.9	270.0
60000	72.7	*****	*****	21.0	260.0
60761	70.0	-64.7	*****	24.9	265.0
61978	65.9	-62.7	*****	*****	*****
63999	59.6	*****	*****	22.9	290.0
65049	56.6	-63.5	*****	*****	*****
66001	54.0	*****	*****	13.0	270.0
67552	50.0	-61.5	*****	10.9	275.0
67999	48.9	*****	*****	10.9	275.0
69304	45.9	-58.3	*****	*****	*****
70000	44.4	*****	*****	11.8	255.0
71001	42.3	*****	*****	11.8	245.0
75000	34.8	*****	*****	15.0	285.0
78018	30.0	-60.7	*****	22.0	280.0
78586	29.2	-60.5	*****	*****	*****
81017	26.0	-55.3	*****	*****	*****
85000	21.5	*****	*****	17.9	285.0
85492	21.0	-52.1	*****	*****	*****
86516	20.0	-53.3	*****	15.9	280.0
90000	17.0	*****	*****	21.0	265.0
92001	15.5	*****	*****	23.9	265.0
93453	14.4	-53.3	*****	*****	*****

Appendix C
UTILITY APPLICATIONS

Nearest 50 Stations	C-2
Station Locator	C-4

NEAREST 50 STATIONS

This program provides a list of the 50 closest active weather stations to a selected point by searching the AWS Master Station Catalog database. Since tapes are not involved, the information is processed and available in minutes.

Program Inputs. At the input panel (see example), enter the following:

- **Latitude and Longitude.** Enter hemisphere (north/south, east/west) followed by degrees and minutes (HDD.MM).
- **Station reporting type.** Select "surface" or "upper air"; Tab to your choice and select it with the space bar.

NEAREST 50 STATIONS

Latitude: Longitude:
HDD.MM HDDD.MM

Choose type of reporting station

☒ Surface
☐ Upper Air

Identifier:

< Submit > < Cancel >

Figure C-1. Example Nearest 50 Stations Input Panel.

- **Identifier.** Input a unique name (up to 40 characters) for each job submitted.
- **Submit/Cancel.** Select "Submit" to start program, or "Cancel" to change entries.

Output Tables. As shown in the example, the output table lists the 50 stations closest to the point you have selected. The 50 closest stations are ordered by distance from the selected point, closest stations first. Each listing provides latitude and longitude, block station number, station name, state or country, and distance from the selected point.

Example Nearest 50 Stations Table

NEAREST FOR DIALIN

THE FOLLOWING LIST OF STATIONS FROM THE AWS MASTER STATION
CATALOG ARE THE 50 CLOSEST SURFACE STATIONS TO THE POINT:

LATITUDE: 38.33 N LONGITUDE: 89.50 W

BLKSTN	STATION NAME	ST/CNTRY	LATITUDE	LONGITUDE	DIST (NM)
724338	SCOTT AFB/BELLEVILL	IL	38.33 N	89.51 W	
725314	CAHOKIA/ST. LOUIS	IL	38.34 N	90.09 W	14
724395	ALTON/ST LOUIS RGNL	IL	38.54 N	90.03 W	23
724340	ST. LOUIS/LAMBERT	MO	38.45 N	90.22 W	27
724345	SPIRIT OF ST LOUIS	MO	38.40 N	90.39 W	38
724335	MOUNT VERNON (AWOS)	IL	38.19 N	88.52 W	47
724336	CARBONDALE/MURPHYSB	IL	37.47 N	89.15 W	53
724339	MARION REGIONAL	IL	37.45 N	89.01 W	61
724390	SPRINGFIELD/CAPITAL	IL	39.51 N	89.40 W	78
723489	CAPE GIRARDEAU MUNI	MO	37.14 N	89.34 W	80
725316	DECATUR AIRPORT	IL	39.50 N	88.52 W	89
724456	ROLLA/VICHY AIRPORT	MO	38.08 N	91.46 W	94
724350	PADUCAH/BARKLEY &	KY	37.04 N	88.46 W	102
724396	QUINCY MUNI/BALDWIN	IL	39.57 N	91.12 W	105
724458	JEFFERSON CITY MEM	MO	38.35 N	92.09 W	108
724238	HENDERSON CITY	KY	37.49 N	87.41 W	110
723300	POPLAR BLUFF(AMOS)&	MO	36.46 N	90.28 W	111
724320	EVANSVILLE REGIONAL	IN	38.03 N	87.32 W	112
724450	COLUMBIA REGIONAL	MO	38.49 N	92.13 W	112
725315	CHAMPAIGN/URBANA	IL	40.02 N	88.17 W	114
724457	FORT LEONARD WOOD	MO	37.44 N	92.08 W	119
724397	BLOOMINGTON/NORMAL	IL	40.29 N	88.55 W	123
725320	PEORIA REGIONAL	IL	40.40 N	89.41 W	127
724373	TERRE HAUTE/HULMAN&	IN	39.27 N	87.19 W	129
724459	KAISER MEM (AWOS)	MO	38.06 N	92.33 W	130
724237	OWENSBORO/DAVIESS	KY	37.44 N	87.10 W	135
724398	DANVILLE/VERMILION	IL	40.12 N	87.36 W	143
723480	WEST PLAINS	MO	36.44 N	91.51 W	145
725323	GALESBURG MUNICIPAL	IL	40.56 N	90.26 W	145
725455	BURLINGTON MUNI	IA	40.47 N	91.08 W	146
723406	WALNUT RIDGE (AWOS)	AR	36.08 N	90.55 W	153
723347	DYERSBURG MUNICIPAL	TN	36.00 N	89.24 W	154
724375	BLOOMINGTON/MONROE	IN	39.09 N	86.37 W	154
723408	EAKER AFB	AR	35.58 N	89.57 W	155
724455	KIRKSVILLE REGIONAL	MO	40.06 N	92.33 W	156
746710	FORT CAMPBELL (AAF)	KY	36.40 N	87.30 W	158
723407	JONESBORO MUNICIPAL	AR	35.50 N	90.39 W	167
724386	LAFAYETTE/PURDUE U	IN	40.25 N	86.56 W	174
724467	WHITEMAN AFB	MO	38.44 N	93.33 W	174
725440	MOLINE/QUAD CITY	IL	41.27 N	90.31 W	176
744600	MARSEILLES (AMOS)	IL	41.22 N	88.41 W	177
724380	INDIANAPOLIS INTL	IN	39.44 N	86.16 W	180
723346	JACKSON/MCKELLAR	TN	35.36 N	88.55 W	182
723447	FLIPPIN (AWOS)	AR	36.18 N	92.28 W	184
724400	SPRINGFIELD MUNI	MO	37.14 N	93.23 W	185
724240	FORT KNOX/GODMAN &	KY	37.54 N	85.58 W	186
746716	BOWLING GREEN	KY	36.58 N	86.25 W	187
724363	COLUMBUS/BALKALAR &	IN	39.16 N	85.54 W	188
723448	BATESVILLE (AWOS)	AR	35.44 N	91.39 W	190
723345	MEMPHIS NAS	TN	35.21 N	89.52 W	192

STATION LOCATOR

The Station Locator program selects the best and most reliable surface or upper-air reporting stations within a user-specified area.. Five-degree squares or less are the optimum input, especially in data-dense areas.

Program Inputs. At the input panel (see example), enter the following:

- **Station Type.** select either "Surface" or "Upper Air" using the **Tab** key and **Space Bar** to select.
- **Include Station History?** Selecting "Yes" will report all changes that a station has gone through (e.g., moving observing site, changing WMO number, etc.). Selecting "No" will provide current station information only.

Figure C-2. Example Station Locator Input Panel.

- **Latitude/Longitude.** Enter lesser and greater values in four digits for latitude (DDMM) and five digits for longitude (DDMM). Select hemisphere (north/south, east/west) for each.
- **Observation Data.** Tab to the input panel that matches the selected "Station Type" and make the entries described below.

For Surface Stations:

Average Monthly Obs. Select a value that will encourage selection of stations that report most of the time; a number between 150 and 200 has been found acceptable. For data-sparse areas, use a lower number (70 or less).

Number of Months. This determines the period of record searched. Enter 60 for a 5-year POR and 120 for 10 years.

Number of Key Obs. This is the average number of observations a month for the hours of 00, 06, 12, and 18Z. For example, the maximum number of reports from a station that reports every 3 hours should be 112-124. A number between 70 and 90 would let your search include all stations that report most of the time.

For Upper Air Stations:

Average Yearly Obs. Select a value that will encourage selection of stations that report most of the time; a reasonable entry is from 50 to 200. Use lower numbers for data-sparse areas.

Number of years. A range of 1 to 10 is acceptable.

Minimum Obs Per Hour. A reasonable entry is 20.

- **Identifier.** Enter a unique name (up to 40 characters) for each job submitted.
- **Submit/Cancel.** Select "Submit" to start program, or "Cancel" to change entries.

Output Tables for Surface Stations. Output is in three sections.

- **The first section** (shown in the example) lists each reporting station within the requested coordinates, as follows:

BLKSTN	Block station number
NAME	Name of the reporting station
STA	Stat or country Abbreviation
ELEV	Elevation in meters
LAT	Latitude
LONG	Longitude
TYP	Type of surface data
SST	Station status (*flagged stations explained in legend at bottom of output)
YYCHG	Year of change (e.g., year station changed WMO number, etc.)
MMCHG	Month of change (e.g., month station changed WMO number, etc.)
TYPCHG	Type of change (provided in a legend at bottom of output)

- **The second section** (not shown) lists all the surface stations that fall within the user-specified criteria for average monthly obs, etc.). Most of the averages are monthly, and they may be much larger than you would have expected. For example, although a 24-hour operating station that reports sea level pressure in every observation will have large numbers, it is an excellent indicator of reliability. The information below is provided for each station:

BLKSTN	Block station number
POR	Gives beginning and ending years of the period of record used
KEYOB	Average number of times key observations met requirement each month
00-21	Each three hour reporting period is given along with the average reporting reliability
DIR	Direction reliability numbers
SPD	Speed reliability numbers
GST	Gust numbers (based on average month)
SLP	Sea level pressure reporting reliability numbers (month)
WW1	Weather report numbers
WW	Weather report numbers

DPD	Dew point depression numbers
ALST	Altimeter setting numbers
TMP	Temperature numbers
MXTMP	Maximum temperature numbers
MNTMP	Minimum temperature numbers
PRC	Precipitation report numbers
OFTM	Off time report numbers
SP_S	Special observation numbers
SNOD	Snow depth numbers

- **The last section** (not shown) is an actual plot of the stations that meet the defined criteria, with grid coordinates. It allows the user to view the stations in relation to each other.

Output Tables for Upper-Air Stations. The upper-air output (see example on Page C-8) is also in three sections.

- **The first section** gives the same information as for surface stations from block station through latitude/longitude, with this supplemental entry:

REPORTS Station reporting codes (provided in legend at bottom of output)

- **The second section** lists the stations that meet the user's requirements, in the following format:

BLKSTN	Block station number
LAT	Latitude
LON	Longitude
POR	Period of record
HOURS	An "x" marks the hours that met the criteria
AVG TOT OBS	Average total observations per year
TOTAL OBS	Total observations
REPORTS	Station reporting codes

- **The last section** (not shown in the example) is an actual plot of the stations that meet the defined criteria, with grid coordinates. It allows the user to view the stations in relation to each other.

Example Surface Station Locator Table

STATION LOCATOR

REPORTING STATIONS BETWEEN LATs 01014 & 03000 N AND LONS 04510 & 12045 W

BLKSTN	NAME	STA	ELEV	LAT	LOH	TYP	SST	YYCHG	MMCHG	TYPCHG
804130	MARISCAL SUCRE(MIL) VN		437	10.15 N	67.39 W		6	92	01	6
804103	SAN FELIPE VN		232	10.17 N	68.45 W		2	90	06	7
804143	CARACAS/OSCAR MACHA VN		654	10.18 N	66.49 W		2	90	04	7
804790	PALMICHAL,ESTADO VN		1000	10.18 N	68.14 W		4	92	02	7
788250	CLIPPERTON ISL(AUT) CA		999	10.18 N	109.13 W		0	91	03	6
800360	VALLDUPAR/ALFONSO CO		138	10.26 N	73.15 W		4 *	88	08	6
804200	CUMANA/ANTONIO JOSE VN		4	10.27 N	64.11 W		6	90	08	6
800220	CARTAGENA/RAFAEL NU CO		1	10.27 N	75.31 W		6	90	08	6
804203	HIGUEROTE VN		4	10.28 N	66.06 W		2	90	06	7
804160	CARACAS/LA CARLOTA& VN		835	10.30 N	66.53 W		6	90	04	6
804120	PUERTO CABELLO(MIL) VN		2	10.30 N	68.00 W		6	91	08	6
804760	LA CANADA/MARACAIBO VN		26	10.31 N	71.39 W		4	90	08	6
804070	MARACAIBO/LA CHINTA VN		65	10.34 N	71.44 W		6	90	08	6
804230	GUIRIA VN		14	10.35 N	62.19 W		6	90	08	6
804150	CARACAS/S. BOLIVAR VN		48	10.36 N	66.59 W		6	93	09	6
787740	LIBERIA/TOMAS GUARD CS		93	10.36 N	85.33 W		6	91	05	6
789700	PIARCO INTL AIRPORT TD		15	10.37 N	61.21 W		6	91	03	6
789670	PORT OF SPAIN TD		2	10.39 N	61.31 W		0 *	91	03	6
804223	CARUPANO/GEN. JOSE VN		10	10.40 N	63.16 W		2	90	04	7
800280	BARRANQUILLA/ERNEST CO		10	10.54 N	74.46 W		6	90	08	6
804210	PORLAMAR DEL CARIBE VN		19	10.55 N	63.58 W		4 *	90	08	6
804214	MARGARITA/DEL CARIB VN		23	10.55 N	63.59 W		2	90	04	6
800090	SANTA MARTA/SIMON CO		1	11.08 N	74.14 W		6	90	08	6
789620	CROWN POINT AIRPORT TD		6	11.09 N	60.50 W		4 *	91	03	6
789613	CROWN PT./SCARBOROU TD		8	11.09 N	60.51 W		2	91	03	6
804030	CORO/JOSE LEONARDO VN		17	11.25 N	69.41 W		6	90	08	6
787330	RIVAS NK		53	11.25 N	85.50 W		6	91	10	6
800350	RIOHACHA/ALMIRANTE CO		4	11.32 N	72.56 W		0 *	92	07	6
804043	PARAGUANA/JOSEFA VN		23	11.47 N	70.09 W		2	90	04	7
804050	LA ORCHILA ISL(MIL) VN		3	11.48 N	66.11 W		4 *	90	08	6
789580	POINT SALINES INTL& GD		7	12.00 N	61.47 W		6	91	08	5
787450	BLUEFIELDS NK		5	12.00 N	83.46 W		0 *	91	03	6

Example Upper-Air Station Locator Table

REPORTING STATIONS BETWEEN LATS 03433 & 04233 N AND LONS 08550 & 09430 W

BLKSTN	NAME	STA	ELEV	LAT	LON	REPORTS
723270	NASHVILLE METRO	TN	180	36.15 N	86.34 W	RPS
723340	MEMPHIS INTL ARPT	TN	101	35.03 N	90.00 W	S
723400	NORTH LITTLE ROCK	AR	172	34.50 N	92.15 W	RPS
723490	MONETT	MO	437	36.53 N	93.54 W	RP
724240	FORT KNOX/GODMAN	& KY	230	37.54 N	85.58 W	S
724320	EVANSVILLE REGIONAL	IN	127	38.03 N	87.32 W	S
724330	SALEM-LECKRONE	IL	174	38.39 N	88.58 W	I
724340	ST. LOUIS/LAMBERT	MO	174	38.45 N	90.23 W	S
724350	PADUCAH/BARKLEY	& KY	126	37.04 N	88.46 W	RPS
724380	INDIANAPOLIS INTL	IN	243	39.44 N	86.17 W	S
724400	SPRINGFLD MUNI(AWS)	MO	386	37.14 N	93.23 W	S
724450	COLUMBIA REGIONAL	MO	271	38.49 N	92.13 W	S
725320	PEORIA REGIONAL	IL	201	40.40 N	89.41 W	RPS
725340	CHICAGO/MIDWAY	IL	189	41.47 N	87.45 W	S
725440	MOLINE/QUAD CITY	IL	180	41.27 N	90.31 W	S
725450	CEDAR RAPIDS MUNI	IA	263	41.53 N	91.42 W	S

REPORTING STATIONS BETWEEN LATS 03433 & 04233 N AND LONS 08550 & 09430 W

OPTIONS REQUESTED: AVG. YEARLY OBS= 1000 NUMBER OF YEARS= 9 CUTOFF HOURS= 200

BLKSTN	LAT	LON	POR	HOURS(00 06 12 18 OFF)	AVG_TOT_OBS	TOTAL_OBS	REPORTS
723270	36.15 N	86.34 W	16		1452	23245	RPS
723400	34.50 N	92.15 W	16		1455	23294	RPS
723490	36.53 N	93.54 W	16		1434	22958	RP
724330	38.39 N	88.58 W	16		1443	23102	I
725320	40.40 N	89.41 W	16		1448	23179	RPS

STATION REPORTING STATUS:

RPS = RAOB, PIBAL AND SURFACE
 RP = RAOB AND PIBAL
 RS = RAOB AND SURFACE
 PS = PIBAL AND SURFACE
 R = RAOB
 P = PIBAL
 S = SURFACE
 I = INACTIVE

DISTRIBUTION

HQ AF XOWP 1490 AIR FORCE PENTAGON WASHINGTON DC 20330-1490 1
 HQ AF XOWR RM BF866 1490 AIR FORCE PENTAGON WASHINGTON DC 20330-1490 1
 HQ USAF XOOOW RM BD927 5054 AIR FORCE PENTAGON WASHINGTON DC 20330-5054 1
 OSAF SS RM 4C1052 6560 AIR FORCE PENTAGON WASHINGTON DC 20330-6560 1
 USTC J3 J4-OW BLDG 1900 508 SCOTT DR SCOTT AFB IL 62225-5357 1
 TACC WXF BLDG 1600 SCOTT AFB IL 62225-5000 1
 AWS TX 102 W LOSEY ST BLDG 1521 SCOTT AFB IL 62225-5206 1
 AWS DO 102 W LOSEY ST BLDG 1521 SCOTT AFB IL 62225-5206 1
 AWS XT 102 W LOSEY ST BLDG 1521 SCOTT AFB IL 62225-5206 1
 DET 5 HQ AWS WALL STUDIO BLDG 0902 709 H ST STE 201 KEESLER AFB MS 39534-2447 1
 OL-B HQ AWS (ESC AVD) 20 SCHILLING CIRCLE HANSCOM AFB MA 01731-2816 1
 OL-F HQ AWS SMC CIA PO BOX 92960 2401 EL SEGUNDO BLVD LOS ANGELES CA 90009-2960 1
 OL-K HQ AWS NEXRAD OPS SUPPORT FACILITY 3200 MARSHALL DR STE 100 NORMAN OK 73072-8028 1
 OL-N HQ AWS C O ARL (AMSL-RE-W) BLDG 1646 RM 24 WHITE SANDS MISSILE RNG NM 88002-5501 1
 OL-M HQ AWS SM-ALC H 320 PEACEKEEPER WAY STE 3 MCCLELLAN AFB CA 95652-1027 1
 HQ AFGWC DO MBB39 106 PEACEKEEPER DR STE 2N3 OFFUTT AFB NE 68113-4039 1
 HQ AFGWC DOM MBB39 106 PEACEKEEPER DR STE 2N3 OFFUTT AFB NE 68113-4039 1
 HQ AFGWC SY MBB39 106 PEACEKEEPER DR STE 2N3 OFFUTT AFB NE 68113-4039 1
 HQ AFGWC RM MBB39 106 PEACEKEEPER DR STE 2N3 OFFUTT AFB NE 68113-4039 1
 AFSFC DOM 715 KEPLER AVE STE 60 FALCON AFB CO 80912-7160 1
 OL-A AFSFC RE SE2 325 BROADWAY BOULDER CO 80303-3328 1
 DET 2 AFSFC PO BOX 2517 SO HAMILTON MA 01982-0517 1
 DET 3 AFSFC PO BOX 261 RAMEY PR 00604-0261 1
 DET 4 AFSFC OBSERVATORY RD BLDG 912 HOLLOMAN AFB NM 88330-5000 1
 DET 5 AFSFC 10 HICKAM COURT (PALEHUA SOLAR OBS LAB) HICKAM AFB HI 96853-5254 1
 DET 8 AFSFC UNIT 6270 PSC 55 APO AE 09605-5000 1
 DET 9 AFSFC LEARNMOUTH SOLAR OBSERVATORY APO AP 96553-5000 1
 USAFETAC 859 BUCHANAN ST SCOTT AFB IL 62225-5116 1
 OL-A USAFETAC FEDERAL BUILDING RM 305 ASHEVILLE NC 28801-2723 1
 USSTRATCOM J3615 901 SAC BLVD STE 1F14 OFFUTT AFB NE 68113-6700 1
 USCENTCOM CCJ3-W BLDG 540 MACDILL BLVD MACDILL AFB FL 33608-7001 1
 USSOCENT SOCJ2-SWO 7115 S BOUNDARY BLVD MACDILL AFB FL 33621-5101 1
 USSOCOM SOJ3-W SPEC OPS MACDILL AFB FL 33605-6001 1
 ACC DOW 30 ELM ST STE 215 LANGLEY AFB VA 23655-2093 1
 1 WS CC 190 E FLIGHTLINE RD STE 100 LANGLEY AFB VA 23665-5508 1
 1 WS CC WEATHER SUPPORT UNIT BLDG 693 RM 203 LANGLEY AFB VA 23665-5000 1
 2 WS CC 245 DAVIS AVE EAST BARKSDALE AFB LA 71110-2269 1
 24WS CC UNIT 0640 APO AA 34001-5000 1
 4402 SSD WAX APO AA 34002-5000 1
 46 WF 601 W CHOCTAWHATCHEE AVE STE 60 EGLIN AFB FL 32542-5719 1
 DET 1 NEADS DOW 105 MAINEAC AVE STE 510 BANGOR ANG ME 04401-3099 1
 2AF DRW 8801 C ST STE 600 BEALE AFB CA 95903-1537 1
 4 OSS OSW 1980 CURTISS AVE STE 100 SEYMOUR JOHNSON AFB NC 27531-2524 1
 5 OSS OSW 221 FLIGHT LINE DR UNIT 2 MINOT AFB ND 58705-5021 1
 6 OSS OSW 7709 HANGAR LOOP STE 2 MACDILL AFB FL 33621-5205 1
 USCENTAF A3-DOOW STE 225 524 SHAW DR SHAW AFB SC 29152-5029 1
 9 OSS DOW 7800 ARNOLD AVE STE 100 BEALE AFB CA 95903-1217 1
 10 OSS DOW F AVE BLDG 401 STE 7 KI SAWYER AFB MI 49843-3400 1
 12 AF DOOSM 5325 E KACHINA ST DAVIS-MONTHAN AFB AZ 85707-4921 1
 22 OSS DOW 2645 GRAEBER ST STE 3 MARCH AFB CA 92518-2264 1
 27 OSS OSW 110 E SEXTANT AVE STE 1040 CANNON AFB NM 88103-5322 1
 28 OSS OSW 1820 VANDENBURG CT ELLSWORTH AFB SD 57706-4729 1
 42 CS OSW GEORGIA RD BLDG 8200 RM 10 LORING AFB ME 04751-5000 1
 43 OSS DOW 7224 FLIGHTLINE DR MALMSTROM AFB MT 59402-7526 1
 49 OSS OSW BLDG 571 HOLLOMAN AFB NM 88330-5000 1
 55 OSS OSWB 513 SAC BLVD STE 101 OFFUTT AFB NE 68113-2094 1
 57 OSS OSW 6278 DEPOT RD STE 102 NELLIS AFB NV 89191-7256 1
 58 OSS OSW 8TH ST 7254 N 142 AVE STE 3 LUKE AFB AZ 85309-1233 1
 OL-A 58 OSS OSW BLDG 324 GILA BEND AFAF AZ 85337-5000 1
 90 OSS DOW 7505 SABER RD BLDG 1250 FE WARREN AFB WY 82001-5000 1
 92 OSS OSW BLDG 1 FAIRCHILD AFB WA 99011-5000 1
 93 OSS DOW 7TH ST BLDG 1340 CASTLE AFB CA 95342-5000 1
 7 OSS OSW 674 ALERT AVE DYESS AFB TX 79607-1774 1
 97 OSS WXF 603 E AVE STE 1 ALTUS AFB OK 73523-5033 1
 305 OSS DOW HOOSIER BLVD BLDG S-28 GRISSOM AFB IN 46971-5000 1
 319 OSS DOW 695 STEEN AVE BLDG 528 STE 106 GRAND FORKS AFB ND 58205-6244 1

325 OSS OSW STOP 22 TYNDALL AFB FL 32403-5048 1
347 OSS OSW 8227 KNIGHTS WAY STE 106 MOODY AFB GA 31699-1899 1
355 OSS OSW PHOENIX ST BLDG 4820 DAVIS-MONTHAN AFB AZ 85707-6801 1
366 OSS OSW 665 THUNDERBOLT ST MT HOME AFB ID 83648-5401 1
380 OSS OSW 111 ARIZONA AVE STE 154 PLATTSBURGH AFB NY 12903-2705 1
384 OSS DOW 53435 KANSAS CT STE 110 MCCONNELL AFB KS 67221-5000 1
416 OSS OSW 582 HGR RD BLDG 100 STE 121 GRIFFISS AFB NY 13441-4520 1
509 OSS OSW 745 ARNOLD AVE STE 1A WHITEMAN AFB MO 65305-5026 1
HQ 1ST WEAG WSOT BLDG 130 ANDERSON WAY FT MCPHERSON GA 30330-5000 1
OL-A 1ST WEAG BLDG 6212 FT IRWIN CA 92310-3000 1
OL-AA 1ST WEAG BLDG 91251 LIBBY AAF GREELY HALL FT HUACHUCA AZ 85613-5000 1
DET 1 1ST WEAG BLDG 7163 FT CAMPBELL KY 42223-5000 1
DET 2 1ST WEAG BLDG 3136 STOP 746 FT BELVOIR VA 22060-5746 1
DET 3 1ST WEAG BLDG AT3551 PRAGER ST FT BRAGG NC 28307-5000 1
DET 4 1ST WEAG BLDG 2065 RM 139 HANGAR ACCESS DR FT DRUM NY 13602-5042 1
DET 5 1ST WEAG 5220 PILOT ST FT KNOX KY 40121-5540 1
DET 6 1ST WEAG BLDG 3082 AIRPORT WAY FT LEVMS VA 98433-5000 1
DET 8 1ST WEAG 743 RAY PLACE MARSHALL AAF FT RILEY KS 66442-5317 1
OL-A DET 8 1ST WEAG FORNEY AAF BLDG 5004 FT LEONARD WOOD MO 65473-5862 1
DET 9 1ST WEAG BLDG 3051 FT RUCKER AL 36362-5162 1
OL-A DET 9 1ST WEAG RT 3 BOX 302 TROY AL 36081-5000 1
DET 10 1ST WEAG BLDG 2485 RM 110 LAWSON AAF FT BENNING GA 31905-6034 1
DET 11 1ST WEAG BLDG 4907 FT SILL OK 73503-5100 1
DET 12 1ST WEAG BLDG P-680 QUEBEC ST FT DEVENS MA 01433-5310 1
DET 13 1ST WEAG BLDG 2408 FT EUSTIS VA 23604-5252 1
DET 14 1ST WEAG BLDG 90049 CLARKE RD FT HOOD TX 76544-5076 1
OL-A DET 14 1ST WEAG BLDG 11210 BIGGS AAF TX 79916-2418 1
DET 21 1ST WEAG BLDG 7755 HUNTER AAF GA 31409-5193 1
DET 31 1ST WEAG POLK AAF BLDG 4226 FT POLK LA 71459-6250 1
DET 58 1ST WEAG BLDG 9601 BUTTS AAF FT CARSON CO 80913-6403 1
AMC XOW 402 SCOTT DR RM 132 SCOTT AFB IL 62225-5363 1
AMC XOWR 402 SCOTT DR UNIT 3A1 SCOTT AFB IL 62225-5302 1
1 SOW OGSW 150 BENNETT BLDG 90730 HURLBURT FLD FL 32544-5000 1
23 OSS OSW 1427 SURVEYOR ST STE A POPE AFB NC 28308-2797 1
60 OSS WKF 401 2D ST BLDG P4 TRAVIS AFB CA 94535-5986 1
62 OSS WKF 1172 E ST MOCHORD AFB WA 98438-1008 1
89 OSS WKF 1240 MENCHER DR BLDG 1220 ANDREWS AFB MD 20331-6511 1
97 OSS WKF 603 E AVE STE 1 ALTUS AFB OK 73523-5033 1
23OSS OSW BLDG 708 POPE AFB NC 28308-5000 1
314 OSS OSW 2740 FIRST ST BLDG 120 LITTLE ROCK AFB AR 72099-5060 1
375 WS OGWB 433 HANGAR RD RM 139 SCOTT AFB IL 62225-5029 1
377 ABW OTW 3400 CLARK AVE KIRTLAND AFB NM 87117-5776 1
436 OSS WKF 501 EAGLE WAY STE B BLDG 501 DOVER AFB DE 19902-7504 1
437 OSS SSW 101 S BATES STE A BLDG 162 CHARLESTON AFB SC 29404-5013 1
438 OSS WKF BLDG 1730 VANDENBERG AVE MCGUIRE AFB NJ 08641-5509 1
HQ AFSPACECOM DOGW 150 VANDENBERG ST STE 1105 PETERSON AFB CO 80914-4200 1
21 OSS OGSW CHEYENNE MTN AFB CO 80914-6113 1
50 OSS WE (WEATHER FLIGHT) 300 O'MALLEY AVE STE 26 FALCON AFB CO 80912-3026 1
45 WS BLDG 423 C ST PATRICK AFB FL 32925-6537 1
AFTAC TNLW 1030 S HWY A1A PATRICK AFB FL 32925-3002 1
30 WS 900 CORRAL RD BLDG 21150 VANDENBERG AFB CA 93437-5002 1
SSD IMO PO BOX 92960 LOS ANGELES CA 90009-2960 1
SMC SDEW 160 SKYNET ST STE 2315 LOS ANGELES AFB CA 90245-4683 1
SMC CIA 2420 VELA WAY SUITE 1467 D 9 LOS ANGELES AFB CA 90245-4659 1
DET 2 SMC TDOR (WEATHER) ONIZUKA AFB 1080 LOCKHEED WAY BOX 044 BLDG 1001 SUNNYVALE CA 90488-1235 1
OD 4 DX ONIZUKA AFB CA 94088-3430 1
SSD OD 4 ONIZUKA AFB CA 94088-3430 1
DET 3 SPACE SYSTEMS BLDG 430 STOP 77 BUCKLEY ANG CO 80011-9599 1
NASA-MSFC-ES44 ATTN DALE JOHNSON HUNTSVILLE AL 35812-5000 1
NASA-MSFC-ES44 ATTN GAVENEVERE JASPER HUNTSVILLE AL 35812-5000 1
HQ NORAD US J2D STE 101-130 ATTN KEN BARBER 1 NORAD RD CHEYENNE MTN CO 80914-6092 1
AFMC DOW 4225 LOGISTICS AVE STE 2 WRIGHT PATTERSON AFB OH 45433-5714 1
FASTC TAW 4115 HEBBLE CREEK RD STE 33 WRIGHT-PATTERSON AFB OH 45433-5637 1
AFIT CIR WRIGHT-PATTERSON AFB OH 45433-6583 1
AFIT ENP 2960 P ST WRIGHT PATTERSON AFB OH 45433-7765 1
WRDC WE BLDG 22 WRIGHT-PATTERSON AFB OH 45433-6543 1
2750ABW WE BLDG 206 AREA C SKEEL AV WRIGHT PATTERSON AFB OH 45433-6543 1
645 WS DO 5291 SKEEL AVE STE 1 WRIGHT-PATTERSON AFB OH 45433-5231 1
649 SPTG DOW 5970 SOUTHGATE AVE HILL AFB UT 84056-5232 1

651 OSS OSW 303 LUKE DR STE 1 KELLY AFB TX 78241-5638 1
652 OSS DOW 3028 PEACEKEEPER STE 4 MCCLELLAN AFB CA 95652-1020 1
653 OSS/OSW 250 EAGLE STREET STE 202 ROBINS AFB GA 31098-2602 1
654 SPTG DOW 3800 A AVE TINKER AFB OK 73145-9108 1
2853 ABG DOW BLDG 110 ROBINS AFB GA 31098-5000 1
3246 TW DOW BLDG 60 RM 60 EGLIN AFB FL 32542-5000 1
377 ABW CC 3400 CLARK AVE SE KIRTLAND AFB NM 87117-5776 1
412 OSS WE 85 S FLIGHTLINE RD EDWARDS AFB CA 93524-6460 1
UTTR WE HILL AFB UT 84056-5000 1
AFOTEC WE KIRTLAND AFB NM 87117-7001 1
ESMC WE PATRICK AFB FL 32925-5000 1
ESC WE 5 EGLIN ST HANSCOM AFB MA 01731-2122 1
PL GP ATTN DR HAROLD ROTH 29 RANDOLPH RD HANSCOM AFB MA 01731-3010 1
PL TSMIL 5 WRIGHT ST HANSCOM AFB MA 017313004 1
PL WE 3350 ABERDEEN KIRTLAND AFB NM 87117-5987 1
AFCEA WE TYNDALL AFB FL 32403-5000 1
AFESC RDXT BLDG 1120 STOP 21 TYNDALL AFB FL 32403-5000 1
46 TG WE HOLLOMAN AFB NM 88330-5000 1
325 OSS OSW FLORIDA AVE STOP 22 BLDG 149 TYNDALL AFB IL 32403-5048 1
OL-A AFCCS SITE R FORT RITCHIE MD 21719-5010 1
USAFALCENT RA POPE AFB NC 28308-5000 1
CCSO FL TINKER AFB OK 73145-6340 1
304 ARRS DOOR PORTLAND IAP OR 97218-2797 1
AFOSR NL BOLLING AFB DC 20332-5000 1
AL OEBE 2402 EAST DRIVE BROOKS AFB TX 78235-5114 1
AETC XOSW 1F ST STE 2 RANDOLPH AFB TX 78150-4325 1
12 OSS DOW H-08 1350 5TH STREET EAST RANDOLPH AFB TX 78150-4410 1
14 OSS DOW 595 1ST ST STE 3 COLUMBUS AFB MS 39701-4201 1
64 OSS DOW 145 N DAVIS DR BLDG 79 REESE AFB TX 79489-5000 1
80 OSS/DOAW 620 J AVE STE 3 SHEPPARD AFB TX 76311-2553 1
71 OSS DOW 623 ELAM RD SUITE 110 VANCE AFB OK 73705-5412 1
47 OSS DOW 541 1ST ST SUITE 2 LAUGHLIN AFB TX 78843-5210 1
81 SPTG OSFWX 817 H ST STE 102 KEESLER AFB MS 39534-2452 1
334 TTS TTMV BDLG 4332 700 H ST KEESLER AFB MS 39534-2499 1
502 OSS OSW 40 ARNOLD ST S MAXWELL AFB AL 36112-6601 1
6585 TG WE RANGE RD BLDG 1183 HOLLOMAN AFB NM 88330-5000 1
5 WS (PACAF) UNIT 15173 APO AP 96205-0108 1
DET 1 5 WS UNIT 15678 APO AP 96205-0678 1
OL-A DET 1 5 WS UNIT 15630 APO AP 96208-0195 1
OL-B DET 1 5 WS UNIT 15242 APO AP 96205-0015 1
OL-C DET 1 5 WS UNIT 15676 APO AP 96297-0676 1
DET 2 5 WS UNIT 15200 APO AP 96271-0136 1
OL-A DET 2 5 WS UNIT 15673 APO AP 96218-0673 1
DET 3 5 WS UNIT 15674 APO AP 96258-0674 1
OL-A DET 3 5 WS UNIT 15675 APO AP 96257-0675 1
OL-B DET 3 5 WS UNIT 15118 APO AP 96224-04201 1
8 OSS WS UNIT 2139 APO AP 96264-2139 1
603 ACCS WE UNIT 2051 APO AP 96278-2072 1
PACAF DOW BLDG 1102 25 E ST STE 1232 HICKAM AFB HI 96853-5426 1
15 WS 800 HANGAR AVE HICKAM AFB HI 96853-5244 1
DET 1 15WS 1102 WRIGHT AVE WHEELER AAF HI 96854-5200 1
OL-A DET 1 15WS POHAKULOA TRAINING AREA BRADSHAW AAF HI 96556-5000 1
OL-A DET 8 20WS APO AP 96376-1208 1
18 OSS OSW UNIT 5177 BOX 4 APO AP 96368-5177 1
374 OSS DOW UNIT 5222 APO AP 96328-5222 1
OL-A 374 OSS APO AP 96343-0085 1
432 OSS OGSW UNIT 5011 APO AP 96319-5011 1
643 SPTS OF UNIT 12526 APO AP 96513-2526 1
673 OPS WE UNIT 12509 APO AP 96512-2250 1
11 OPF WE 6800 9TH STE 205 ELMENDORF AFB AK 99506-5000 1
3 OSS WE 7TH ST BLDG 32235 ELMENDORF AFB AK 99506-5000 1
354 WS 1215 FLIGHTLINE AVE STE 2 EIELSON AFB AK 99702-1520 1
DET 1 343 WS FT WAINWRIGHT AK 99703-5200 1
633 OSS OSW UNIT 14035 APO AP 96543-4035 1
DET 1 633 OSS COMNAVIMAR PSC 489 BOX 20 FPO AP 96536-0051 1
HQ NATO STAFF MET OFFICER LMS OPS APO AE 09724 1
USAF DOOW UNIT 3050 BOX 15 APO AE 09094-5015 1
3AF DOW UNIT 4840 APO AE 09459-4840 1
16AF WE UNIT 6365 APO AE 09601-6365 1

17AF WE UNIT 4085 APO AE 09136-5000	1
86 WS DO UNIT 8495 APO AE 08094-8495	1
DET 1 86 WS UNIT 7880 APO AE 09126-7880	1
OL A 88 WS UNIT 4070 APO AE 09136-4070	1
10 OSS OSW UNIT 5805 BOX 175 APO AE 09470-5175	1
20 OSS DOM UNIT 5475 APO AE 09466-5475	1
32 OSS WE UNIT 6795 APO AE 09719-6795	1
36 OSS DOM UNIT 3860 BOX 210 APO AE 09132-0210	1
39 OSS OSW UNIT 7090 BOX 115 APO AE 09824-0115	1
48 OSS DOM UNIT 5245 BOX 380 APO AE 09464-5380	1
52 OSS WEF UNIT 8870 BOX 270 APO AE 09126-0270	1
65 ALSS WEF APO AE 09720-7795	1
100 OSS DOW UNIT 4965 APO AE 09459-4965	1
401 OSS OGSW UNIT 6170 APO AE 09601-6170	1
435 OSS DOW UNIT 9080 BOX 190 APO AE 09097-0190	1
7WS DO UNIT 29351 APO AE 09014-5000	1
OL-A 7 WS C O 527 MI OPS APO AE 09157-5000	1
OL-B 7 WS CMR 423 APO AE 09107-5000	1
OL-C 7 WS CMR 445 BOX 260 APO AE 09046-5000	1
OL-F 7 WS UNIT 31401 BOX 6 APO AE 09630-5000	1
OL-J 7 WS CMR 431 APO AE 09175-5000	1
DET 1 7 WS HQ USEUCOM ECJ3-OD-WE UNIT 30400 BOX 1000 APO AE 09128-5000	1
DET 2 7 WS UNIT 20200 APO AE 09165-9816	1
OL-A DET 2 7 WS C/O BKAD 7BN 227 AVN RGT CMR 438 APO AE 09111-500	1
DET 3 7WS UNIT 29231 APO AE 09102-3737	1
OL-A DET 3 7 WS UNIT 29719 BOX 363 APO AE 09028-5000	1
DET 7 7WS UNIT 28130 APO AE 09114-5000	1
OL-A DET 7 7WS UNIT 28216 APO AE 09173-5000	1
DET 8 7WS UNIT 25202 APO AE 09079-5000	1
DET 10 7WS UNIT 26410 APO AE 09182-0006	1
OL-A DET 10 7WS CMR 54 UNIT 31020 APO AE 09250-5000	1
OL-B DET 10 7WS UNIT 26124 APO AE 09031-5000	1
DET 13 7WS CMR 416 BOX S APO AE 09140-9998	1
DET 26 7WS UNIT 29632 APO AE 09096-5000	1
104 WEATHER FLIGHT BLDG 929 FT MEADE MD 20755-5430	1
105 WEATHER FLIGHT TENNESSEE AIR NATIONAL GUARD 240 KNAPP BLVD NASHVILLE TN 37217-2538	1
107 WEATHER FLIGHT SELFRIDGE ANGB MI 48045-5024	1
110 WEATHER FLIGHT 10800 NATURAL BRIDGE RD BRIDGETON MO 63044-2371	1
111 WEATHER FLIGHT ELLINGTON ANGB TX 77034-5586	1
113 WEATHER FLIGHT IN ANG HULMAN FLD TERRE HAUTE IN 47803-5000	1
116 WEATHER FLIGHT WIA ANG BLDG 307 6TH ST MCCHORD AFB WA 98439-1201	1
199 WEATHER FLIGHT MCQUIRE AFB NJ 08641-6004	1
120 WEATHER FLIGHT BUCKLEY ANGB CO 80011-9599	1
121 WEATHER FLIGHT STOP 28 ANDREWS AFB MD 20331-6539	1
122 WEATHER FLIGHT NEW ORLEANS NAS LA 70143-0200	1
123 WEATHER FLIGHT PORTLAND IAP OR 97218-2797	1
125 WEATHER FLIGHT PO BOX 580340 TULSA AFS OK 74158-0340	1
126 WEATHER FLIGHT WIA ANG 350 E COLLEGE MILWAUKEE WI 53207-6298	1
127 WEATHER FLIGHT FORBES FLD TOPEKA KS 66619-5000	1
130 WEATHER FLIGHT YEAGER APT CHARLESTON WV 25311-5000	1
131 WEATHER FLIGHT 1 TANK DESTROYER BLVD BARNES ANGB MA 01085-1385	1
140 WEATHER FLIGHT WILLOW GROVE NAS PA 19090-5105	1
146 WEATHER FLIGHT GTR PITTSBURG ANG AN PA 15231-0459	1
154 WEATHER FLIGHT CAMP ROBINSON NORTH LITTLE ROCK AR 72118-2200	1
156 WEATHER FLIGHT 5225 MORRIS FLD DR CHARLOTTE NC 28208-5797	1
159 WEATHER FLIGHT C O HQ FLANG STATE ARSENAL ST AUGUSTINE FL 32085-1008	1
163 WEATHER FLIGHT FT WAYNE MAP IN 46809-5000	1
164 WEATHER FLIGHT RICKENBACKER ANGB OH 43217-5007	1
165 WEATHER FLIGHT STANDIFORD FLD LOUISVILLE KY 40213-2678	1
181 WEATHER FLIGHT 8150 W JEFFERSON BLV DALLAS TX 75211-9570	1
182 WEATHER FLIGHT KELLY AFB TX 78241-7001	1
195 WEATHER FLIGHT BLDG 106 106 MULCAHEY DR PORT HUENENE CA 93041-4003	1
199 WEATHER FLIGHT 1102 WRIGHT AVE HICKAM AFB HI 96853-5200	1
200 WEATHER FLIGHT 5680 BELLAH RD SANDSTON VA 23150-6109	1
202 WEATHER FLIGHT OTIS ANGB MA 02542-5028	1
203 WEATHER FLIGHT FT INDIANTOWN GAP ANNVILLE PA 17003-5002	1
204 WEATHER FLIGHT MCQUIRE AFB NJ 08641-6004	1
207 WEATHER FLIGHT 3912 W MINNESOTA ST INDIANAPOLIS IN 46241-4064	1
208 WEATHER FLIGHT 206 AIRPORT DRIVE ST PAUL MN 55107-4098	1

209 WEATHER FLIGHT 2210 W 35TH ST BLDG 9 RM 119 AUSTIN TX 78703-1222 1
 210 WEATHER FLIGHT 1280 SOUTH TOWER DRIVE ONTARIO ANG CA 91761-7627 1
 COMNAVOCEANCOM CODE N312 STENNIS SPACE CTR MS 39529-5000 1
 COMNAVOCEANCOM CODE N332 STENNIS SPACE CTR MS 39529-5001 1
 NAVOCEANO CODE N25131 ATTN BERNIE RAU BLDG 8100 RM 203D STENNIS SPACE CTR MS 39522-5001 1
 NAVOCEANO CODE 9220 STENNIS SPACE CTR MS 39529-5001 1
 NAVOCEANO CODE N2513 1002 BALCH BLVD STENNIS SPACE CTR MS 39522-5001 1
 FNOC LIBRARIAN FLENUMOCEANEN MONTEREY CA 93943-5005 1
 MAURY OCEANOGRAPHIC LIBRARY NAVAL OCEANOGRAPHY OFFICE N4312 BLDG 1003 STENNIS SPACE CTR MS 39522-5001 1
 NAVAL RESEARCH LABORATORY MONTEREY CA 93943-5006 1
 NAVAL RESEARCH LABORATORY CODE 4323 WASHINGTON DC 20375 1
 NAVAL RESEARCH LABORATORY CODE 4180 WASHINGTON DC 20375 1
 NAVAL POSTGRADUATE SCHOOL CHMN DEPT OF METEOROLOGY CODE 63 MONTEREY CA 93943-5000 1
 NAVAL EASTERN OCEANOGRAPHY CTR (CLIM SECTION) U117 MCCADY BLDG NORFOLK NAS NORFOLK VA 23511-5000 1
 NAVAL WESTERN OCEANOGRAPHY CTR BOX 113 ATTN TECH LIBRARY PEARL HARBOR HI 96860-7000 1
 NAVAL POLAR OCEANOGRAPHY CTR 4301 SUTLAND ROAD FOB #4 WASHINGTON DC 20395-5108 1
 NAVAL EUROPEAN METEOROLOGY AND OCEANOGRAPHY CTR PSC 819 BOX 31 FPO AE 09645-3200 1
 NAVOCEANCOMDET FEDERAL BUILDING ASHEVILLE NC 28801-2696 1
 NAVOCEANCOMDET PATUXENT RIVER NAS MD 20670-5103 1
 NAVOCEANCOMFAC NAS NORTH ISLAND SAN DIEGO CA 92135-5130 1
 NAVAL AIR WARFARE CENTER WEAPONS DIVISION GEOPHYSICAL SCIENCES BRANCH CODE 3254 PT MUGU CA 93042-5001 1
 WSO H & HS MARINE STATION WEA MCAS TUSTIN CA 92710-5000 1
 ARMY TRAINING AND DOCTRINE COMMAND ATDO-W (ATTN SWO) FT MONROE VA 23651-5000 1
 75TH RGR (ATTN SWO) FT BENNING GA 31905-5000 1
 CDR USASOC ATTN AQIN-ST FT BRAGG NC 28307-5200 1
 JSOC WEATHER PO BOX 70239 FT BRAGG NC 28307-5000 1
 ARMED FORCES MEDICAL INTEL CTR INFO SVCS DIV BLDG 1607 FT DETRICK FREDERICK MD 21702-5004 1
 ARMY RESEARCH LAB BATTLEFIELD ENVIRONMENT DIR ATTN AMSRL-BE-W WHITE SANDS MISSILE RANGE NM 88002-5501 1
 USA TECOM ATTN AMSTE-TC-AA WHITE SANDS MISSILE RANGE NM 88002-5504 1
 NATL RANGE DIRECTORATE METEOROLOGICAL BRANCH ATTN STEWS-NE-DA-F WHITE SANDS MISSILE RANGE NM 88002-5504 1
 USA TECOM ATTN AMSTE-TC-AM CAB ABERDEEN PROVING GROUND MD 21005-5001 1
 US ARMY REDSTONE TECHNICAL TEST CTR ATTN STERT-TE-F-MT REDSTONE ARSENAL AL 35898-8052 1
 USA TECOM ATTN AMSTE-TC-AMBE) C O NVESD FT BELVOIR VA 22060-5677 1
 USA TECOM ATTN AMSEL-RD-NV-VMD (MET) FT BELVOIR VA 22060-5677 1
 DIRECTOR USA-CETEC ATTN GL-AE FORT BELVOIR VA 22060-5546 1
 US ARMY INTEL CTR AND FT HUACHUCA WEATHER SUPPORT TEAM ATTN ATZS-CDI-W FT HUACHUCA AZ 85613-6000 1
 PL TSMR RESEARCH LIBRARY HANSCOM AFB MA 01731-5000 1
 ROME LAB TECH LIB FL2810 CDR W STE 262 RL SUL DOC LIB 26 ELECTRONICS PARKWAY BLDG 106 GRIFFISS AFB NY 13441-4514 1
 TECHNICAL LIBRARY DUGWAY PROVING GROUND DUGWAY UT 84022-5000 1
 NOAA CENTRAL LIBRARY 1315 EAST-WEST HIGHWAY STE 2000 SILVER SPRING MD 20910 1
 NOAA MASC LIBRARY MC5 325 BROADWAY BOULDER CO 80303-3328 1
 NOAA NESDIS ATTN NANCY EVERSON E RA22 WORLD WEATHER BLDG RM 703 WASHINGTON DC 20233 1
 NGDC NOAA ATTN: AF LIAISON OFFICER MAIL CODE E GC2 325 BROADWAY BOULDER CO 80333-3328 1
 NWS W OSD BLDG SSM C-2 EAST-WEST HWY SILVER SPRING MD 20910 1
 NWS W OM21 1325 EAST-WEST HIGHWAY RM 13208 SILVER SPRING MD 20910 1
 NIST PUBS PRODUCTION RM A635 ADMIN BLDG GAITHERSBURG MD 20899 1
 NCDC LIBRARY FEDERAL BUILDING ASHEVILLE NC 28801-2733 1
 CAPE CANAVERAL FORECAST FACILITY ROCC BLDG 81900 CAPE CANAVERAL AFS FL 32925-6537 1
 DOBBINS BASE WEATHER BLDG 737 RM 113 1477 MINOSA DR DOBBINS AFB GA 30069-4821 1
 DET 3 DOW 1900 EAST FLAMINGO STE 266 PO BOX 19070 LAS VEGAS NV 89119-5116 1
 WESTOVER BASE WEATHER STATION BLDG 7091 RM 123 WESTOVER AFB MA 01022-5000 1
 WEATHER READINESS TRAINING CENTER (WRTC) PO BOX 465 RTE 1 CAMP BLANDING STARKE FL 32091-9703 1
 193 SOG DOW BLDG 19-101 RM 108 AASF #1 INDIANTOWN GAP ANNAPOLIS PA 17003-5005 1
 USAFA DFP 2354 FAIRCHILD DR STE 2A6 USAF ACADEMY CO 80840-6254 1
 USAFA DEPT OF ECONOMICS & GEOGRAPHY COLORADO SPRINGS CO 80840-5701 1
 USAFA CINOSW AIR FIELD DR BLDG 9206 USAF ACADEMY CO 80840-5000 1
 1CC AZSB-GTFD AH-64CSM-ATTAC FT CAMPBELL KY 42223-5000 1
 HQ 5TH US ARMY AFKB-OP (SWO) FT SAM HOUSTON TX 78234-7001 1
 USCINCPAC (J37) BOX 13 CAMP HM SMITH HI 96861-5025 1
 DTIC-FDAC CAMERON STATION ALEXANDRIA VA 22304-6145 1
 AUL LSE BLDG 1405 600 CHENNAULT CIRCLE MAXWELL AFB AL 36112-6424 1