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The purpose of this primer is to provide basic instruction to military personnel in the use of the SIGMA message service designed for use in the Military Message Experiment, ~~at CINCPAC, Camp Smith, Oahu.~~ By following the instructions presented in this primer, military personnel without previous computer or terminal experience may easily and quickly become familiar with MME-SIGMA and its use.

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The Military Message Experiment

SIGMA Primer

Chloe Holg

USC/Information Sciences Institute

November 1977

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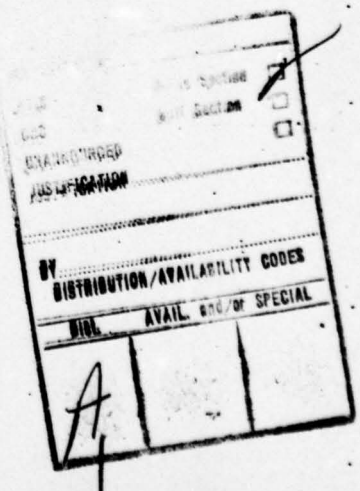
Views and conclusions contained in this manual are those of the author.

FOREWORD

This is the first of a series of primers for MME-SIGMA. It is intended for use in conjunction with the tutorial function MME-SIGMA provides.

The designers and implementers of MME-SIGMA, along with Chloe Holg, are grateful for the significant support provided by those responsible for review of this document, in particular David G. Miller of The MITRE Corporation.



1. INTRODUCTION

The purpose of this primer is to provide basic instruction to military personnel in the use of MME-SIGMA. By following the instructions presented in this primer, military personnel without previous computer or terminal experience may easily and quickly become familiar with the capabilities of MME-SIGMA and be able to use them effectively. While other more detailed forms of documentation are available for MME-SIGMA, the intent of this document is to make basic information available in simple terms.

In Section 2 we will give you a brief overview of the SIGMA Service and the MME terminal and tell you about the kinds of things with which you will be working. We want to make you as familiar as possible with the language associated with SIGMA, so we'll show words we particularly want you to pay attention to underlined. In this document we will show MME-SIGMA instructions in *italics*, and in the examples and scenarios we'll also show input that you type in *italics*.

In Section 3 we'll describe the terminal, then we'll tell and show you how the screen (or display) looks and how the terminal keyboard works.

In Section 4 we show you how to *log on* and tell you about the message files associated with your use of SIGMA. We'll show you how to give instructions to SIGMA and tell you about the different kinds of instructions that are available. Since it is not our intention to cover every instruction available in SIGMA, we have provided a summary of instructions used with each of the four objects (messages, message files, text items, and selectors) in the appropriate section.

In Section 4 we show you how to *log on* and tell you about the message files associated with your use of SIGMA. We'll show you how to give instructions to SIGMA and tell you about the different kinds of instructions that are available. Since it is not our intention to cover every instruction available in SIGMA, we have provided a summary of instructions used with each of the four objects (messages, message files, text items, and selectors) in the appropriate section.

Once you are logged on, the only way to terminate your use of MME-SIGMA is to *log off*, and we'll show you how in this section.

In Section 5 we'll show you how to deal with messages, and in Section 6 we'll tell you about the message files SIGMA has created for your use and how to create and maintain other message files.

Sections 7 and 8 describe text item and selector objects and include a summary of the MME-SIGMA instructions used with them.

In the last section we give you an outline of the SIGMA Service Reference Manual and tell you about the SIGMA On-line Tutorial and how to use it.

Where appropriate and useful, we will briefly review a section before moving on to the next section. As a novice user of MME-SIGMA, you will be mainly concerned with handling messages and message files, and we have placed special emphasis on the sections covering these objects.

This is the first issue of the MME-SIGMA Service Primer; as significant changes are made, updated issues will be made available for distribution.

Welcome aboard to MME-SIGMA!

2. The MME-SIGMA Service

The MME-SIGMA Message Service is a computer message processing service developed at the USC/Information Sciences Institute for use in a test of automated military message processing.

SIGMA was designed to provide the most efficient and useful message service possible and at the same time provide ease of operation to its users, military personnel. Procedures are completely automated from message composition through message receipt. SIGMA supports three forms of communication: (1) formal AUTODIN record messages (via LDMX), (2) internal record messages (Memos) and (3) informal messages (Notes) that are unofficial and not permanently recorded.

SIGMA makes available to the user an almost exact electronic reproduction of the standard AUTODIN message form and adds, in some instances, generality and flexibility. Although MME-SIGMA is completely electronic, users may obtain printed copies of any information stored within MME-SIGMA at any time.

Remember, throughout this primer we will emphasize significant words associated with use of MME-SIGMA by underlining them, and show MME-SIGMA instructions and user input in *italics*. We will describe instructions in detail in the appropriate sections of this primer.

The MME-SIGMA Service runs on the MME Terminal, a specially designed device to support the SIGMA Message Service. The terminal display screen can be split into several "windows" so that the user has available status information that is updated automatically, electronically provided

the user has available status information that is updated automatically, electronically provided

"forms" to fill out, both to log on and give instructions to SIGMA, and a "work space" where messages are drafted or commented upon. Here, again, electronic message "forms" are provided for the user to "fill out" and "reference space" is available where the user has the opportunity to *view* other material without disturbing the work he is doing in the "work space".

The terminal keyboard is also split into sections that give the user the ability to perform a function or issue an instruction by merely pressing a key, or by typing the instruction, using the standard keyboard keys.

SIGMA provides a message filing system similar in concept to a conventional filing cabinet; it gives the user freedom to create and maintain his message files in the manner most useful to his task.

SIGMA supports four levels of security: Unclassified, Confidential, Secret, and Top Secret. A user may select the security level of messages he wants to see and MME-SIGMA will display only those messages at the selected security level and below.

There are four kinds of objects (or things) users of MME-SIGMA can work with:

1. Messages
2. Message Files
3. Text Items
4. Selectors.

Objects are "open" when you are working on them and are "closed" (a) automatically when you

work with another object of the same type or (b) when you issue the *Finish* instruction to close the object. You may open or work on one of each type of object concurrently, i.e., you may have a file open, and also have a message open by displaying it, and also have a text object open because you are working on it. You may not have two of the same type of object open at the same time. If you have one object open and you ask to open another object of the same kind, MME-SIGMA automatically closes the first object for you and opens the second object. As an additional safeguard against accidentally losing material which you have been working on and have not closed, MME-SIGMA automatically closes any open objects for you when you *log off*.

The user operates on an object (tells MME-SIGMA what to do) by issuing instructions. This can be done in two ways: (1) by pressing a function key, or (2) by moving the cursor (the flashing underline) to the Instruction Line and typing in the instruction. Whenever MME-SIGMA does not understand what it is being asked to do, it will either print out some information about the problem in the Feedback Line at the top of the screen, or it will "beep" to indicate that something is wrong.

Now, a review of this section: MME-SIGMA is a computer message processing service that runs on the MME terminal. The terminal has a special display screen and keyboard. A user issues instructions to SIGMA by either pressing a function key or by typing standard keyboard keys. There are four levels of security: Unclassified, Confidential, Secret, and Top Secret; and four kinds of objects the user works with: messages, message files, text items, and selectors.

In the next section we will describe the MME terminal.

3. The MME Terminal

A terminal is a device that allows a person to interact directly with a computer. The MME terminal is a special device designed solely to run MME-SIGMA. It has a particular kind of display screen and a particular kind of keyboard; MME-SIGMA cannot be run on any other kind of terminal.

3.1 The Terminal Screen

The terminal screen (or display) has three "windows". The first window is located at the top of the screen and is made up of four "lines": the Alert Line, Status Line, Feedback Line, and Instruction Line.

1. The Alert Line – has changing information on it, including the word SIGMA followed by a version number, MME-SIGMA's load average (a figure indicating how many people are using MME-SIGMA), the day of the week, the date, local time and Zulu time. Whenever a new message arrives MME-SIGMA will notify you by a message in the Alert line. The Alert Line always begins with the word "SIGMA", and this is what it looks like.

SIGMA 1.7 | LdAv=1.8 | THU 1-DEC-77 0835 HST (011835Z DEC 77)

2. The Status Line – shows the maximum security level of the terminal before you *log on*. After you *log on* the maximum security level of the terminal will change to your maximum security level unless your *log on* maximum security level is higher than that of the terminal. Simply, you may not log on at a higher maximum security level than that of the terminal on which you are working.

The Status Line prints your name and security level as you *log on* and the security level and name of any objects you have open. The Status Line always begins with the name and security level of the logged-on user. We already have an example of the Alert Line and now we'll add the Status Line to show you what it looks like:

```
SIGMA 1.7 | LdAv=1.8 | THU 1-DEC-77 0835 HST (011835Z DEC 77)
J301[T]
```

3. The Feedback Line – is the place where MME-SIGMA tells you what it is doing via a variety of messages. For instance, when you *log on* SIGMA will give you feedback that your *log on* is proceeding; or if you issue an instruction you will get feedback that your instruction is being processed or that MME-SIGMA does not understand your instruction or you are trying to do an operation that is out of sequence. If MME-SIGMA doesn't understand your instruction, a message will be printed in the Feedback Line with a suggestion that you use the *Prompt* control key for help.

If MME-SIGMA requires confirmation and/or acknowledgment of an instruction, the Feedback Line is where MME-SIGMA asks you to do this. Instructions require confirmation generally to give new users the opportunity to "doublecheck" the instruction before it is *executed*. Some

instructions require acknowledgment for security operations. MME-SIGMA is constantly making security checks such as monitoring the security level of the contents of the screen, or checking to make sure that higher classified information is not mistakenly placed into a lower classified object.

The Feedback Line always begins with two "stars" (**).

```
SIGMA 1.7 | LdAv=1.8 | THU 1-DEC-77 0835 HST (011835Z DEC 77)
J301[T]
**
```

4. The Instruction Line – is the space provided for you to type instructions to SIGMA. In order to type an instruction the cursor must be on the Instruction Line. If the cursor is in any other part of the display, use the *Up Window* key as many times as necessary to move it to the Instruction line. Anything you type will appear to the left of the cursor. The Instruction Line always begins with two underlined bell symbols (ΩΩ); all four lines of the first "window" of the display screen look like this:

```
SIGMA 1.7 | LdAv=1.8 | THU 1-DEC-77 0835 HST (011835Z DEC 77)
J301[T]
**
ΩΩ
```

This is how the first "window" might look during a session with SIGMA (user input is shown in *italics*).

```
SIGMA 1.7 | LdAv=1.8 | THU 1-DEC-77 0835 HST (011835Z DEC 77)
J301[T] <F|S>PENDING
**Your instruction is incomplete. Use PROMPT for more information.
ΩΩget file
```

What happened here is the user neglected to tell MME-SIGMA which file to *get* and MME-SIGMA told him that his instruction was incomplete and also what to do to get help.

The rest of the terminal screen is divided into working space and (when you require it to reference other material) viewing space. The working space area is called the display window. The display window is where you can *display* a file or a message, draft a message, or *comment* on a message using terminal keys. (Remember, terminal keys are used to type instructions.) A part or all of the display window may be used as viewing space, where material can be placed for reference.

The viewing space is called the view window. To distinguish the contents of the display window from the view window, material appearing in the view window is shown on the screen in half-intensity. You cannot edit anything in the view window, since material you have placed there is for reference purposes.

Typically, the display screen with all three "windows" being used to *display* a file in the display window and *view* a message in the view window would look like this:

2

SIGMA 1.7 | LdAv= 1.8 | THU 1-DEC-77 1306-HST (012306Z DEC 77)
J301[T] <F|S>PENDING
**
00

1 P UU Auto 010830Z NOV 76 From: FLEWEACEN PEARL HARBOR HI
Incoming Act: J3
Subject: WWPN PHNC 010830
2 R UU Auto 012311Z NOV 76 From: CINCPACFLT MAKALAPA HI
Incoming Cog: J4
Subject: PHILIPPINE TARGET RANGES
3 O UU Auto 010650Z NOV 76 From: 3AD ANDERSON AFB GU/DOTO
Incoming Cog: J3
Subject: OVERFLIGHT/LANDING DIPLOMATIC CLEARANCE KC-135

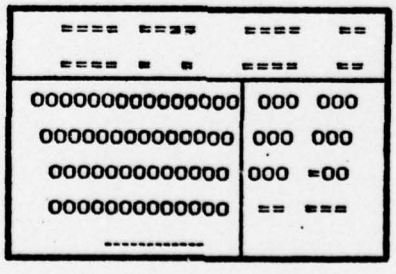
Ref Id: SEQ 2097326
Header: UNCLASSIFIED [Autodin - Transmitted]
From: FLEWEACEN PEARL HARBOR HI
DTG: 010830Z NOV 76
To: AIG ONE FOUR ZERO
Action: J3 DDO ROTHENBERG HOLG
Internal: TENEX J4 DDO J001A J38 ROTHENBERG HOLG
Precedence: P(PRIORITY)

Any material placed in the view window may be "erased" by pressing the *Clear View* function key.

On the panel directly to the right of the terminal screen are lights labeled to match the four security classifications (Top Secret, Secret, Confidential, Unclassified), corresponding to the highest level of security classification of information present on the screen. So, if you were working with a message file with a Secret security classification level, the Secret light would be illuminated.

3.2 The Terminal Keyboard

The keyboard has two kinds of keys: Function keys and Terminal keys. In the following representation of the keyboard Function keys are shown as = and Terminal keys are shown as o. The dashed line below the terminal keys (o) represents the space bar.



3.2.1 Function Keys

Function keys are exactly that -- keys to perform a particular function.

Most function keys are used with terminal keys. If the user just presses the *Delete* instruction key without specifying exactly what to delete, SIGMA will delete the current entry. The user must move the cursor to an entry in an open file, mark the entry by pressing the *Here* terminal key, then press the *Delete* key. MME-SIGMA will delete the marked entry. Generally, issuing an instruction using a function key does not require confirmation or acknowledgment from the user; however, if confirmation or acknowledgment is required, MME-SIGMA will prompt for it with a message in the Feedback Line. You would then confirm the instruction by pressing the same function key again. Acknowledgment would require pressing either the Yes or No acknowledgment key.

Whenever a Function key is pressed the cursor momentarily disappears from the display, which means that MME-SIGMA has gone off to perform the function requested. When the cursor reappears on the screen, MME-SIGMA is ready to accept and process another instruction. If you try to issue another instruction before the cursor reappears on the screen MME-SIGMA will tell you it is not ready to accept another instruction by "beeping".

Function keys are divided into three groups: Instruction keys, Acknowledgment keys, and Control keys. Some of the keys are color-coded.

1. Instruction keys

MME-SIGMA instruction keys are used to perform an instruction instead of actually typing the instruction. Instruction keys seldom require confirmation, however; if confirmation or acknowledgment is required, MME-SIGMA will print a request for it in the Feedback Line, and you would confirm by pressing the same instruction key, or acknowledge by pressing either the Yes or No acknowledgment key. Most of the instruction keys have two functions each, depending on whether they are shifted or not, just as though you were typing in upper and lower case on a typewriter. These keys are located in the upper part of the keyboard and are labeled with the instruction name.

2. Acknowledgment keys

Acknowledgment keys are labeled Yes and No. They are used when an instruction requires acknowledgment.

3. Control Keys

MME-SIGMA has six control keys; the *Clear View* key is located in the third row, the *Expand*, *Prompt*, *Help*, and *Cancel* keys are located in the fourth row of keys on the right side of the keyboard. The *Clear View*, *Expand*, *Prompt*, *Help*, and *Cancel* keys are blue; the *Execute* is larger than the other five control keys and is black. Pressing these Control keys tells SIGMA:

Clear View	-- Clear the View window.
Execute	-- My instruction is complete. Confirm my instruction
Expand	-- Fill in the parts of the instruction I left out.
Prompt	-- Tell me what to type next.
Help	-- I need more information.
Cancel	-- Ignore my instruction.

As a new user of MME-SIGMA you are required to confirm each typed instruction, and you do so by pressing the *Execute* key a second time after MME-SIGMA has redisplayed your instruction and asked you to confirm it. At times, for security reasons, you will be required to *Acknowledge* acts MME-SIGMA is about to perform and MME-SIGMA will give you a self-explanatory prompt, at which time you must press the appropriate *Acknowledgment* key (Yes or No).

3.2.2 Terminal Keys

Terminal keys are non-color-coded and are used for cursor movement and editing. The standard keyboard alphanumeric keys are, quite naturally, used for typing instructions and input. To the right of the standard keyboard are terminal keys to do the following:

Left Arrow - Moves the cursor to the left one character or to the next "enterable" character location.

Right Arrow - Moves the cursor to the right one character or to the next "enterable" character location.

Up Arrow - Moves the cursor up to the previous line.

Down Arrow - Moves the cursor down to the next line.

Word Right - Moves the cursor one word to the right.

Word Right (shifted) - Deletes one word to the right of the cursor.

Word Left - Moves the cursor one word to the left.

Word Left (shifted) - Deletes one word to the left of the cursor.

Back - Moves the cursor to the beginning of the current line; if the cursor is at the beginning, it moves to the end of the previous line.

Back (shifted) - Deletes the contents of the line to the left of the cursor; if the cursor is at the beginning of the line, it moves to the end of the previous line without deleting.

FWD - Moves the cursor to the end of the current line; if the cursor is at the end of a line, it moves to the beginning of the next line.

FWD (shifted) - Deletes the contents of the line at and to the right of the cursor; if the cursor is at the end of the line, it moves it to the beginning of the next line without deleting.

DEL left arrow - Deletes one character to the left of the cursor. When the cursor reaches the end of a line, it will jump up one line (at the right) and continue deleting. It will, however, not delete the last remaining character on a line. It can be used as a repeating key.

DEL - Deletes one character at the cursor. If this character is the only one on the line, the entire line is deleted.

Down Window - Moves the cursor down one window to most recent cursor position in that window.

Up Window - Moves the cursor up one window to most recent cursor position in that window.

Roll Down - Scrolls the contents of the window downward and operates only on the window in which the cursor resides.

Roll Up - Scrolls the contents of the window upward and operates only on the window in which the cursor resides.

Here - Places a marker at the location of the cursor. This key is used with instructions to mark a specific object.

The CNTL, ESC, and TAB keys:

CNTL - This key is used only with the Reset function key. (It causes funny symbols to print on the display if used with other keys.)

ESC - This key is a non-operational function key. It will cause MME-SIGMA to send a "beep".

TAB - This key has no function or purpose at this time and typing this key causes a funny symbol to print on the display.

Now, let's review this section:

A terminal allows a person to interact directly with a computer.

The MME terminal screen has three "windows" to (1) alert the user to changing information, provide status, provide feedback, and provide space to type instructions; (2) provide working space; and, (3) provide viewing space.

The keyboard has two kinds of keys: (1) function keys (perform a function or issue an instruction by pressing a key), and (2) terminal keys (move the cursor, type instructions and input).

4. Accessing SIGMA

We've described MME-SIGMA and the MME terminal and now you're ready to learn how to *log on* but before we show you this instruction you need to know the special protection mechanism provided for new users. It is simply this:

> New users of MME-SIGMA are required to confirm each typed instruction issued to MME-SIGMA.

That is, when you type an instruction on the Instruction Line and press the *Execute* key, MME-SIGMA will redisplay your instruction with abbreviated words expanded and spelling errors corrected and ask you to confirm it. You press the *Execute* key again and MME-SIGMA will tell you it is processing your instruction.

Generally, given a reasonable amount of information, MME-SIGMA can figure out your instruction and then redisplay it for confirmation; however, if your instruction is not reasonably clear, MME-SIGMA will tell you so by either printing out a comment in the Feedback Line or by 'beeping' at you. You can then correct your instruction using the terminal editing keys or press the *Cancel* key and type your instruction again. If you are not sure of the form of the instruction you are giving, just press the *Prompt* key and MME-SIGMA will guide you with appropriate information.

As you become more experienced in using MME-SIGMA, the need for this protection mechanism

lessens, and you may request that the SCO upgrade your user status so that MME-SIGMA will ask you to confirm instructions only where required by MME-SIGMA.

If a user attempts to run MME-SIGMA from a terminal at a classification above its maximum classification, or if a user attempts to log on when he is already logged on, or if a user enters a password incorrectly too many times during the *log on* process, SIGMA will lock the terminal. A locked terminal cannot be used. This is done for security reasons and if this happens the user should use the standard channels of communication provided for MME-SIGMA users to make the System Control Officer (SCO) aware of this situation at once.

4.1 Log On

The first step in the *log on* procedure is to make sure the terminal is turned on and the ONLINE key is in the down position. If the terminal is not turned on, put the On/Off toggle switch located in the back at the left rear bottom of the terminal into the On position and MME-SIGMA will automatically initialize and present the *log on* "form" on the display.

If, when the toggle switch is put into the On position, the display prints

This terminal is locked out. See SSO.

Again, the standard channels of communication provided for MME-SIGMA users should be used to make the System Security Officer (SSO) aware of this condition.

Generally, the terminal will be turned on and the following message will be displayed on the screen:

TERMINAL FREE - previous user has logged off.

Depress the CNTL key (located at the left side of the standard keyboard) and press the *Reset* function key (which is the first function key on the left in the topmost row). This is the only time you will use this combination of keys (CNTL/*Reset*) as they are the only combination of keys to "wake up" MME-SIGMA so that a user may *log on*. MME-SIGMA will print the following:

Restarting

"Restarting" is flashed on a white background until MME-SIGMA is activated. Then "Restarting" is erased and replaced by:

READY

SIGMA erases the READY notice and prints the following:

SIGMA Message Service initializing ....

SIGMA then erases the initializing notice and prints the standard log on form.

SIGMA 1.7 | LdAv= 3.0 | THU 1-DEC-77 1434-HST (020034Z DEC 77)
Not logged On[T] Please LOG ON ....
**Please enter the necessary information to logon.

Logon name:
Logon password:
Max Sec. Level:
[If required enter] Identity:
ID password:

To *log on* to MME-SIGMA you must fill in your *log on* name (which may be an office code), move the cursor down a line with the *Down Arrow* key and fill in your *log on* password, move the cursor down another line and type your requested maximum security level. If you are logging on as an office code you must also fill in your personal identity (name) and ID password, each time moving the cursor to the appropriate line. Entering a personal identity and ID password when logging on under an office code user name is required for purposes of "record keeping". All work performed by a user logged on as an office code is recorded under the identity of the user.

In the following examples of the log on instruction we will log on as an office code named J301 with a Top Secret security level. The identity of the user logging on as J301 will be Miller.

After you fill in the *log on* information, terminate the *log on* sequence by pressing the *Execute* key.

For security purposes, passwords typed during the *log on* sequence are never printed on the display. A typical *log on* sequence would look like this:

```
SIGMA 1.7 | LdAv= 3.0 | TUE 1-DEC-77 1634-HST (020034Z DEC 77)
Not logged On[T] Please LOG ON ....
**Please enter the necessary information to logon.

Logon name:J301
Logon password:
Max Sec. Level:t
[If required enter] Identity:miller
ID password:
```

After typing the log on information you press the *Execute* key and MME-SIGMA acknowledges your log on with a comment in the Feedback Line:

```
**Logon proceeding .....
```

Then MME-SIGMA erases the display and prints the following:

```
SIGMA 1.7 | LdAv=5.0 | TUE 1-DEC-77 1509-HST (020109Z DEC 77)
J301[T]
**

ΔΔ
```

Immediately after logging on, MME-SIGMA will show currently available News in the view window. Anything displayed in the view window is shown in half-intensity. Once you have read the News you may clear the view window by pressing the *Clear-View* instruction key.

You are now logged on and ready to begin to use MME-SIGMA, but before we show you how we will tell you about the message files SIGMA has created for your use.

> Permanently associated with each user of MME-SIGMA is a Pending file. The Pending file, whether it be your office code Pending file or your own personal message file (named Mypending), is a list of summaries of messages awaiting your attention. Pending and Mypending files are your "mailboxes"; you use the *Display File Pending* instruction to open your "mailbox" and the *Display Entry* instruction to read your mail.
>
> The Pending file is divided into two parts:
>
> Top Secret entries or messages
> ALL others

If you use the instruction *display file pending* without telling SIGMA the classification, MME-SIGMA automatically shows you the Secret, Confidential, and Unclassified file entries.

As an example, let's ask MME-SIGMA to display the Secret, Confidential, and Unclassified entries in the Pending file. Also, let's misspell the word 'pending'.

2

SIGMA 1.7 | LdAv= 2.2 | MON 14-NOV-77 1302-HST (142104Z NOV 77)
J301[T]
**

ΔΔ*display file panding s*

SIGMA will redisplay the instruction and ask for confirmation:

SIGMA 1.7 | LdAv= 2.2 | MON 14-NOV-77 1302-HST (142104Z NOV 77)
J301[T]
**Please confirm

ΔΔdisplay file pending ssss

Notice that MME-SIGMA corrected the misspelled word and expanded the single s to ssss. This is the normal classification form in MME-SIGMA. Now to complete the instruction confirmation must be given by pressing the *Execute* key.

```
SIGMA 1.7 | LdAv= 2.2 | MON 14-NOV-77 1302-HST (142104Z NOV 77)
J301[T]
**Your instruction is being processed.

^^display file pending ssss
```

then

```
SIGMA 1.7 | LdAv= 2.2 | MON 14-NOV-77 1302-HST (142104Z NOV 77)
J301[T] <F|S>PENDING
**

^^
```

SIGMA will display all of the entries in the Pending file except those with a Top Secret classification. If you have Top Secret entries in your Pending file and want to see them, then type the instruction like this:

^^display file pending t

and MME-SIGMA will display only the entries in the Pending file with a Top Secret classification.

Remember, if you want to see the messages sent to the office code that you are logged on under you ask for the Pending file. If you want to see messages sent to you personally when you are logged on as an office code, ask for the Mypending file.

When you log on as yourself rather than as an office code, the file names Pending and Mypending will access the same file. The file named Mypending is for you to see items addressed to you personally while you are logged on as an office code.

For the sake of example, suppose you are logged on as an office code and have the Pending file open. You zip through the work associated with the Pending file entries and now you decide to work with your own messages. You instruct MME-SIGMA to display your Mypending file. The abbreviated form of this instruction is *dis fi mypen s* but we'll show the the completely typed instruction in this example.

ΔΔ*display file mypending s*

SIGMA will redisplay your instruction and ask you to confirm it then automatically save the work you've done with the Pending file, close it, clear the screen and display your Mypending file – and change the information in the Status Line to show your Mypending file as the current open file. Now you can work with the messages that have been sent to your Mypending file.

The basic instructions for handling file entries are covered in Section 5.

4.2 Entering Instructions

There are two ways that you may enter an instruction on the terminal.

1. Key Instructions

Some instructions have a special instruction key at the top of the keyboard which will automatically enter the instruction for you when you press the key. These are function keys and we identified them in Section 3.2.1. Normally a new user is required to confirm and/or acknowledge instructions; however, only some function key instructions require confirmation and/or a security acknowledgment. When a function key is pressed, SIGMA will prompt the user for confirmation and/or acknowledgment if required. When required, the user confirms a key instruction by pressing the instruction key again, and when required, the user acknowledges a key instruction by pressing either the Yes or No *Acknowledgment* key.

2. Typed Instructions

All other instructions for which special instruction keys are not provided must be typed by the user in the Instruction Line and confirmed. The cursor is normally at the beginning of the Instruction Line; however, if the cursor is in another "window", use the Up Window terminal key as many times as necessary to position the cursor at the Instruction Line.

SIGMA accepts typed instructions in either upper or lower case, or a combination of both cases, so don't worry about the form in which you type your instructions. Also, since MME-SIGMA checks, corrects spelling, and redisplays your typed instruction before asking you to confirm it, mistyping an instruction is not a disaster.

If you have typed the instruction correctly, MME-SIGMA will tell you "Please Confirm", at which time you press the *Execute* control key. MME-SIGMA will then tell you "*Your instruction is being processed*".

If MME-SIGMA did not understand your instruction, a message will be printed in the Feedback Line, indicating that the instruction was not understood, or a "beep" will sound. You may use the editing keys to correct your instruction or you may simply press the *Cancel* control key and MME-SIGMA will erase your mistyped instruction and you may type your instruction to MME-SIGMA again. If you are unsure as to what you should type, press the *Prompt* key for help.

4.3 Log Off

When you have finished using SIGMA, type the *Log Off* instruction in the Instruction Line. Remember, if the cursor is not at the beginning of the Instruction Line, use the *Up Window* key to move it to the Instruction Line before you try to *log off*.

Suppose, while you were logged on, you were editing a message and had not used the *finish* instruction to close the message you were working on. When you type the *log off* instruction MME-SIGMA automatically checks the status of your work; if you have open files or messages, they will be closed and saved for you. (The *finish* instruction is described in Section 5.3.) An example of the *log off* procedure is:

```
SIGMA 1.7 | LdAv= 1.8 | TUE 1-DEC-77 1306-HST (012306Z DEC 77)
J301[T] <F|S>PENDING
**Please confirm.
ΔΔlog off

1 P UU Auto 010830Z NOV 76 From: FLEWEACEN PEARL HARBOR HI
       Incoming Act: J3
       Subject: WWPN PHNC 010830
2 R UU Auto 012311Z NOV 76 From: CINCPACFLT MAKALAPA HI
       Incoming Cog: J4
       Subject: PHILIPPINE TARGET RANGES
3 O UU Auto 010650Z NOV 76 From: 3AD ANDERSON AFB GU/DOTO
       Incoming Cog: J3
       Subject: OVERFLIGHT/LANDING DIPLOMATIC CLEARANCE KC-135
```

SIGMA has asked you to confirm your log off and you do so by pressing the *Execute* key. MME-SIGMA then continues your instruction to log off.

2

SIGMA 1.7 | LdAv= 1.8 | TUE 1-DEC-77 1306-HST (012306Z DEC 77)
J301[T] <F|S>PENDING
**Your instruction is being processed.
ΩΩ*log off*

1 P UU Auto 010830Z NOV 76 From: FLEWEACEN PEARL HARBOR HI
Incoming Act: J3
Subject: WWPN PHNC 010830
2 R UU Auto 012311Z NOV 76 From: CINCPACFLT MAKALAPA HI
Incoming Cog: J4
Subject: PHILIPPINE TARGET RANGES
3 O UU Auto 010650Z NOV 76 From: 3AD ANDERSON AFB GU/DOTO
Incoming Cog: J3
Subject: OVERFLIGHT/LANDING DIPLOMATIC CLEARANCE KC-135

Your open Pending file has been neatly closed, the display window is automatically cleared, and the following message is printed on the display.

TERMINAL FREE - previous user has logged off.

A review of this section:

A user logs on to MME-SIGMA by typing his log on name, password, and requested maximum security level in the log on "form" displayed on the screen.

The user asks MME-SIGMA to open the object with which he wishes to work by typing the *Display* instruction on the Instruction Line. Instructions are terminated by pressing the Execute key. MME-SIGMA asks the user to confirm his typed instruction, and this is done by pressing the *Execute* key a second time. Other instructions may be issued by either typing them or pressing the instruction key assigned to the desired instruction.

A user may have one of each type of object (message, message file, text item, or selector) open at the same time. Opening another object of a type already open causes MME-SIGMA to update and close the first object and open the second object.

A user concludes a session with MME-SIGMA by typing the *log off* instruction, which causes MME-SIGMA to update and close any objects left open when the *log off* instruction was typed.

5. Messages

Messages are structured forms of communication. MME-SIGMA supports three message types: (1) Formal AUTODIN record messages (via LDMX), (2) formal record messages for use in-house and (3) informal messages, called Notes, also for in-house use. Appropriate "electronic" forms are provided for each type. Only AUTODIN messages will be accepted by LDMX for AUTODIN; Memos and Notes will not. The basic differences between Memos and Notes are 1) format, and 2) Memos are stored (or archived); no formal record is made of Notes.

For formal record messages for, or received from, AUTODIN (via LDMX) SIGMA provides an almost exact automated standard AUTODIN message form. As with the conventional outgoing AUTODIN message form, certain fields or blocks are preprinted. Each field or block size expands or contracts automatically to accommodate the information required in the message; these fields can be edited to correct errors and/or add information. MME-SIGMA automatically translates the message preparation form to the proper message transmission form when the message is *released*.

For formal and informal in-house messages (Memoranda and Informal Notes) MME-SIGMA provides a message form similar in type to the form provided for formal AUTODIN record messages but with fields or blocks appropriate to the message type.

A message may be sent directly to you, or forwarded to you for information, or assigned to you for *Action*. Or you may *forward* a message you received directly to another user or users for information; or *file* it in a common message file (for example, a Readboard) that may be accessed by other users for information, or assign a message to another user for *Action*.

A draft message may be prepared by a user on-line, using the standard message formats and text processing features. Draft messages can be made available simultaneously to other users for purposes of review (or chopping) prior to transmittal and through the same automated service, reviewers may approve, disapprove, comment upon, or edit the draft message and return it to the drafter and/or send it to the releaser. Upon release, outgoing messages are delivered electronically to the AUTODIN system for further dispersal and comeback copies are automatically sent to the internal distribution list.

5.1 Basic Instructions for Messages

When you *log on* and issue instructions to *display* the Pending or Mypending file, another user's file or a Readboard file you will want to *view* or *display* messages. You may want to *comment* on a message, or you may want to *print* a message. Perhaps you'll want to *forward* a message to another user, or assign *action* to one or more messages.

Other things you may do with messages are *file* them, or *find* a specific message, or *delete* one or more messages, and perhaps *restore* a previously deleted message.

You can do all of these operations with MME-SIGMA instructions. For the sake of example we'll assume you are logged on as an office code and issue the *display* instruction for the Pending file associated with the office code to see file entries at the Secret and below classifications.

2

SIGMA 1.7 | LdAv= 2.2 | MON 14-NOV-77 1302-HST (142104Z NOV 77)
J301[T]
**

ΔΔ*display file pending s*

SIGMA will redisplay the instruction and ask for confirmation:

SIGMA 1.7 | LdAv= 2.2 | MON 14-NOV-77 1302-HST (142104Z NOV 77)
J301[T]
**Please confirm

ΔΔdisplay file pending ssss

Now to complete the instruction confirmation must be given by pressing the *Execute* key.

SIGMA 1.7 | LdAv= 2.2 | MON 14-NOV-77 1302-HST (142104Z NOV 77)
J301[T]
**Your instruction is being processed.

ΔΔdisplay file pending ssss

then

SIGMA 1.7 | Pending:1 | LdAv= 2.2 | MON 14-NOV-77 1302-HST (142104Z NOV 77)
J301[T] <F|S>PENDING
**

ΔΔ

File: PENDING Security: SSSS Length: 6
1 R UU Auto 111111Z OCT 77 From: COMDT DLIEL LACKLAND AFB TX//ATEL-E
Incoming Cog: J4
Subject: ADMINISTRATION AND CONTROL OF ENGLISH COMPREHENSION
2 O UU Auto 011556Z NOV 77 From: NAVCAMS LANT NORFOLK VA
Incoming Act: J3--J6
Subject: JCS COMM SUPP ROUTING INFO GUIDE CHANGE FIVE
3 R UU AUTO 011316Z NOV 77 From: CMC WASHINGTON DC
Incoming Cog: J4
Subject:
4 O UU Auto 010650Z NOV 77 From: USDAO JAKARTA
Incoming Cog: J4
Subject: OVERFLIGHT/LANDING DIPLOMATIC CLEARANCE
5 UU Memo RAVELING 121843Z NOV 77 From: RAVELING
Back Copy
Subject: REL OF INFO
6 R UU Auto 082113Z NOV 77 From: DIA WASH DC
Incoming Act: J2
Subject: REL OF INFO TO DOJ (U)

2

Notice that the Alert Line contained notification of a new message (Pending:1). New message entries, quite naturally, are added on to the bottom of the current list of message entries so the new message entry is the sixth (or last) entry in the file. The Alert Line will show Pending:1 until: 1) the next time you redisplay the Pending file or 2) a new message arrives during the time the Pending file is open. Then the Alert Line will say Pending:2.

Now, you have your "mailbox" open (your Pending file is *displayed*). MME-SIGMA cannot put a new file entry into your "mailbox" (Pending file) until you close it (using the *finish* instruction).

So, to see any new file entries that have arrived while the Pending file is open, you must first close the file, using the *finish* instruction, then open it again using the *display* instruction.

Remember, the *display file pending s* instruction displays file entries of the Secret security level and below; in order to *display* entries at the Top Secret security level you must include t in the instruction, e.g., *display file pending t.*

We will use this sequence of messages in the following examples; user input is shown in *italics.*

5.1.1 Displaying or Viewing a Message

You have a new message entry in the Pending file and you'd like to read it. You can do this in two ways: using the *view* key instruction, or using the *display* key instruction.

First, the *view* instruction. Anything shown in the view window cannot be edited.

> **Using the *down arrow* terminal key, move the cursor to entry number 6 in the displayed file entries. Press the *Here* terminal key to mark the entry, then press the *view* instruction key. MME-SIGMA will display and process your instruction, scroll up the contents of the display window and print the message in the view window of the display. Anything printed in the view window is shown in half-intensity to distinguish it from the contents shown in the display window.**
>
> **SIGMA 1.7 | Pending:1 | LdAv= 2.2 | MON 14-NOV-77 1302-HST (142104Z NOV 77)**
> **J301[T] <F|S>PENDING**
> ******
>
> **ΔΔ**

2

3 R UU AUTO 011316Z NOV 76 From: CMC WASHINGTON DC
Incoming Cog: J4
Subject:

4 O UU Auto 010650Z NOV 76 From: USDAO JAKARTA
Incoming Cog: J4
Subject: OVERFLIGHT/LANDING DIPLOMATIC CLEARANCE

5 UU Memo RAVELING 121843Z OCT 77 From: RAVELING
Back Copy
Subject: REL OF INFO

6 R UU Auto 082113Z OCT 76 From: DIA WASH DC
Incoming Act: J2
Subject: REL OF INFO TO DOJ (U)

Ref Id: SEQ 2097566
Header: UNCLASSIFIED [Autodin - Transmitted]
From: DIA WASH DC
DTG: 082113Z OCT 76
To: COMUSJAPAN YOKOTA AF JAPAN
CINCPAC HONOLULU HI
COMIPAC HONOLULU HI
Info: USDAO TOKYO JAPAN

Notice that only part of the message appeared in the view window. We need to scroll up the view window to see the rest of the message. If the *roll up* terminal key was pressed now, what would happen is the display window would scroll up because the cursor is still positioned at the sixth message entry in the display window. We need to move the cursor to the view window and do so by pressing the *down window* terminal key to move the cursor into the view window and then press the *roll up* terminal key as many times as necessary to see the entire message. The *roll down* terminal key will, of course, cause MME-SIGMA to scroll down the upper part of the message if you need to refer back to any part of it.

We've moved the cursor to the view window and use the *roll up* terminal key to see the rest of the message. Notice that the contents of the display window remain unchanged.

```
SIGMA 1.7 | Pending:1 | LdAv= 2.2 | MON 14-NOV-77 1302-HST (142104Z NOV 77)
J301[T] <F|S>PENDING
**

ΩΩ
```

V

3 R UU AUTO 011316Z NOV 76 From: CMC WASHINGTON DC
Incoming Cog: J4
Subject:

4 O UU Auto 010650Z NOV 76 From: USDAO JAKARTA
Incoming Cog: J4
Subject: OVERFLIGHT/LANDING DIPLOMATIC CLEARANCE

5 UU Memo RAVELING 121843Z OCT 77 From: RAVELING
Back Copy
Subject: REL OF INFO

6 R UU Auto 082113Z OCT 76 From: DIA WASH DC
Incoming Act: J2
Subject: REL OF INFO TO DOJ (U)

Info: USDAO TOKYO JAPAN
Action: J2 J381
Internal: TENEX J3 00-01-02 J003 J4 DDO PA J5 DAOP
Precedence: R(ROUTINE)
References: COMUSJAPAN MSG DTG 070341Z OCT 76.
Text: U N C L A S S I F I E D NOFORN WNINTEL 1226
FROM RCI-2
COMUSJAPAN FOR J2; CINCPAC FOR J233; COMIPAC FOR 005A
SUBJ: REL OF INFO TO GOJ (U)
REFS: COMUSJAPAN MSG DTG 070341Z OCT 76.
---END OF MESSAGE---

Now that you've read the message, press the *Clear View* terminal key. MME-SIGMA acknowledges your instruction in the Feedback Line, clears the screen, then reprints the display window with the list of message entries in the Pending file. The cursor is in the Instruction Line and you may issue another instruction.

The other way to see a message is to use the key *display* instruction. Move the cursor to file entry 6, press the *Here* terminal key, then press the *display* key. SIGMA tells you your instruction is being processed, removes the contents of the display window and shows as much of the message as will fit on the screen. Again, use the *down window* terminal key to move the cursor to the display window and scroll the message either up or down using the *roll up* or *roll down* terminal keys.

```
SIGMA 1.7 | Pending:1 | LdAv= 2.2 | MON 14-NOV-77 1302-HST (142104Z NOV 77)
J301[T] <M|U>SEQ 2097566 <F|S>PENDING
**

ΩΩ
```

2

Ref Id: SEQ 2097566
Header: UNCLASSIFIED [Autodin - Transmitted]
From: DIA WASH DC
DTG: 082113Z OCT 76
To: COMUSJAPAN YOKOTA AF JAPAN
CINCPAC HONOLULU HI
COMIPAC HONOLULU HI
Info: USDAO TOKYO JAPAN
Action: J2 J381
Internal: TENEX J3 00-01-02 J003 J4 DDO PA J5 DAOP
Precedence: R(ROUTINE)
References: COMUSJAPAN MSG DTG 070341Z OCT 76.
Text: U N C L A S S I F I E D NOFORN WNINTEL 1226
FROM RCI-2
COMUSJAPAN FOR J2; CINCPAC FOR J233; COMIPAC FOR 005A
SUBJ: REL OF INFO TO GOJ (U)
REFS: COMUSJAPAN MSG DTG 070341Z OCT 76.
---END OF MESSAGE---

Notice the Status Line. Now you have both a file and a message open. If you *displayed* another message, MME-SIGMA would automatically close the open message and *display* the new message. Generally you would *display* a message if you wanted to work with it. Suppose you completed your work with the displayed message and pressed the *finish* instruction key. MME-SIGMA would

acknowledge your instruction in the Feedback Line, close the message and erase the open message in the Status Line. The screen would be erased and the list of file entries would reappear in the display window.

If you want to keep the message open and switch the display window back to displaying the file use the *Show File* instruction key. The message will remain open until you use the *finish* instruction to close it, or you *log off*. Remember, when you *log off* MME-SIGMA neatly closed all of your open objects.

5.1.2 Forwarding a Message

Suppose once you have *viewed* a file entry you decide to *forward* a copy of it to another user named Holg. The MME-SIGMA instruction is:

ΔΔ*forward entry 6 holg*

The Feedback Line will ask for confirmation of the instruction; once you have pressed Execute the request for confirmation will be erased and replaced with:

2

TRUSTED JOB: Please acknowledge the processing of an UNCLASS file entry.

This is an instance of MME-SIGMA requiring acknowledgment of a security related act it is about to perform. Press the Yes Acknowledgment key. The message in the Feedback Line will be:

TRUSTED JOB: Acknowledgment recorded. Processing continuing.

A copy of the message was entered in Holg's Pending File and her name was added to the Internal Distribution List. MME-SIGMA then places the cursor at the file entry that was forwarded. In order to issue another instruction use the *up window* terminal key to move the cursor to the Instruction Line.

5.1.3 Printing a Message

Suppose, now, that you'd like to have a printed copy of a file entry – for instance, file entry number 6. This is the instruction you would use.

ΔΔ*print en 6*

Notice that only *en* was typed as part of the instruction. SIGMA expands and redisplays the instruction and asks for confirmation.

⁂Please Confirm.
ΔΔprint entry 6

This is another instruction requiring acknowledgment, and **MME-SIGMA prompts with this message in the Feedback Line:**

TRUSTED JOB: Please acknowledge the processing of an UNCLASS file entry.

Press the Yes Acknowledgment key. The message in the Feedback Line will be:

TRUSTED JOB: Acknowledgment recorded. Processing continuing.

Again, MME-SIGMA positions the cursor at the file entry that was printed. Use the *up window* terminal key to move it to the Instruction Line before issuing another instruction.

2

5.1.4 Assigning Action to a Message

Assigning *action* to a file entry is handled in MME-SIGMA much like *forwarding* a file entry. The difference is that the file entry is recorded in both the Pending file of the user to whom the *action* has been assigned and in your Action_Log (if you have one). The person to whom *action* on a file entry has been assigned has his name added to the Action: field; the person to whom a file entry has been *forwarded* has his name added to the Internal Distribution: field.

Let's assign *action* to file entry number 6.

```
**Please confirm
ΩΩaction entry 6 holg
```

SIGMA asks for confirmation; press *Execute*; MME-SIGMA asks for acknowledgment:

TRUSTED JOB: Please acknowledge the processing of an UNCLASS file entry.

Press the Yes Acknowledgment key. The message in the Feedback Line will be:

TRUSTED JOB: Acknowledgment recorded. Processing continuing.

Again, the cursor is positioned at the file entry to which *action* has been assigned and must be moved to the Instruction Line before another instruction is typed.

5.1.5 Filing a Message

Now that we've *viewed*, *printed*, *forwarded* and assigned *action* to file entry 6, let's *file* it. We will only *file* one file entry, but more than one file entry can be filed at the same time by typing the file entry numbers separated by a space or a comma, or a sequence of file entries separated by a dash (-), for example, 1,2,4-6. In order to *file* a file entry there must be an existing message file in which to *file* it and the message file in which it currently exists must be open. Before we *file* the file entry, let's *create* a message file. SIGMA accepts any name you choose for a message file that you *create* but if the file name is more than one word the words must be separated with an underscore (_). Also, the user must assign a security classification at the time the file is created.

ΩΩcreate file blue_frog s

SIGMA expands the instruction and asks for confirmation.

2

⁂Please confirm.

ΔΔcreate file blue_frog ssss

SIGMA tells you your instruction is being processed, clears both the Feedback and Instruction Lines and waits for you to issue another instruction. Now we have a message file named Blue_Frog and we'll *file* a copy of entry number 6.

⁂Please confirm.

ΔΔ*file entry 6 blue_frog*

MME-SIGMA asks for confirmation. Press *Execute*. MME-SIGMA processes your instruction and asks for acknowledgment.

TRUSTED JOB: Please acknowledge the processing of an UNCLASS file entry.

Press the Yes Acknowledgment key.

TRUSTED JOB: Acknowledgment recorded. Processing continuing.

MME-SIGMA has filed a copy of message from the Pending file into the file named Blue_Frog. *Now both the Pending file* and the Blue_Frog file each contain a file entry of the message. The cursor is returned to the Instruction Line and MME-SIGMA is ready for another instruction.

5.1.6 Deleting Messages

Now that we've filed message entry 6 we may want to *delete* it from the Pending file. Again, while we will *delete* only one file entry, more than one may be deleted at the same time. As with the *file* instruction, entry numbers must be separated with a space or a comma, and sequences of entries must be separated by a dash.

⁂Please confirm.

⌂⌂*delete entry 6*

SIGMA asks for confirmation. Press *Execute*; the instruction is processed and acknowledgment is required.

TRUSTED JOB: Please acknowledge the processing of an UNCLASS file entry.

2

Press the Yes Acknowledgment key.

TRUSTED JOB: Acknowledgment recorded. Processing continuing.

SIGMA has deleted the file entry and removed it from the message file currently being displayed.

The *move* instruction is a combination of filing and deleting a file entry in a single operation. Typing *move entry 6 blue_frog* files entry 6 in the blue_frog message file and deletes it from the Pending file.

5.1.7 Restoring Messages

Now we decide we really didn't want to *delete* that particular file entry and want to *restore* it to the Pending file. We can *restore deleted* objects only before the file is closed by using the *finish* instruction or we *log off*. Again, if we had *deleted* a list of entries (more than one) we could *restore* them by entry number, separated by a space or a comma, sequences separated by a dash.

⁂Please confirm.

ΩΩ*restore entry 6*

SIGMA asks for confirmation. We confirm by pressing the *Execute* control key. Again, MME-SIGMA requires acknowledgment.

TRUSTED JOB: Please acknowledge the processing of an UNCLASS file entry.

We acknowledge .. press the Yes Acknowledgment key.

TRUSTED JOB: Acknowledgment recorded. Processing continuing.

SIGMA *restores* the file entry to the Pending file.

5.2 Drafting a Message

Since you are a new user of MME-SIGMA we'll show you how to draft and *release* a Note. Notes

2

are informal and are never permanently recorded. They are simply an off-the-record kind of communication, something like an telephone conversation, except they are filed and remain accessible for about 30 days. You should *delete* the file entry from the message file if, when you *try to either view or display* it, MME-SIGMA tells you the Note is no longer available.

Let's draft a note with an Unclassified security level and put a copy of it in the Pending file. As you saw earlier when we *created* a new message file, the *create* instruction is used to begin or bring into being any new entity; therefore we have to tell MME-SIGMA what to *create*. So we tell MME-SIGMA we want to *create* a message of a particular kind (Note) with a particular security level (Unclassified).

In this example we will type the full instruction, which is *create message note u pending*. If we merely typed *cre m n u pend* MME-SIGMA would recognize and expand the instruction and redisplay it before asking for confirmation.

```
**Please confirm.

ΔΔcreate message note u pending
```

What we've done is asked MME-SIGMA to provide a note "form" to fill out. We need to confirm our instruction. We do so by pressing the *Execute* key, MME-SIGMA processes the instruction. This is what we see on the screen.

```
SIGMA 1.7 | LdAv= 2.5 | FRI 18-NOV-77 1616-HST (190016Z NOV 77)
J301[T] <M|U>J301 190014Z NOV 77 <F|S>PENDING
**

^^

Ref Id: J301 190014Z NOV 77
Header: UNCLASSIFIED [Note - Preparation]
From: J301
To:
CC:
Subject:
References:
Text:
---END OF MESSAGE---
```

Notice that the Status Line has changed to show that we are drafting an Unclassified message. The cursor is positioned at the Instruction Line. We move it using the *down arrow* terminal key to the To: line because MME-SIGMA has filled in the Ref Id:, the Header: and the From: lines. All that needs to be done is to move the cursor to the line we want to fill in and type the information. If we wanted to fill in the Text: field of the note before filling in the To: or Subject: lines we may do so. The cursor simply is moved wherever we want to type input. When we finish typing input in any field we merely move the cursor to the next field with either the *up arrow* or *down arrow* terminal keys, depending on the order of the fields we want to use.

2

We'll send a note to a user named Holg with a copy to Miller. We'll use the terminal keys for editing as we type the note. This is what it would look like.

Ref Id: J301 190014Z NOV 77
Header: UNCLASSIFIED [Note - Preparation]
From: J301
To: *holg*
CC: *miller*
Subject: *This is a demonstration*
References:
Text: *This is a demonstration of how to draft a note.*
---END OF MESSAGE---

We may type as much information as necessary in each of the fields since MME-SIGMA expands the space in each field to accommodate the amount of information typed there. Now that we've drafted the message we would like to *release* (or send) it. We don't have to worry about where the cursor is (it happens to be at the end of the sentence in the Text: field) because we press a key instruction to *release* the message. Notice that this is a shifted instruction key so we must press the shift key and the *release* key at the same time.

This is the message MME-SIGMA prints in the Feedback Line:

Release open message is being processed.

then, to give you an opportunity to check your note one more time before releasing it:

Please check precedence and local addressees and re-execute.

you check and all is OK. Re-execute the instruction by pressing the shift and *release* key and the Feedback Line tells you:

Release open message is being processed.

the note is released (sent) and the object (message) is closed. The Status Line is updated to show that the only open object is the Pending file.

In this section we showed you how to *display* your Pending file and how to *view* or *display* a file entry. We *forwarded*, *printed*, and assigned *action* to a file entry. We *created* a message file so that we could *file* a message, then we *deleted* and *restored* the message. We showed you how to *create* a note and how to *release* it.

In these examples we made a point of specifying the entry number to demonstrate the *view*, *forward*, *print*, assign for *action*, *file*, *delete*, and *restore* instruction. You can do all of these operations on a *displayed* message while the message is still open. If this is the case you don't need to specify an entry number as the instruction would automatically operate on the open message. Certainly, there are other instructions associated with messages and the following is a brief summary.

2

5.3 Summary: MME-SIGMA Message Instructions

ABORT = terminate without updating an open object.

> *Abort* is a typed instruction and requires confirmation. If changes are made to a displayed message and the *abort* instruction is used, the changes are eliminated and the message is restored to its original state, or to the point of the last *Finish* instruction. The display window is also cleared.

ACTION = assign action on a message to another user and make an entry in the Action_Log.

> *Action* is a typed instruction and requires confirmation. This instruction allows a user to assign or transfer action on a RECEIVED message and causes 1) an entry for the message to be delivered to the Pending file of the user to whom action has been assigned or transferred, 2) automatically causes an entry in the Action_Log to record the action assignment and 3) the name of person to whom *action* has been assigned appears in the Action: field of the message. The *Action* instruction may be used on an open message, on a message specified by its ID, on the NEXT or CURRENT message in the open file, on a message specified by its entry number, or on a message marked in the displayed file by the *Here* terminal key.

CHOP YES = approval and sign off on a message draft.

> *Chop Yes* is a key instruction and is used to approve and sign off the current message being reviewed.

CHOP NO = disapproval and no sign off on a message draft.

Chop No is a key instruction and is used to withhold approval and sign off of the current message being reviewed.

CLEAR VIEW = erase the view window.

Clear View is a control key. Pressing the *Clear View* key clears the view window and makes the view window area available to the display window.

COMMENT = comment on a field of a displayed message.

Comment is a typed instruction and requires confirmation from the user. This instruction lets a user attach a comment to a message field using the cursor and *Here* terminal key to mark the message field to which the comment is being attached. The user may mark the field and then issue the *comment* instruction or issue the *comment* instruction and then mark the field.. The user then presses the *Execute* terminal key and types the desired comment using any number of lines of text. If a comment already exists the new comment will appear below the existing comment. The comment is complete when the user moves the cursor to the Instruction Line and issues the *finish* instruction. Comments are Private (solely for the information of the person attaching the comment), unless an access specification is attached to the comment. An access specification may be the name of another user or the word Public.

COORDINATE = send a message out for chop to the people on the chop list.

2

Coordinate is a key instruction and is used in connection with Formal or AUTODIN message preparation. This instruction sends the displayed Formal or AUTODIN message in preparation simultaneously to the reviewers named on the chop list.

CREATE = create a new message and display the blank message form for editing.

Create is a typed instruction and requires confirmation. Using the *create* instruction the user is able to create a message using the blank message "form" that MME-SIGMA provides for the kind of message being created (AUTODIN, Memo, or Note). By typing the *create* instruction together with the object the user wants to create (message) and the type (Note) and classification and the name of the message file in which to save a copy of the Note, MME-SIGMA displays the appropriate message "form" on the display for the user to "fill out". If there is already an open message it is automatically *finished*, whether the existing open message is actually displayed or not.

DISPLAY = display the identified message for editing.

Display is both a key instruction and a typed instruction. When using *display* as a typed instruction the message identified by the Message ID; or by the entry number in an open file is displayed; confirmation by the user is required. Using *display* as a key instruction displays the message in an open file where the cursor is positioned; or the next or current message in the open file.

FILE = file a copy of the identified message into a file.

File is a typed instruction and requires confirmation by the user. A user may *file* the next or current message in another existing file; or an entry list of one or more messages where the entry numbers in the list are separated by commas, or, separated by a dash if the entry list is a sequence of messages. Example of typical entry list: 2,4,6,8-11.

FINISH = terminate the current message and update editing.

Finish is a key instruction and is used when the user wants to tell MME-SIGMA to save the changes that were made to a message, close the object and clear the screen. (This is also done automatically by MME-SIGMA when the user asks for another object of the same type.)

FORWARD = send a copy of a message to another user.

Forward is a typed instruction and requires confirmation by the user. This instruction permits a user to forward messages to other users. A for Info entry is placed in the Pending file of the user to whom the message is being forwarded, and his name (or title) is added to the Internal Distribution field shown with the message. In order to forward the next or current message, a message identified by its entry number, or a message marked with the *Here* key, the file containing the messages to be forwarded must be displayed.

PRINT = print message on the printer.

2

Print is a key instruction and is used to make printed copies of messages on the hardcopy printer. The *print entry* instruction key prints the file entry marked with the *Here* terminal key; the *print next* instruction key prints the next message. The *print view* instruction key prints the contents of the view window on the line printer; the *print display* instruction key prints the object being displayed on the line printer.

PUT = put the text object at the marked place in the display.

Put is both a key and typed instruction. Used as a key instruction it takes the text picked up with the last *Pick Up* key instruction and moves it to the place marked with the *Here* terminal key. When *put* is used as a typed instruction it places text identified by name at the spot marked by the *Here* terminal key.

RELEASE = release the current message for transmission.

Release is a typed instruction and requires confirmation from the user. Using this instruction causes SIGMA to send the displayed message, which must be an open message in preparation, to all addresses.

REPLY = create and display a reply to the current message.

Reply can be used as both a key and typed instruction. Using this instruction permits the user to respond to a received message with a return message. The default for the security level of the new message is the same as that of the received message to which the reply is being sent. Used as a typed instruction, it creates a new message for

editing and composition in reply to a specified message or to a message identified by its entry number. Used as a key instruction it creates a reply to a message marked in the displayed file with the *Here* terminal key, or to the next message in a displayed file.

SHOW-MESSAGE = redisplay the open message

Show-Message is a key instruction and is used to let the user get the open message back on the screen when he has displayed something else.

VIEW = put message in view window. Cannot be edited.

View is both a key and typed instruction. This instruction is used to place information in the view window of the display screen. The view window allows you to see file entries, messages or text objects without being able to edit them. Any material placed in the view window with the *view* instruction can be erased using the *Clear View* terminal key. Using *view* as a key instruction requires that the object to be placed in the view window be open and marked with the *Here* terminal key. Using *view* as a typed instruction requires that the file containing the file entry to be placed in the view window be open and the file entry number specified when the *view* instruction is typed. When used as a typed instruction, *view* requires confirmation.

6. Message Files

MME-SIGMA's message filing system is similar in concept to labeled and ordered folders in a drawer of a conventional filing cabinet. You may have any number of message files, and they may contain any number of entries.

Entries in message files, in fact, represent your messages; they are not the messages themselves, but merely summaries of them. An entry (or summary) in a message file contains information about the message that the entry represents. A typical entry in a message file would look like this.

1 P UU Auto 010830Z NOV 77 From: FLEWEACEN PEARL HARBOR HI
Incoming Act: J3
Subject: WWPN PHNC 010830

This is the 1st entry in the message file, the precedence is Priority and it is an UUnclassified message with the DTG (date-time-group) From: sender/location, the message is Incoming and assigned for Act: (action) to an office code (in this case, J3) on a particular Subject: (WWPN PHNC 010830).

Actual messages are stored centrally within the MME-SIGMA system and a copy "delivered" to your terminal when you use the cursor and *Here* key to mark the message file entry you wish to see and press the *Display* or *View* instruction key. Without using the *Here* terminal key to mark the entry,

the Display or View instruction keys will show you the current entry; shifted Display or shifted View instruction keys will show you the next entry.

For each user (a user may be either an office code or an individual) SIGMA provides a permanent message file named Pending. Messages sent to you (either an office code or an individual), *forwarded* to you for information or *action*, for review or *chop*, or comeback copies of messages which you have sent are automatically placed there.

SIGMA also provides a second permanent message file for messages directed to an individual who is logged on under an office code; this file is named Mypending; while similar to the Pending file, it is solely intended for the user's personal use when the user is logged on as an office code. For instance, if you log on as an office code named J301 and *identify* as Smith, you will see messages sent to J301 in the Pending file, and messages to Smith in the Mypending file. If you are logged on to MME-SIGMA as Smith you only have your Pending file; you can access it with either the Pending or Mypending file names.

Other message files that MME-SIGMA may provide are Action_Log and Readboards.

> **Whenever a user assigns *Action* to a message it is recorded in the Action_Log automatically as each new action assignment is made.**
>
> ***Readboards are simply shared message files and are used to make information available to many users without addressing them individually.***

Other message files may be created by you in whatever fashion you choose. You may, for

instance, create message files based on subject, or message files for action items, or information items, or classification.

The MME-SIGMA instruction for creating a file is *Create*. File names may contain multiple words; however, the words must be separated by an underscore (_). This is an example of how to *create* a message file; let's name it White_Knight and assign a Secret classification to the message file.

ΔΔ*create file white_knight s*

SIGMA expands the instruction and asks for confirmation.

**Please confirm.

ΔΔcreate file white_knight ssss

SIGMA tells you your instruction is being processed, clears both the Feedback and Instruction Lines and waits for you to issue another instruction. Now we have a message file named White_Knight.

You may have a number of message files that you've created and they are stored in a File Directory. If you wanted to look at the list of message files you have, you may do so using the *File Directory* instruction key. Note that this is a shifted instruction key. Using this instruction puts the contents of your File Directory in the View Window.

Again, entries in message files are simply "summaries" of the actual message; while entries in message files may be moved from one file to another, or deleted from a file, the messages themselves cannot, in fact, be deleted.

Message files you create and organize to suit your own needs may be named in any way you wish; however, files with multiword names must be separated with an underline, for example, Action_Confidential_Jul_77.

Access control to files is restricted by the security level of the file, one of the four security classifications; the entries in a message file may be of lower classification than the classification of the file, but may not be higher.

As you become more experienced in your use of MME-SIGMA you may wish to select a subset of entries by some specified criteria that you have defined within a message file and the *Augment* and *Restrict* instructions are available for your use. (The *Augment* and *Restrict* instructions are covered briefly in Section 6.1, and in greater detail in the SIGMA Message Service Reference Manual.)

6.1 Summary: MME-SIGMA Message File Instructions

ABORT = terminate without updating.

Abort is a typed instruction and requires confirmation. If changes are made to a

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displayed message file and the *abort* instruction is used, the changes are eliminated and the message file is restored to its original state, or to the point of the last *Finish* instruction. Using this instruction also causes MME-SIGMA to clear the display window.

AUGMENT = add to current file display by selector.

Augment is a typed instruction and requires confirmation. With the *augment* instruction the user may add an additional subset of file entries to those presently displayed. This instruction is used with a selector.

BACKUP = redisplay file to previous selection criteria.

Backup is both a key and typed instruction. When used as a typed instruction, *backup* requires confirmation from the user and can be either *Backup* (one) or *Backup All*. Using the *backup* instruction enables the user to establish a selection of file entries which occurred previously as the result of issuing a series of *Augment* and *Restrict* instructions. The *backup* instruction key displays the previous set of file entries. This instruction is useful to recover a previous display if the user has inadvertently asked for the addition or removal of too large a subset of file entries.

CLEAR VIEW = erase the view window.

Clear View is a terminal key. Pressing the *Clear View* terminal key causes the view window to be cleared, leaving the entire display window available to perform other work, such as editing.

COMMENT = comment on an entry in the displayed file.

Comment is a typed instruction and requires confirmation from the user. This instruction is used to attach a comment to a file entry using the cursor and the *Here* terminal key to mark the field to which the comment is being attached. The user may mark the field and then issue the *comment* instruction, or issue the *comment* instruction *and then mark the field.* The user then presses the *Execute* control key and types the desired comment, using any number of lines of text. If a *comment* already exists, the new comment will appear below the existing comment.

CREATE = create a new file.

Create is a typed instruction and requires confirmation from the user. This instruction is used to *create* message files in which to *file* message file entries. Names of *created* message files may contain multi-word names, but the words must be separated with an underscore (_). At the time of creation of a message file a security classification must be assigned.

DELETE = delete an entry from the displayed file, or delete a named file entirely.

Delete is both a key and typed instruction. Used as a typed instruction, *delete* requires confirmation from the user. This instruction is used to *delete* an existing message file and the entries in the file. If this instruction is issued accidentally, the file may be restored by using the *restore* instruction prior to *log off*. A *deleted* file is shown in the File Directory with an asterisk to the left of its name. If the file being deleted is

File Directory with an asterisk to the left of its name. If the file being deleted is displayed at the time the *delete file* instruction is issued, then the screen is erased; otherwise the screen remains unchanged.

DISPLAY = display the entries in a file.

Display is a typed instruction and requires confirmation from the user. This instruction places the contents of a message file in the display window where the user may further work with entries contained in the displayed message file. *Displaying* another message file automatically *finishes* the currently displayed message file and opens the new message file.

FILE = place the identified message into the named file.

File is a typed instruction and requires confirmation by the user. Entries may be filed from the displayed file when marked with the *Here* terminal key, or an entry list of more than one entry may be filed. Items in an entry list must be separated by a space or comma; a sequence of entries must be separated by a dash. Example of a typical entry list: 2,4,6,8-11.

FIND = find the specified entry and scroll the entries to the specified one.

Find is a typed instruction and requires confirmation from the user. This instruction is used to locate the next occurrence of a specified string of text following the *Here* marker, if any (if none, finds from the top of the file). This instruction works on any

displayed object. When used with a file, *find* with a specified string of text does not affect the designation of the entry marked *Current*. A string may be either a single word or a group of words, connected by punctuation or spaces, which must be enclosed by quotation marks.

FINISH = terminate the current file and update.

Finish is a key instruction. This instruction is used to save the changes that were made to a message file, close the message file and clear the screen. (This same action is done automatically by MME-SIGMA when the user *displays* another message file or when the *log off* instruction is issued.)

GET = access another user's file.

Get is a typed instruction and requires confirmation from the user. This instruction allows the user to access message files belonging to other users. (The identifier of a user other than yourself is referred to as a Foreign Name. This instruction *gets* another user's file and names it for your use; the file you *get* will always reflect the current state of the foreign file. You will see any changes the owner of the file has made to it even if they were made after you issued the *get* instruction.

MOVE = move the entry out of the current file into another file.

Move is a typed instruction and requires confirmation from the user. This instruction is used to move entries from one open message file to another and causes the moved entry to be deleted from the open message file.

2

PRINT = print the File Directory or the open file.

Print is both a key and typed instruction and is used to make printed copies of information on the hardcopy printer. There are *Print* keys for printing the displayed object, viewed object, or current entry. Used as a typed instruction, the open message file will be *printed* on the hardcopy printer and requires confirmation from the user.

RESTORE = restore a deleted entry from the displayed file or restore a previously deleted file.

Restore is a typed instruction and requires confirmation from the user. This instruction is used to *restore* message files that have been *deleted* and can be used only before issuing the *finish* instruction or the *log off* instruction.

RESTRICT = from currently selected entries, display only those with selection criteria.

Restrict is a typed instruction and requires confirmation from the user. This instruction is used to *restrict* the display of the file entries presently displayed to those described by a specified selector.

SHOW-FILE = redisplay the open message file

Show-File is a key instruction and is used to get the open file back on the screen when the user has displayed something else.

VIEW = put entry or File Directory in view window. Cannot be edited.

View is both a key and typed instruction. This instruction is used to place information in the view window of the display screen. The view window allows you to see file entries, messages or text objects without being able to edit them. Any material placed in the view window with the *view* instruction can be erased using the *Clear View* terminal key. Using *view* as a key instruction allows viewing a message by selecting an entry in an open file which is marked with the *Here* terminal key. Using *view* as a typed instruction requires that the file containing the object to be placed in the view window be open and the object number or version be specified when the *view* instruction is typed. When used as a typed instruction, *view* requires confirmation.

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7. Text Items

In your initial use of MME-SIGMA you will be working primarily with messages and message files. Our intention has been to focus on these objects. In time you will be working with text items. This section will give you an idea of what they are and what instructions are associated with them.

A text item is any arbitrary group of words composed by the user. For instance, frequently a user deals with a list of addressees over and over again. To eliminate having to retype these names each time they are used, the user may type them once and store them as a text item in his Text Directory.

The user may create, name, and store any number of text items and use them whenever a particular list is needed to send a message to a particular group of users. Further, a user may create, name and store text, or pieces of text for use in any text field of a message, or text that will be inserted into a comment attached to one or more file entries.

A text item may be used as part of any field of a message or as part of a comment; other pieces of text may be created above or below a text item after it is put into the field, and the text item itself may be edited after it is put in the field of the message.

7.1 Summary: MME-SIGMA Text Item Instructions

ABORT = terminate without updating.

Abort is a typed instruction and requires confirmation from the user. This instruction operates on the open text item and any changes or additions to the text item are erased and the display window is cleared.

CLEAR = erase the view window.

Clear View is a terminal key. This instruction clears the view window, leaving the entire work area for editing.

DELETE = delete the named text object.

Delete is a typed instruction and requires confirmation from the user. This instruction *deletes* a text item and the *deleted* text object is shown in the Text Directory with an asterisk to the left of its name. The *deleted* text object may be *restored* if the *delete* instruction is issued accidentally, but only before *log off*.

DISPLAY = display the named text object for editing.

Display is used as a typed instruction to *display* a specified text item and requires confirmation from the user.

2

FINISH = terminate the current text object and update editing.

Finish is a key instruction and is used to terminate editing of the current text item; this instruction saves the work done on the text item, closes it and clears the screen.

GET = access another user's text.

Get is a typed instruction and requires confirmation from the user. This instruction is used to *get* existing text items from another user.

PRINT = print Text Directory or the text object on the printer.

Print is the instruction used to make copies of information on the line printer. Used as a key instruction to print the user's text directory: first use the *text directory* instruction key, then the *print viewed object* instruction key. To *print* a specified text item, this instruction is typed and requires confirmation from the user.

PUT = put the text object at the marked place in the display.

Put is a typed instruction and requires confirmation from the user. This instruction is used to place text identified by name at the location marked by the *Here* terminal key.

RECLASSIFY = change the classification of a text object.

Reclassify is a typed instruction and requires confirmation from the user. This

instruction is used to change the security level of the text item and requires a security confirmation.

RESTORE = restore a previously deleted text object (opposite of *DELETE*).

Restore is a typed instruction and requires confirmation from the user. This instruction is used to *restore* text items that have been *deleted*. If a new text item with the same name as a *deleted* text item is created during the session, the *deleted* text is rewritten and cannot be *restored*.

SAVE = save editing up to this point.

Save is a key instruction and is used to preserve the present editing of a text item. This instruction does not erase the display window and editing may continue.

UPDATE = perform text formatting.

Update is a key instruction that causes SIGMA to perform the text formatting operations. Individual lines are combined. Lines beginning with a blank space are not formatted and are left exactly as they were typed.

VIEW = put text in view window. Cannot be edited.

View is a typed instruction and requires confirmation from the user. This instruction is used to *view* the named text item in the view window of the display.

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8. Selectors

As you become more experienced and knowledgeable in your use of MME-SIGMA you will want to work with selected portions of message files and to access other user's files. You may do so by using selectors. Selectors restrict file entries to those you wish to see of a particular kind that are of interest to you. You can use any number of selectors when working with files, including the words AND (which means that the selected messages must meet two or more criteria) and OR (which means that selected messages must meet any one of several criteria).

Selectors may be created and stored in your Selector Directory. Again, since our focus has been on basic message handling and message files we have briefly described Selectors and include a summary of MME-SIGMA instructions associated with them.

8.1 Summary: MME-SIGMA Selector Instructions

AUGMENT = add to current display by selector.

> *Augment* is a typed instruction and requires confirmation from the user. This instruction is used to add file entries to the currently displayed list of entries from the file open for display.

BACKUP = re-display file to previous selection criteria.

Backup is both a key and typed instruction and can be either *backup* (one) or *Backup All*. Used as a key instruction it is useful to recover a previous display if the user has accidentally asked for the addition or removal of too large a subset of file entries. Used as a typed instruction it restores the display to the original display before any *restrict* or *augment* instructions, and requires confirmation from the user.

CREATE = save the selector for the current file entries.

Create is used with selectors as a typed instruction and requires confirmation from the user. This instruction is used to save the selector which describes the current display of the open file.

DELETE = delete a named selector.

Delete is used with selectors as a typed instruction and requires confirmation from the user. This instruction is used to *delete* a selector from the Selector Directory. If the instruction is issued by mistake, the selector may be *restored*.

GET = access another's selector.

Get is a typed instruction and requires confirmation from the user. This instruction is used to *get* a selector from another user's Selector Directory.

PRINT = print the named selector or the Selector Directory.

Print is a key instruction and is used to print the displayed or view selector on the hardcopy printer. This instruction may be used with a selector as a typed instruction to print the named selector on the hardcopy printer and requires confirmation from the user.

RESTORE = restore a previously deleted selector (opposite of *DELETE*).

Restore is a typed instruction and requires confirmation from the user. This instruction is used to *restore* a *deleted* selector to the user's Selector Directory.

RESTRICT = from currently selected entries, display only those with selection criteria.

Restrict is a typed instruction and requires confirmation from the user. This instruction is used to *restrict* the display to a subset of those file entries presently displayed.

VIEW = place named selector or Selector Directory in the view window. Cannot be edited.

View is a typed instruction and requires confirmation from the user. This instruction is used to place a copy of a specified selector in the view window of the display.

9. Miscellaneous MME-SIGMA Instructions

EXERCISE = start an exercise from within a lesson.

Exercise is a typed instruction and is used to begin an exercise within a lesson in the MME-SIGMA On-Line Tutorial. (See Section 10.2, MME-SIGMA On-Line Tutorial.)

IDENTIFY = specify user name performing as office code.

Identify is a typed instruction and requires confirmation. This instruction is used to change the previous user's identity to that of another user.

LESSON = start on a lesson.

Lesson is a typed instruction and requires confirmation. This instruction is used to start on a lesson during a session with the MME-SIGMA On-Line Tutorial. (See Section 10.2, MME-SIGMA On-line Tutorial.)

LOG OFF = log off from the MME-SIGMA service.

Log off is a typed instruction and requires confirmation. This instruction is used to terminate use of MME-SIGMA.

PRINT = print the displayed object or the viewed object.

2

Print is both a key and typed instruction and is used to make printed copies of information on the line printer. The *print* instruction key can be used after other instruction keys (e.g., *Text-Directory*), or to print the next or current message, or a message marked with the *Here* terminal key. *Print* used as a typed instruction is used to print a message identified by the Message ID, or entry number in an open file. When used as a typed instruction, *Print* requires confirmation by the user.

QUIT = exit from a lesson.

Quit is a typed instruction and requires confirmation. This instruction is used in connection with the MME-SIGMA On-Line Tutorial. (See Section 10.2, MME-SIGMA On-line Tutorial.)

SYSTEM NEWS

System News is a typed instruction and requires confirmation from the user. This instruction is used to re-view the News which appears automatically when a user logs on to MME-SIGMA. This instruction allows the user to see the News without logging off and on again.

SYSTEM STATUS

System Status is a typed instruction and requires confirmation from the user. This instruction allows the user to *view* the status of all logged on MME-SIGMA users.

10. MME-SIGMA Documentation

10.1 SIGMA Message Service Reference Manual

The MME-SIGMA Message Service Reference Manual consists of general description chapters and instruction descriptions. The material is organized by service function. The manual provides an outline of instructions needed to perform a range of tasks for each object in MME-SIGMA.

A more detailed description of MME-SIGMA instructions is provided in the Instruction Descriptions section of the Reference Manual.

10.2 SIGMA On-line Tutorial

MME-SIGMA, in addition to the MME-SIGMA Primer and the MME-SIGMA Message Service Reference Manual, has available an on-line tutorial that provides a number of lessons which a user may take. The lessons consist of discussions of MME-SIGMA instructions together with the option to do an *Exercise* using the instruction discussed in the lesson.

2

Before taking a lesson all open objects must be closed (using either the *finish* instruction key or the *abort* typed instruction). Also, if any material is being shown in the view window it must be erased (using the *Clear View* terminal key).

Tutorial lessons have numbers and parts: for instance, Lesson 2, Part B. The MME-SIGMA instruction to Use the tutorial is *lesson*, the number of the lesson and, if applicable, the part of the lesson. We demonstrate the complete *lesson* instruction; an abbreviated instruction form would be *les 2b*.

ΔΔ*lesson number 2 part b*

Occasionally you may enter an instruction incorrectly when taking an exercise. When this happens, MME-SIGMA may display an error message which suggests that you press the *Prompt* key for help. This message was designed for use during normal operations, and does not apply during lessons and exercises, when the key is used to alternate between exercise text and instruction results.

The available tutorial lessons are:

Lesson 1: A General Description of the MME-SIGMA Service
Lesson 2 Part A: Beginning to Use the MME-SIGMA Service
Lesson 2 Part B: Beginning to use the MME-SIGMA Service
Lesson 3 Part A: The Filing Service - Basic Filing Techniques
Lesson 3 Part B: Advanced Filing Techniques
Lesson 3 Part C: Special Files
Lesson 4: Message Reception and Distribution
Lesson 5 Part A: Text Objects
Lesson 5 Part B: Editing Instructions for Text Objects
Lesson 5 Part C: Editing Instruction Keys
Lesson 6: Message Drafting

You may leave a tutorial lesson at any time and return to your regular use of MME-SIGMA. The instruction to leave the tutorial is *quit lesson*, and when you *quit* a lesson any objects opened during an *exercise* are automatically *aborted*.