M T S

The Michigan Terminal System

Messaging and Conferencing in MTS

Volume 23

Reference R1023

February 1991

DISCLAIMER

The MTS manuals are intended to represent the current state of the Michigan Terminal System (MTS), but because the system is constantly being developed, extended, and refined, sections of this volume will become obsolete. The user should refer to the *U-M Computing News* and other ITD documentation for the latest information about changes to MTS.

CONTENTS

PREFACE

The software developed by the Information Technology Division (ITD) technical staff for the operation of the high-speed IBM 370-compatible computers can be described as a multiprogramming supervisor that handles a number of resident, reentrant programs. Among them is a large subsystem, called MTS (Michigan Terminal System), for command interpretation, execution control, file management, and accounting maintenance. Most users interact with the computer's resources through MTS.

The *MTS Volumes* are a series of manuals that describe in detail the facilities provided by the Michigan Terminal System. Administrative policies of ITD and the physical facilities provided are described in other publications.

The *MTS Volumes* now in print are listed below. The date indicates the most recent edition of each volume; however, since volumes are periodically updated, users should check the file *CCPUBLICATIONS, or watch for announcements in the *U-M Computing News*, to ensure that their volumes are fully up to date.

Volume 1: *The Michigan Terminal System*, Reference R1001, November 1988
Volume 2: *Public File Descriptions*, Reference R1002, January 1987
Volume 3 *System Subroutine Descriptions*, Reference R1003, April 1981
Volume 4: *Terminals and Networks in MTS*, Reference R1004, July 1988
Volume 5: *System Services*, Reference R1005, May 1983
Volume 6: *FORTRAN in MTS*, Reference R1006, October 1983
Volume 7: *PL/I in MTS*, Reference R1007, September 1982
Volume 8: *LISP and SLIP in MTS*, Reference R1008, June 1976
Volume 9: *SNOBOL4 in MTS*, Reference R1009, September 1975
Volume 10: *BASIC in MTS*, Reference R1010, December 1980
Volume 11: *Plot Description System*, Reference R1011, August 1978
Volume 12: *PIL/2 in MTS*, Reference R1012, December 1974
Volume 13: *The Symbolic Debugging System*, Reference R1013, September 1985
Volume 14: *360/370 Assemblers in MTS*, Reference R1014, May 1983
Volume 15: *FORMAT and TEXT360*, Reference R1015, April 1977
Volume 16: *ALGOL W in MTS*, Reference R1016, September 1980
Volume 17: *Integrated Graphics System*, Reference R1017, December 1980
Volume 18: *The MTS File Editor*, Reference R1018, February 1988
Volume 19: *Tapes and Floppy Disks*, Reference R1019, October 1989
Volume 20: *Pascal in MTS*, Reference R1020, December 1985
Volume 21: *MTS Command Extensions and Macros*, Reference R1021, April 1986
Volume 22: *Utilisp in MTS*, Reference R1022, May 1988
Volume 23: *Messaging and Conferencing in MTS*, Reference R1023, February 1991

The numerical order of the volumes does not necessarily reflect the chronological order of their appearance; however, in general, the higher the number, the more specialized the volume. *MTS Volume 1*, for example, introduces the user to MTS and describes in general the MTS operating system, while *MTS Volume 10* deals exclusively with BASIC.

The attempt to make each volume complete in itself and reasonably independent of others in the series naturally results in a certain amount of repetition. Public file descriptions, for example, may appear in more than one volume. However, this arrangement permits the user to buy only those volumes that serve his or her immediate needs.

Richard A. Salisbury
General Editor

PREFACE TO VOLUME 23

The February 1991 edition of *MTS Volume 23: Messaging and Conferencing in MTS*, Reference R1023, incorporates the following changes:

The MTS Message System

The CC and BCC options have been added to the SEND command.

Remote dispatches have been implemented.

The MTS Full-Screen Message System

Several new options have been added for filter expressions on the CREATE and DIRECTORY commands.

The INSERT and NEWMAIL commands have been added.

The MTS User Directory

The PURGE and RENAME commands have been added to the User Directory command language.   A description of the *FINGER program has been added.

The CHECK, ERRORPROMPT, EXPAND, MATCH, and NAME options have been added to the SET command.

The STATUS, COMPLETENAME, DESCRIPTION, FULLNAME, LISTMAINTAINER, MEMBERLIST, and REDISTRIBUTOR parameters have been added to the ADD, MODIFY, and DISPLAY commands.

Introduction to Forum

No changes.

Introduction to Confer II

No changes.

Introduction to InfoX

New section added.

THE MTS MESSAGE SYSTEM

The MTS Message System may be used to send messages from one user to another user on either the same or a different system. There are commands to compose and send messages, to retrieve and reply to messages, to forward or share messages, and to display the status of existing messages.

Each user of MTS has a private mailbox that is automatically created and maintained by the Message System. The user is not required to supply a private file for the mailbox. The mailbox may be identified either by the userID, or a name explicitly assigned to the mailbox by the user (see the section "The MTS User Directory" in this volume), or both. This mailbox is a repository for messages sent to or received from other users or the system.

The Message System supports three types of messages. They are:

(1)   *mail*, which is the most common type of message. Mail messages are sent between individual userIDs or names, between groups of userIDs or names, or to/from entities in the outside world. Mail messages are stored in the recipient's and sender's mailboxes.

(2)   *dispatches*, which are real-time conversational messages sent between individuals on the same system. Once sent, a dispatch is printed immediately on the recipient's terminal.

(3)   *sign-on messages*, which are special system messages that are printed by MTS *after* the user signs on. Sign-on messages may be directed to all users or to selected users at sign-on time.

The Message System is entered by the MESSAGE command, which may be abbreviated as ME. The prefix character for the Message System is the "@". Two other prefix characters are also used—a "?" when the Message System is prompting the user for message text, and a ":" when the MTS File Editor is invoked from the Message System to edit the contents of the message being composed. The use of these prefix characters is illustrated in the examples that follow. The Message System also may be accessed using Full-Screen Message or InfoX.

When the Message System is invoked for the very first time, a short introductory message is printed. After reading this message, the user may suppress it for future sessions by issuing the command SET INTRODUCTION=OFF.

The Message System has extensive help/explain and prompting facilities. HELP commands may be issued almost anywhere to obtain immediate information or assistance. The Message System also has two automatic aids, referred to as autohelp mode and autoprompt mode. They are initially enabled for all users.

Autohelp mode will generate HELP messages in many situations where additional information would be of use to beginning users. Autohelp mode may be disabled permanently by issuing the command SET AUTOHELP=OFF. Autohelp mode will remain disabled for future sessions unless reenabled by the command SET AUTOHELP=ON. The user may always issue an explicit HELP command for further information when needed, even if autohelp mode is disabled.

The Message System will generate prompting messages when it requires information from the user, for example, when messages are being composed by the SEND command or retrieved by the RETRIEVE command. This prompting may be abbreviated by issuing the command SET

AUTOPROMPT=OFF; however, most users probably will prefer to leave autoprompt mode enabled. The examples below disable autohelp mode while leaving autoprompt mode enabled.

The SEND command is used to compose and send messages. When the SEND command is entered, the sender will be prompted to enter the name of the recipient or recipients of the message, the subject, and the text of the message. The recipient may be an individual name, a group name, a userID, a projectID, or a list of any of these, separated by commas. If the recipient is an individual or a group name, the name must be enrolled in the User Directory database.

After the recipient has been named, the sender will be prompted for the text of the message. For mail messages, up to 1000 lines (or 25,000 characters) may be entered. The prompting will continue until the user enters an end-of-file or a null line. The next sequence of examples illustrates the composition and sending of a message from Marlou Smith (userID WABC) to John Brown (userID WXYZ), followed by a reply from John to Marlou. The examples are illustrated with AUTOHELP=OFF in order to reduce the amount of text; users are encouraged to use the Message System with AUTOHELP=ON until they are familiar with the system.

```
#message
  This is the MTS $Messagesystem.
  { Introductory information. }
@set introduction=off autohelp=off
@send
 To:
?ID=WXYZ
 Subject:
?Message System Test
 Text:
?Dear John,
?  I am texting out the MTS
?Message System.  Do you read me?
?                        Marlou
?{null line}
```

After the initial message has been composed, the Message System will prompt the sender whether the message should be posted as it stands or whether it should be edited. Posting the message is analogous in the U. S. Postal System to dropping a letter into a mailbox for collection and delivery.

If the message is to be edited, the Message System will automatically invoke the MTS File Editor. Any editor command may be used to edit the message. Line numbers required by the editor correspond to the line numbers of the message text.

```
 Post, edit, display, destroy, help, etc.?
@edit
:alter 2 'texting'testing'
:    2        I am testing out the MTS
:return
```

After the message has been edited, the sender will be prompted again. (The user will continue to be prompted regarding the disposition of the message until it is either posted or destroyed.)

```
 Post, edit, display, destroy, help, etc.?
@post
 Message 1110844 has been posted.
```

The message is assigned a message number and is posted to John's mailbox (WXYZ). This message number may be used by either the sender or recipient to refer to the message later. If the sender

wants to display the edited message before posting it, the DISPLAY command may be given before the POST command. A DESTROY command or an attention interrupt may be given to destroy the message instead of posting it.

The next time the recipient signs on to MTS, the system automatically will announce the arrival of the message, e.g.,

```
# Message for mailbox WXYZ: 1 new
```

If the recipient is already signed on, he or she will receive immediate notification that a message has arrived (this immediate notification may be disabled by the recipient by issuing the MTS command $SET MAILCALL=OFF).

At this point, the Message System may be entered. The RETRIEVE command is used to retrieve messages, e.g.,

```
@retrieve
 1 message retrieved.

 Message: 1110844, 4 lines
 Posted: 3:37pm, Wed Jan 7/87
 Subject: Message System Test
 To: userID=WXYZ
 From: userID=WABC

 Dear John,
    I am testing out the MTS
 Message System.  Do you read me?
                          Marlou
```

After the message has been printed, the recipient is given the choice of saving the message, replying to the message, or deleting the message. A reply to the message is generated by entering the REPLY command. A reply is constructed in much the same way as the original message is constructed, e.g.,

```
 Next, history, delete, reply, help, etc.?
@reply
 Subject: Message System Test
 New subject:
?Message System OK
 Text:
?Dear Marlou
?  I received you loud and clear.
?                        John
?{null line}
```

The reply may be posted, edited, or destroyed in the same way as is done for the original message (a reply is treated as a separate message).

```
 Post, edit, display, destroy, help, etc.?
@post
 Message 1110949 has been posted.
 The current message is still 1110844 from WABC.

 Next, history, delete, reply, help, etc.?
 @
```

After the reply has been posted, the recipient is further queried about the original message.   A hard copy of the original message may be obtained by displaying the message with the output directed to *PRINT*, e.g.,

```
 Next, history, delete, reply, help, etc.?
@display output=*PRINT*
 *PRINT* ASSIGNED RECEIPT NUMBER 600000
```

If the recipient responds with DELETE, the message is deleted from the recipient's mailbox.

```
 Next, history, delete, reply, help, etc.?
@delete
 Message 1110844 has been deleted.
```

If the DELETE command is not given, the message is automatically saved and may be reviewed at a later time.   In either case, the message is marked as having been seen by the recipient.   If the recipient responds with NEXT, the next message found by the RETRIEVE command will be processed.

The sender of a message may determine whether or not a message has been seen by the recipient by using the DISPLAY command with the STATUS parameter, e.g.,

```
@display 1110844 status

Message: 1110844
To: userID=WABC (seen 7:27am Jan 8, deleted 7:28am Jan 8)
```

A message may be destroyed by using the DESTROY command.   Only the sender may destroy a message.   If any of the recipients have not seen the message, they will not see it.   However, if the recipients have seen the message, but not deleted it, they will still retain access to the message until it expires.   By default, messages automatically expire 31 days after they are sent.

```
@destroy 1110844
 Message 1110844 has been destroyed.
```

SENDING MESSAGES

The SEND command is used to send mail messages.   The format of the SEND command is

SEND options

where "options" may be one or more of the following:

TO recipient,...
CC recipient,...
BCC recipient,...
REPLYTO recipient,...
SUBJECT={'message-subject' | NONE}
TEXT='message-text'
INPUT=filename
EXPIRE={date | 'date'}
HOLDUNTIL={date | 'date'}

Underlining indicates minimum abbreviations; for example, the TEXT parameter may be given as

TEXT='text' or T='text'.

　　Messages may be sent to one or more primary, CC, or BCC recipients.　If more than one recipient is given, the names or userIDs must be separated from each other by commas.　The sender will be prompted for the recipients if they are not specified on the command line.　The list of recipients may contain any of the following:

```
'name'
ID=userID
ID=userID-userID
PROJECT=projectID
remotename
```

"name" specifies the name of an individual or a group as the recipient of the message.　The name must be registered in the User Directory database.　For individual names, the message will be sent to the userID mailbox of that person.　Either the person's full name or nickname may be given, if both are registered in the User Directory database.　For group names, the message will be sent to the mailbox of each individual that is registered in the group.　Primes (single quotes) are required around the name only if it contains blanks *and* it is entered on the command line; primes are not required if the user is prompted for the name or if underscore characters are used in place of blanks, e.g.,

```
John_Brown
```

is equivalent to

```
'John Brown'
```

"userID" specifies that the message is to be sent to the mailbox of that single userID.　"userID-userID" specifies that the message is to be sent to all members in a range of userIDs; all the userIDs must be within the same project.　"projectID" specifies that the message is to be sent to all members within that project.

　　"remotename" is the address of a recipient that is not on the same MTS system (see "Remote Messages" later for details).

　　When a name is entered on the SEND command, the Message System uses a phonetic algorithm to find it in the User Directory database.　Several names may have the same phonetic structure.　Thus, the result of the first "phonetic pass" through the directory is a list of possible names.　The list is checked to see if any of the names exactly match the spelling of the requested name.　If there is only one match, the search succeeds immediately.　If there is more than one, the user will be shown the list of possible matches and near matches, for example,

```
3 names matched "John Brown".

1. John Brown (ID WXYZ)
   Description: ITD Systems Analyst
2. John C. Brown (ID S123)
3. John Henry Brown, remote John_Henry_Brown@ub.cc.umich.edu

Enter the number of the name you want, CONTINUE, or CANCEL
? 1
```

Entering the number "1" selects the first name.　Typing CANCEL or entering an end-of-file cancels the SEND command.　If you type CONTINUE or enter a carriage return, you will be shown "near

matches"—names that are spelled like the name you entered. For example, "John Browne" is a near-match for "John Brown".

If more than 10 names match, you will see a prompt such as:

```
100 names matched "Brown".
Do you wish to see a list of names (YES or NO)?
```

NO cancels the SEND command. If you answer YES, the User Directory will show 10 names at a time:

```
      1. Jane Brown (ID ABCD)
      2. John Brown (ID WXYZ)
         ...
      10. Jack Brown, remote Jack_Brown@ub.cc.umich.edu
      Enter the number of the name you want, MORE, or CANCEL

    ? more
      11. Buck Brown (ID 2345)
         ...
```

Type MORE or enter a carriage return to see more names.

If you have $SET TERSE=ON, the User Directory will display only 10 names and will exclude near matches. If you have $SET ERRORPROMPT=OFF, the program will print out up to 25 matching names and will exclude near matches.

A "carbon" copy of the message will be sent to a secondary recipient if the CC keyword is specified. A "blind carbon copy" (whereby the primary recipient is not notified) will be sent to a secondary recipient if the BCC keyword is specified. For example, the command

```
    SEND TO 'John Brown' CC 'Jack Black'
```

will send a carbon copy of the message to Jack Black.

The REPLYTO parameter specifies that a reply to this message (if any) should be sent to someone other than the sender. It may specify one or more recipients who will *all* get the reply. The sender will not get the reply in this case unless he or she is listed in the REPLYTO recipient list.

A brief description of the subject of the message may be given with the SUBJECT keyword. The subject is normally printed along with the message text when the message is displayed. This description is limited to 128 characters. If the SUBJECT keyword is omitted, the user is prompted for the subject. If SUBJECT=NONE is specified, no subject is included with the message.

The message may be given on the command line as a single line of text or may be read from another file using the INPUT keyword. For example,

```
    SEND TEXT='This is a message' TO 'John Brown' SUBJECT='One Liner'
```

will send a one-line message to John Brown, and

```
    SEND INPUT=MEMO TO 'John Brown' SUBJECT='Longer Message'
```

will send the message contained in the file MEMO to John Brown. If the message and/or subject are not supplied on the command line, the sender is prompted for them. Lines of text may be entered until the message is terminated with an end-of-file or a null input line. The subject may be suppressed by

entering a null input line to the subject prompt.

The EXPIRE keyword specifies an expiration date for the message after which the message will be automatically destroyed.   Almost any commonly used time/date format is acceptable.   The expiration date must be enclosed in primes only if it contains blanks.   Blanks may be omitted except where ambiguities arise, such as running two numbers together.   Some examples of valid time/dates are:

```
'1am Wednesday Jan 7,1987'
1am
Wednesday
Jan7
'Jan 7'
7Jan
7Jan/87
18:30
6:30pm
2weeks
'2 weeks'
7days
7minutes
7seconds
```

Dates are always resolved into the future, e.g., if 1 a.m. today has already occurred, 1 a.m. tomorrow is assumed.   The default is 31 days; the maximum limit is 150 days.

The HOLDUNTIL keyword specifies a time or date after which the message will be delivered. Until that time, the message will be held and will not be accessible to the recipients.   The same time/date format is used for HOLDUNTIL as is used for EXPIRE.   The maximum length of time for which a message can be held is 150 days.   The default is 0 hours (the message is delivered immediately).   For example,

```
SEND HOLDUNTIL=July1 EXPIRE=July31 TO 'John Brown'
```

will hold the message being sent to John Brown until July 1.   After July 31, the message will be destroyed.   Note that if HOLDUNTIL is specified, the recipients will not be notified of the new message until they sign-on after the specified time.

After the message has been assembled, the sender will be prompted about what to do with the message:

```
Post, edit, display, destroy, help, etc.?
```

Any Message System command may be given as a response.   The most common responses are:

(1)   POST.   The message is assigned a unique message number and then posted to each recipient.   The message number may be used later by either the sender or recipient(s) to refer to the message with other Message System commands.

(2)   EDIT.   The MTS File Editor is invoked to allow the sender to edit the message.   Any editor command may be used to edit the message.   The RETURN or MTS command should be used to return from the File Editor to the Message System.

(3)   APPEND.   The sender may append additional text to the message.   Any of the SEND command options may be used with the APPEND command.

(4) MODIFY. The sender may modify attributes of the message such as the recipient list, the subject, or the expiration date (the EDIT command is more convenient to change the message text). Any of the SEND command options may be given on the MODIFY command.

(5) DISPLAY. The text of the message is displayed.

(6) DESTROY. The message is destroyed without being posted.

(7) HELP. An explanation of the user's options is given.

(8) Attention Interrupt or End-of-File. The user is returned to Message System command mode and the message is destroyed (the attention interrupt requires confirmation before the message is destroyed; the end-of-file does not).

If the message is not posted, it remains the active message. The active message is the message currently being processed by the Message System (either by the SEND command or the RETRIEVE command). As the active message, it may be further edited, displayed, or modified. The sender will be prompted repeatedly with "Post, ..." until the message is either posted or destroyed.

If autoprompt mode is disabled, the user will be prompted by the message

```
Post it?
```

The response may be "Yes", "No", or any Message System command. If the response is "Yes", the message is posted; if the response is "No", the message remains the active message and a return is made to Message System command mode. The message subsequently may be posted, edited, or destroyed.

When a message is posted, it is placed in each recipient's mailbox as well as the sender's own mailbox.

For mail messages, there is a limit of 1000 lines of text or 25,000 characters per message, whichever comes first. Each user is also limited to the least of 300 messages, 10,000 total lines of message text, or 250,000 total characters. Each message is limited to 500 recipients.

In the following example, Marlou Smith (userID WABC) is composing a message to John Brown (userID WXYZ). After the message has been composed, the text of the message is edited and displayed and a hold-until date is added before the message is posted.

```
@send subject='Message System Test'
 To:
?John Brown
 Text:
?Dear John,
?  I am testing out the MTS
?Message System.  Do you read me?
?                      Marlou
?{null line}

 Post, edit, display, destroy, help, etc.?
@edit
:insert 3
?Send me a reply as soon as possible!
?{null line}
```

```
   :return

    Post, edit, display, destroy, help, etc.?
   @display

    Message: (unfinished SEND command), 5 lines
    Subject: Message System Test
    To: John Paul Brown
    From: Mary Louise Smith

    Dear John,
       I am testing out the MTS
    Message System.  Do you read me?
    Send me a reply as soon as possible!
                          Marlou
    Post, edit, display, destroy, help, etc.?
   @modify holduntil=1Feb/87

    Post, edit, display, destroy, help, etc.?
   @display holduntil

    Message: (unfinished SEND command)
    Hold-until: 12:00am Sun Feb 1/87

    Post, edit, display, destroy, help, etc.?
   @post
    Message 1112573 has been posted.
```

The MTS File Editor is described in *MTS Volume 18: The MTS File Editor*, Reference R1018.

RETRIEVING AND REPLYING TO MESSAGES

The RETRIEVE command is used to retrieve the text of a mail message or a set of mail messages. The format of the RETRIEVE command is

RETRIEVE message [items]

where "message" specifies the message or messages to be retrieved and "items" control other attributes of the message to be retrieved. "message" may be any one of the following:

{INCOMING | OUTGOING}
{NEW | OLD | NEWANDOLD}
message-number,...
FROM sender,...
TO recipient,...

"items" are the same as the items available with the DISPLAY command (see below).

The RETRIEVE command searches through the current mailbox and selects the messages that have been requested. This set of messages is called the result set. By default, the first message found becomes the active message and is printed. The remainder of the messages can be viewed by giving the NEXT command or the DISPLAY command. The mailbox contains a copy of *all* current messages that have been either sent or received by the user.

INCOMING specifies that all messages being sent to the user are to be retrieved and is the default. OUTGOING specifies that all messages being sent by the user to other recipients are to be retrieved.

The NEW parameter may be used to restrict the set of messages retrieved to include only messages that have not been previously seen.   The OLD parameter includes only the messages that have been seen.   NEWANDOLD includes both types, e.g.,

> RETRIEVE NEWANDOLD

The MESSAGE parameter specifies that either a single message or a series of messages is to be retrieved.   The messages are identified by the message numbers, e.g.,

```
RETRIEVE 1112573
RETRIEVE 1112573, 1112333, 1112345
```

The FROM parameter specifies a sender or list of senders from which messages are to be retrieved. The TO parameter specifies a recipient or list of recipients to whom messages have been sent.   The list may contain userIDs, projectIDs, or names, e.g.,

```
RETRIEVE FROM 'Marlou Smith'
```

If the RETRIEVE command is given without a "message" parameter, RETRIEVE INCOMING NEW is defaulted.   This will retrieve all unseen incoming messages, indicate how many there are, and print the first message.   For example,

```
@retrieve
 2 messages retrieved.

 Message: 1112573, 5 lines
 Posted: 1:10pm Wed Jan 28/87
 Subject: Message System Test
 To: John Paul Brown
 From: Mary Louise Smith

 Dear John,
    I am testing out the MTS
 Message System.  Do you read me?
 Send me a reply as soon as possible!
                      Marlou
```

In autoprompt mode (the default), after the message has been printed, the recipient will be prompted to reply to the message, to delete the message, or to move on to the next message, e.g.,

```
Next, history, delete, reply, help, etc.?
```

Any Message System command may be given as a response.   The most common responses are:

(1)   NEXT.   The next message becomes the active message and is printed.   If there are no more messages, the user is returned to Message System command mode.   A null line is equivalent to the NEXT command.

(2)   HISTORY.   The last unviewed history message to the active message is displayed.

(3)   DELETE.   The active message is deleted from the recipient's mailbox, and the next message is retrieved.

(4) REPLY. The recipient may compose a reply to the message and return it to the sender or recipients specified by REPLYTO. The reply is formed in a manner similar to sending a message.

(5) ARCHIVE. A copy of the active message is saved in a private file (see the section "Archiving Messages" below).

(6) FORWARD. The active message is forwarded to another recipient (see the section "Forwarding Messages" below).

(7) HELP. An explanation of the user's options is given.

(8) Attention Interrupt or End-of-File. The user is returned to Message System command mode (the attention interrupt requires confirmation before the retrieve result is discarded; the end-of-file does not).

If autoprompt mode is disabled, the user will be returned to Message System command mode after the first message is displayed. The first message remains the active message and subsequently may be replied to, deleted, forwarded, etc. The NEXT command may be given to display the next message.

After a message has been retrieved, it will be marked as "delivered" if only the header is printed, or as "seen" as well if the text is printed. A message will be marked as "deleted" when the DELETE command is given. Unless deleted, a message will be saved and will remain in the recipient's mailbox until its expiration date.

The REPLY command may be used to reply to a message. The format of the REPLY command is

REPLY message options

where "message" is the message number of the message being replied to and "options" are the same as the options available with the SEND command. If "message" is omitted, the reply is generated for the active message (the last message processed by the Message System).

By default, a reply is sent only to the original sender of the message or to recipients specified by the REPLYTO parameter when it was sent. If the replier desires that other recipients of the message also see the reply, the TO option must be specified. TO ALLRECIPIENTS (or TO ALL) will send the reply to all recipients of the message as well as the original sender and anyone specified by the REPLYTO parameter, e.g.,

```
REPLY 1112333 TO ALL
```

The REPLY command will prompt the user in the same manner as for the SEND command; that is, the replier may edit, modify, or destroy the reply as desired. For example, a reply to message 1112573 could be generated as follows:

```
@reply 1112573
 Subject: Message System Test
 New subject:
?Message System OK
 Text:
?Dear Marlou,
?  I received you loud and clear!
?                       John
?{null line}
```

```
    Post, edit, display, destroy, help, etc.?
   @post
    Message 1112629 has been posted.
```

If a null response is given to the prompt for the new subject, the text from the original subject (if any) will be used for the new subject.

Messages and replies to them are retained by the Message System and comprise a history of the conversation.   The messages in this history can be viewed by specifying the HISTORY command, which has the format

HISTORY n

where "n" specifies that the last "n" unviewed history messages are to be displayed.   The entire conversation can be displayed by specifying the command

HISTORY FULL

DISPLAYING THE STATUS OF MESSAGES

The DISPLAY command is used to display the status of a message or information about the user's mailbox.   There are two forms of the DISPLAY command.   The first form is

DISPLAY message [items] [OUTPUT=FDname]

where "message" specifies the message or messages to be displayed and is given as

message-number,...

If "message" is omitted, the active message is assumed.   "items" may be any one of the following:

{HEADER | SUMMARY}
STATUS
EXPIRES
HOLDUNTIL
SUBJECT
TEXT
RECIPIENTS

HEADER displays only the header of the message, which consists of the message number, sender, date sent, and recipients.   SUMMARY displays the header, the recipients, and the subject and text of the message; this is the default, if "items" is omitted.

The MESSAGE parameter specifies a single message that is identified by the message number generated when the message was originally composed by the SEND command.   For example, the command

```
   DISPLAY 1112573
```

will display the message as follows:

```
    Message: 1112573, 5 lines
    Posted: 1:10pm Wed Jan 28/87
    Subject: Test 1 2 3!
    To: John Paul Brown
    From: Mary Louise Smith

    Dear John,
       I am testing out the MTS
    Message System.  Do you read me?
    Send me a reply as soon as possible!
                            Marlou
```

Alternatively, the command

```
    DISPLAY 1112573 HEADER
```

will display the message as follows:

```
     Message: 1112573, from Mary Louise Smith, posted: 1:10pm Wed
    -Jan 28/87
```

If only the status of delivery is desired, the STATUS option may be given. For example, the command

```
    DISPLAY 1112573 STATUS
```

will produce

```
    Message: 1112573
    To: John Paul Brown (seen 10:28am Jan 29)
```

The expiration date, the hold-until date, the subject, the message text, and the recipient list may be displayed individually by specifying the appropriate parameter on the DISPLAY command.

The OUTPUT parameter may be used to direct the output of the command to another file or device. For example, the command

```
    DISPLAY 1112573 OUTPUT=*PRINT*
```

will direct the output to *PRINT*.

The second form of the DISPLAY command is

    DISPLAY status

where "status" specifies the status information to be displayed about the user's mailbox and is given as

    {MESSAGES | INCOMING | OUTGOING}
    MAILBOX
    FORWARD
    PERMIT
    ARCHIVE

MESSAGES specifies that status information is to be displayed about all messages in the user's mailbox.   INCOMING and OUTGOING specify that status information is to be printed about incoming or outgoing messages, respectively, e.g.,

```
@display messages
 Incoming Messages: 4 (1 not accessed,3 seen)
 Outgoing Messages: 2
```

MAILBOX displays information about the user's mailbox, such as the enrolled name, permit status, archive file, or forward file.

DELETING AND DESTROYING MESSAGES

The DELETE command is used by a recipient to delete a mail message from his or her mailbox. The format of the DELETE command is

DELETE message

where "message" specifies the message or messages to be deleted.   If "message" is omitted, the active message is deleted.

Only a recipient may delete a message.   When a message is deleted, the recipient loses access to the message and is presumed to have seen it.   The sender and all other recipients of the message are unaffected.   For example, the following sequence of commands will copy message 1112573 to the file MSGFILE and then delete the message from the user's mailbox:

```
@display 1112573 output=msgfile
@delete
 Message 1112573 has been deleted.
```

The DELETE command does not require the message number in this case, since the previous DISPLAY command has made message 1112573 the active message.

The UNDELETE command may be used to recover a message that has been deleted.   The format of the UNDELETE command is

UNDELETE message

where "message" specifies the message or messages to be undeleted.   If "message" is omitted, the active message is undeleted.

A deleted message may be recovered up to 42 hours after it has been deleted.

The DESTROY command is used by a sender to destroy a message.   The format of the DESTROY command is

DESTROY message

where "message" specifies the message or messages to be destroyed.   If "message" is omitted, the active message is destroyed.

Only a sender may destroy a message.   When a message is destroyed, the sender and all recipients who have not seen the message lose access to it.   Recipients who have seen the message retain access.

A common use for the DESTROY command would be to retract a message after it has been posted. Note that messages sent to remote recipients are often exported from MTS very quickly and destroying them after that has no effect on the previously exported message.

MODIFYING MESSAGES

The MODIFY command is used by a sender to modify a message.   The format of the MODIFY command is

MODIFY message options

where "message" is the message number of the message being modified and "options" are the same as the options available with the SEND command:

TO recipient,...
CC recipient,...
BCC recipient,...
REPLYTO recipient,...
TEXT='message-text'
INPUT=FDname
EXPIRE={date | 'date'}
HOLDUNTIL={date | 'date'}
SUBJECT={'message-subject' | NONE}
EDIT
APPEND

If "message" is omitted, the active message is modified.   The above SEND command options specify the part of the message to be modified.   After the modification is made, the user is prompted to send the revised message.   For example, the expiration date of message 1112573 could be modified as follows:

```
@modify 1112573 expire=28February/87

 Post, edit, display, destroy, help, etc.?
@display expire

 Message: 1112573 (unfinished MODIFY command)
 Expires: 12:00am Sat Feb 28/87

 Post, edit, display, destroy, help, etc.?
@post
 A revised version of message 1112573 has been posted.
```

If the EDIT option is specified, the MTS File Editor will be invoked to edit the text of the message. Any editor command may be used to edit the message.   Line numbers required by the editor correspond to the line numbers of the message text.   The method of editing is the same as illustrated in the section "Sending Messages."

If the APPEND option is specified, additional text may be appended to the message.   The additional text may be entered on the command line by the TEXT or INPUT options or, if the text is omitted from

the command line, the user will be prompted for it.

If either the TEXT or INPUT option is given without the APPEND option, the current message will be replaced in its entirety with the new text.

Only a sender may modify a message. If the original message has not been posted, any part may be modified including either adding or deleting recipients. If the message has already been posted, recipients may be added, but not deleted. If the user desires to remove a recipient from a previously posted message, the message must be destroyed and a new message created.

FORWARDING MESSAGES

The FORWARD command is used to forward a mail message to another recipient. The format of the FORWARD command is

      <u>FOR</u>WARD message options

where "message" is the message number of the message being forwarded and "options" are the same as the options available with the REPLY command. If "message" is omitted, the active message is forwarded.

The FORWARD command will prompt the user for additional text to be included in a separate message sent with the forwarded message. The user is prompted in the same manner as for the SEND command, that is, the additional text may be edited, modified, or deleted as desired. For example, message 1112573 could be forwarded as follows:

```
@forward 1112573 subject='Message System Test'
 To:
?Jack Black
 Text (to attach to the forwarded message):
?Dear Jack,
?  I am sending you a copy of the
?message that I received from Marlou.
?                     John
?{null line}

 Post, edit, display, destroy, help, etc.?
@post
 Message 1112677 has been posted.
```

When message 1112677 is retrieved and displayed by the recipient Jack (userID WRST), the message will appear as follows:

```
@display 1112677

 Message: 1112677, forwarded message: 1112573, 4 lines
 Posted: 2:57pm Thu Jan 29/87
 Subject: Message System Test
 To: Jack Black
 From: John Paul Brown

 Dear Jack,
    I am sending you a copy of the
 message that I received from Marlou.
                        John
```

```
Message: 1112573, 5 lines
Posted: 1:10pm Wed Jan 28/87
Subject: Test 1 2 3!
To: John Paul Brown
From: Mary Louise Smith

Dear John,
   I am testing out the MTS
Message System.  Do you read me?
Send me a reply as soon as possible!
                    Marlou
```

ARCHIVING MESSAGES

The ARCHIVE command may be used to save a copy of a mail message in an archive file.   The format of the ARCHIVE command is

ARCHIVE message [FILE=]file

where "message" specifies the message or messages that are to be saved and "file" specifies the file in which the message is to be saved.   "file" must be a line file or *PRINT*.   "message" is given in the form

message-number,...

If "message" is omitted, the active message is saved.   If "file" is omitted, the user will be prompted for the archive file unless the default archive file has been specified by the command

SET ARCHIVE=file

Archived messages are always appended to the *end* of the archive file.   A separator line is inserted between the messages.

An archived message is not automatically deleted from the user's mailbox.   This must be done explicitly by the DELETE command.   There are no facilities within the Message System for restoring archived messages to the user's mailbox once they have been deleted.

For example, the following command will save a copy of message 1112573 in the file MSGSAVE:

```
ARCHIVE 1112573 MSGSAVE
```

PERMITTING AND SHARING MAILBOXES

The PERMIT command is used to control access to the user's mailbox.   The format of the PERMIT command is

PERMIT access who

where "access" specifies the type of access to be given to the mailbox and "who" specifies who is to have the access.   "access" may be any one of the following:

```
{SEND | SEND–MAIL | SEND–DISPATCH}
FORWARD
OPEN
UNLIMITED
NONE
DEFAULT
```

"access" also may be given in the form of a parenthesized list, for example, (SEND,FORWARD).   "who" may be any one of the following:

```
'name'
ID=userID
PROJECT=projectID
OTHERS
ME
ALL
```

UNLIMITED specifies complete access to the mailbox; NONE specifies no access to the mailbox. DEFAULT specifies the default access and is equivalent to UNLIMITED ME and SEND OTHERS; this allows all other users to send mail to the mailbox, but not to open the mailbox (see below).

SEND access specifies who can send mail to the mailbox.   By default, each mailbox is permitted SEND OTHERS, which allows all other users to send mail to the mailbox.   If the user wishes to restrict the send access to only the single user WXYZ, the following command sequence may be issued:

```
PERMIT NONE ALL
PERMIT SEND 'John Paul Brown'
```

This first removes the access that all other users have and then grants send access to John Paul Brown. Another example would be to refuse access to another user so that he or she could not send you messages, e.g.,

```
PERMIT NONE 'John Paul Brown'
```

FORWARD access specifies who can forward mail to the mailbox.   For example, the command

```
PERMIT (SEND,FORWARD) ID=WDEF
```

permits the mailbox to receive forwarded mail from userID WDEF as well as messages sent from WDEF.   This command is used in conjunction with the command

```
SET FORWARD={mailbox | OFF}
```

to route mail automatically from the mailbox of one userID to the mailbox of another userID on the same system.   For example, the command

```
SET FORWARD=WABC
```

will route mail automatically to the mailbox of WABC (presuming that WABC has permitted its mailbox to receive forwarded mail from the user issuing the SET command). [Note that this type of automatic forwarding of messages is different from the forwarding of a single message by the FORWARD command described earlier in the section "Forwarding Messages." In that case, a new message was created by combining the forwarded message with additional comments.]

OPEN access specifies who can open the mailbox.   Opening a mailbox allows the user either to send messages from the mailbox or to retrieve messages sent to the mailbox.   Whenever the Message System is entered, by default the user automatically opens his or her own mailbox (the one associated with whatever name is currently set or with the userID, if no name is set).   However, it is permissible to open and use the mailbox of another user.   For example, user WABC may permit his or her own mailbox to be opened by user WDEF by issuing the command

```
PERMIT (SEND,OPEN) ID=WDEF
```

The PERMIT command is used in conjunction with the command

OPEN {mailbox | <u>DEFAULT</u>}

to open the mailbox of another userID for sending or receiving messages.   For example, userID WDEF may issue the command

```
OPEN WABC
```

to open the mailbox of WABC (which must be permitted to user WDEF).   Only one mailbox may be open at one time.

As a more comprehensive example, assume that a user has two userIDs, WABC and WDEF, wants to have all mail routed to the mailbox of WABC, and wants to use the mailbox of WABC for sending all messages, regardless of which userID he or she is currently signed on to.   This arrangement can be established by signing on to WABC and permitting the mailbox of WABC so that it can be opened by WDEF and can accept forwarded messages from WDEF, e.g.,

```
#sig WABC
#message
@permit (send,forward,open) id=WDEF
@display permit
 Permit status for mailbox WABC.
    Owner: unlimited
    Others: send
    Specific: (send,forward,open) WDEF
```

Next, the user must sign on to WDEF and issue the following command sequence:

```
#sig WDEF
#message
@set forward=WABC
@display forward
 Forward mailbox: WABC
@open WABC
```

The SET FORWARD=WABC command will automatically route all messages sent to WDEF to the mailbox of WABC.   The OPEN WABC command will automatically open the mailbox of WABC.   This will allow the user signed on to WDEF to send and retrieve messages using the mailbox of WABC instead of the mailbox of WDEF.   The SET FORWARD=WABC command need only be issued once; it will be effective for all future terminal sessions until disabled by the SET FORWARD=OFF.   The OPEN WABC command must be issued for each session.

For users who regularily use several userIDs, issuing OPEN commands in this way whenever a secondary userID is used would be tedious.   The next section describes how to use the $SET NAME command to enable the Message System to determine automatically which mailbox to open.

THE $SET NAME COMMAND

The MTS $SET NAME command may be used to identify the name of the user to MTS (and thus to the Message System).   This is useful for users who frequently use more than one userID and wish to do all their correspondence (using individual names) from a single mailbox.

The format of the $SET NAME command is

   $SET NAME={name | 'name'}

This command provides the user with a way to tell MTS his or her name so that the system may insert it into parts of the message rather than using the userID.   The name must have been previously enrolled in the User Directory database (see the section "The MTS User Directory" in this volume for information on registering names).   The primes are required with the $SET NAME command only if the name contains blanks.

The $SET NAME command may be given from any userID if the name has been given SET or PWSET permission by the owner of the name via User Directory.   If SET permission is given, password verification is not required; if PWSET permission is given, the user must enter the password for the name's primary userID (its owner).   See the section "The MTS User Directory" for details on giving SET and PWSET permission via User Directory.

If the $SET NAME command has been given, the Message System upon entry will open automatically the primary mailbox of the name specified.   By default, the primary mailbox, or ownerID, is the userID used when User Directory was initially run to enroll the name.   For example, if while signed on to userID WDEF (assuming SET permission was granted), the user gives the command

```
    $SET NAME='Marlou Smith'
```

the mailbox for userID WABC will be opened the next time the Message System is entered.   If the $SET NAME command is given from userID WGHI (assuming PWSET permission was granted), the prompting sequence will be as follows:

```
    $SET NAME='Marlou Smith'
    Enter password for userID WABC
    ?
```

The $SET NAME command is effective only for the current terminal session.   It must be reissued each time the user signs on, if mail is to be directed from the primary mailbox to an alternative mailbox. The user's sigfile may be used to issue this command automatically, if desired (sigfiles are described in *MTS Volume 1: The Michigan Terminal System*, Reference R1001).

The setting of the current name may be displayed by the MTS command

   $DISPLAY NAME

Note that the $SET NAME command will only work for accessing messages that are sent to individual names.   Messages that are sent to userIDs will not be affected.   The SET FORWARD command may be used to forward all messages from one mailbox to another mailbox.   This capability is described in the previous section.

NAME LIBRARIES

A name library is a private directory that contains a subset of alias names, group names, or remote names from the master user directory which may be used for sending messages.   Normally, the alias names are shortened forms of the primary names in the master directory, for example, first names.

The creation and management of name libraries is described in the section "The MTS User Directory" in this volume.

When a name library is used with the Message System, the MTS $SET NAMELIB command must be given (usually from a sigfile) to indicate that the name library is to be used instead of the master directory, e.g.,

```
$SET NAMELIB=WXYZ:STAFFDIR
```

The setting of the current name library may be displayed by the MTS command

```
$DISPLAY NAMELIB
```

After this is done, messages can be sent to either the name as registered in User Directory or its alias as given in the name library.   For example, if John is an alias for John Smith, a message can be sent by issuing the command

```
SEND TO 'John Smith'
```

or simply

```
SEND TO John
```

HISTORY MESSAGES

The Conversation Chain

The Message System maintains a chain for mail messages that provides a history of the conversation between the sender of the original message and each of the recipients.   Each message of this chain is called a history message.   At the head of the chain is the original message.   Each reply and each forwarded message is added to the chain.   For example, in the above conversation between Mary and John, the history-message chain would appear as follows:

```
┌─────────────────────┐
│ Message 1112573     │
│ Mary -> John        │
└─────────────────────┘
           │
           │
           ↓
┌─────────────────────┐
│ Message 1112629     │
│ John -> Mary        │
└─────────────────────┘
```
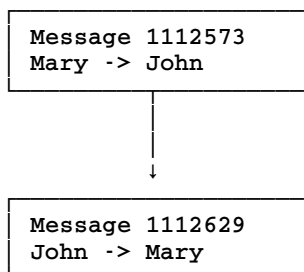
If Mary subsequently replies to John's reply and then John replies again to Mary, the chain will appear as follows:

```
┌─────────────────────┐
│ Message 1112573     │
│ Mary -> John        │
└─────────────────────┘
           │
           ↓
┌─────────────────────┐
│ Message 1112629     │
│ John -> Mary        │
└─────────────────────┘
           │
           ↓
┌─────────────────────┐
│ Message 1112640     │
│ Mary -> John        │
└─────────────────────┘
           │
           ↓
┌─────────────────────┐
│ Message 1112700     │
│ John -> Mary        │
└─────────────────────┘
```
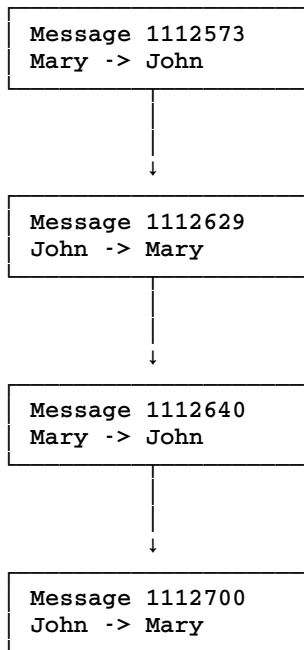
Each member of the conversation has access to the original message and all of the subsequent replies.   Normally when a message is retrieved or displayed, only the designated message is printed. However, by specifying the HISTORY command or the HISTORY option on the RETRIEVE or DISPLAY command, earlier messages may be retrieved.   For example, the command

```
HISTORY 2
```

will print the first two history messages for the active message, and the command

```
DISPLAY 1112700 HISTORY=2
```

will print message 1112700 and the first two history messages, 1112640 and 1112629.   By specifying FULL (which in this case is equivalent to n=3), the entire conversation may be printed, e.g.,

```
DISPLAY 1112700 HISTORY=FULL
```

If a message is sent to more than one recipient, several paths in the conversation chain may be created.   For example, if Mary had sent one message to John and Rob and both replied to Mary, the conversation chain would appear as follows:

```
+---------------------------+
| Message 1112573           |-------------+
| Mary -> John, Rob         |             |
+---------------------------+             |
              |                           |
              |                           |
              v                           v
+---------------------------+   +---------------------------+
| Message 1112629           |   | Message 1112632           |
| John -> Mary              |   | Rob -> Mary               |
+---------------------------+   +---------------------------+
```
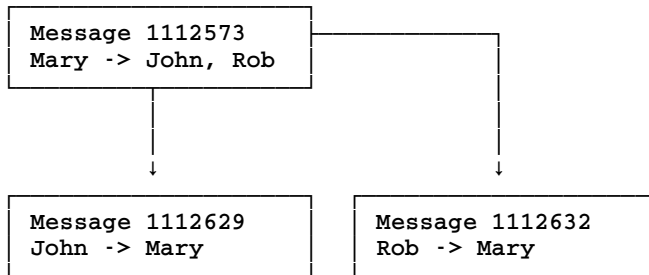
At this point, two separate conversations based on the same original message 1112573 may occur, one between Mary and John and one between Mary and Rob, e.g.,

```
+---------------------------+
| Message 1112573           |-------------+
| Mary -> John, Rob         |             |
+---------------------------+             |
              |                           |
              |                           |
              v                           v
+---------------------------+   +---------------------------+
| Message 1112629           |   | Message 1112632           |
| John -> Mary              |   | Rob -> Mary               |
+---------------------------+   +---------------------------+
              |                           |
              |                           |
              v                           v
+---------------------------+   +---------------------------+
| Message 1112640           |   | Message 1112644           |
| Mary -> John              |   | Mary - > Rob              |
+---------------------------+   +---------------------------+
              |
              |
              v
+---------------------------+
| Message 1112700           |
| John -> Mary              |
+---------------------------+
```
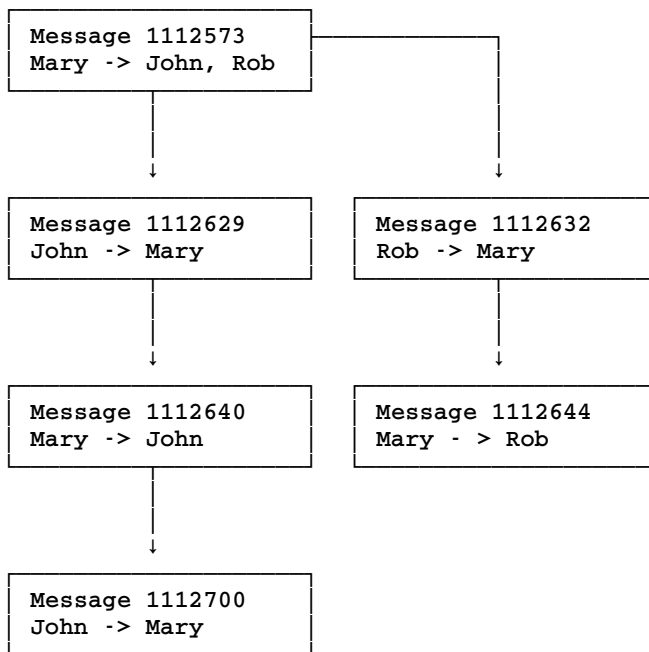
Since these are independent conversations, John will have access only to the messages 1112573, 1112629, 1112640, and 1112700, while Rob will have access to messages 1112573, 1112632, and 1112644. Mary, who is a member of both conversations, will have access to all of the messages.

Mary, John, and Rob may create a multiparty conversation whereby each member has access to all of the messages and replies by specifying the TO ALLRECIPIENTS (or TO ALL) option when each of them generates a reply to a message in the conversation.

Another line in the conversation chain is created when a message is forwarded by the FORWARD command. For example, returning to the first example, assume that Mary's message 1112573 is forwarded by John to Jack along with the accompanying message 1112677, thus in effect creating a message from John to Jack which contains Mary's message as a history message. This will create the following conversation chain:

```
┌─────────────────────┐
│ Message 1112573     ├──────────────┐
│ Mary -> John        │              │
└─────────────────────┘              │
           ╎                         │
           ↓                         ↓
┌─────────────────────┐    ┌─────────────────────┐
│ Message 1112629     │    │ Message 1112677     │
│ John -> Mary        │    │ John -> Jack        │
└─────────────────────┘    └─────────────────────┘
           ╎
           ↓
┌─────────────────────┐
│ Message 1112640     │
│ Mary -> John        │
└─────────────────────┘
           ╎
           ↓
┌─────────────────────┐
│ Message 1112700     │
│ John -> Mary        │
└─────────────────────┘
```
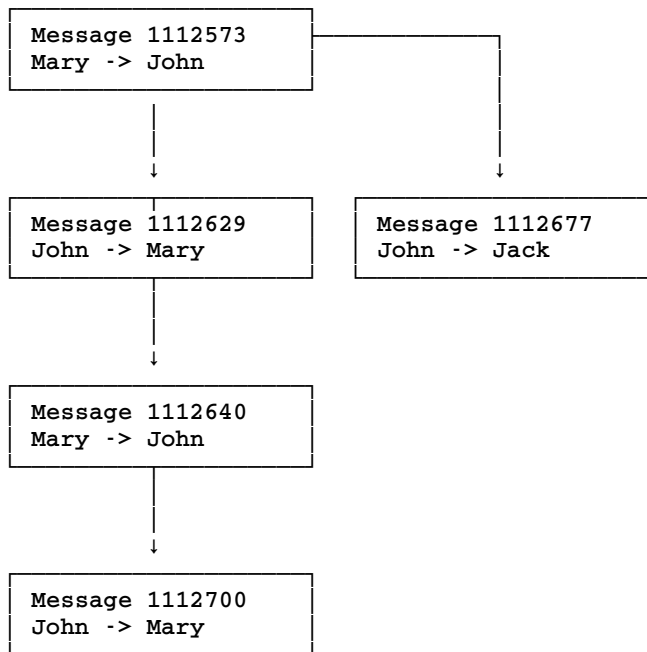
At this point, Jack has become a member of the conversation and may display or reply to any message in his part of the conversation chain.   For example, he could reply to John's message 1112677 by issuing the command

```
REPLY 1112677
```

which would create the following conversation chain:

```
┌─────────────────────┐
│ Message 1112573     │────────────────┐
│ Mary -> John        │                │
└─────────────────────┘                │
           │                           │
           │                           │
           ↓                           ↓
┌─────────────────────┐   ┌─────────────────────┐
│ Message 1112629     │   │ Message 1112677     │
│ John -> Mary        │   │ John -> Jack        │
└─────────────────────┘   └─────────────────────┘
           │                           │
           │                           │
           ↓                           ↓
┌─────────────────────┐   ┌─────────────────────┐
│ Message 1112640     │   │ Message 1112683     │
│ Mary -> John        │   │ Jack - > John       │
└─────────────────────┘   └─────────────────────┘
           │
           │
           ↓
┌─────────────────────┐
│ Message 1112700     │
│ John -> Mary        │
└─────────────────────┘
```
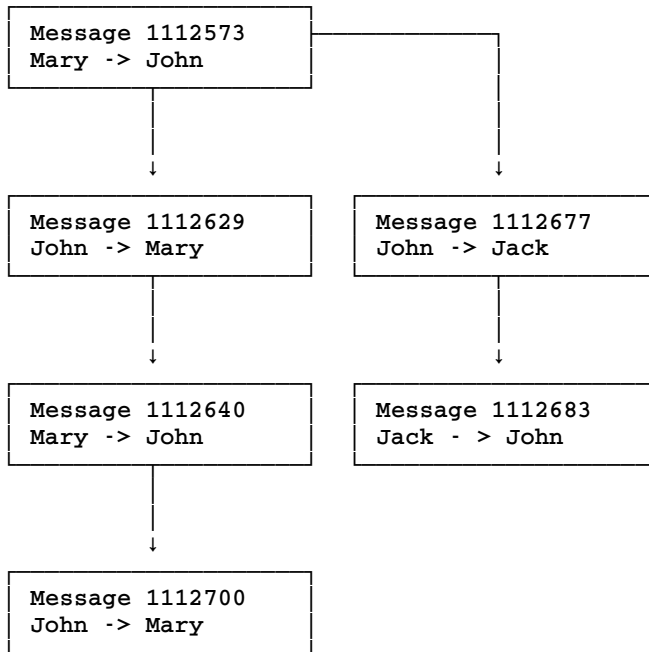
Also, he could reply directly to Mary's message 1112573 by issuing the command

`REPLY 1112573`

which would create the following conversation chain:

```
┌─────────────────────┐
│ Message 1112573     │──────────────────────────────────────┐
│ Mary -> John        │                                      │
└─────────────────────┘                                      │
           │                           │                     │
           │                           │                     │
           ↓                           ↓                     ↓
┌─────────────────────┐   ┌─────────────────────┐   ┌─────────────────────┐
│ Message 1112629     │   │ Message 1112677     │   │ Message 1112684     │
│ John -> Mary        │   │ John -> Jack        │   │ Jack -> Mary        │
└─────────────────────┘   └─────────────────────┘   └─────────────────────┘
           │                           │
           │                           │
           ↓                           ↓
┌─────────────────────┐   ┌─────────────────────┐
│ Message 1112640     │   │ Message 1112683     │
│ Mary -> John        │   │ Jack - > John       │
└─────────────────────┘   └─────────────────────┘
           │
           │
           ↓
┌─────────────────────┐
│ Message 1112700     │
│ John -> Mary        │
└─────────────────────┘
```
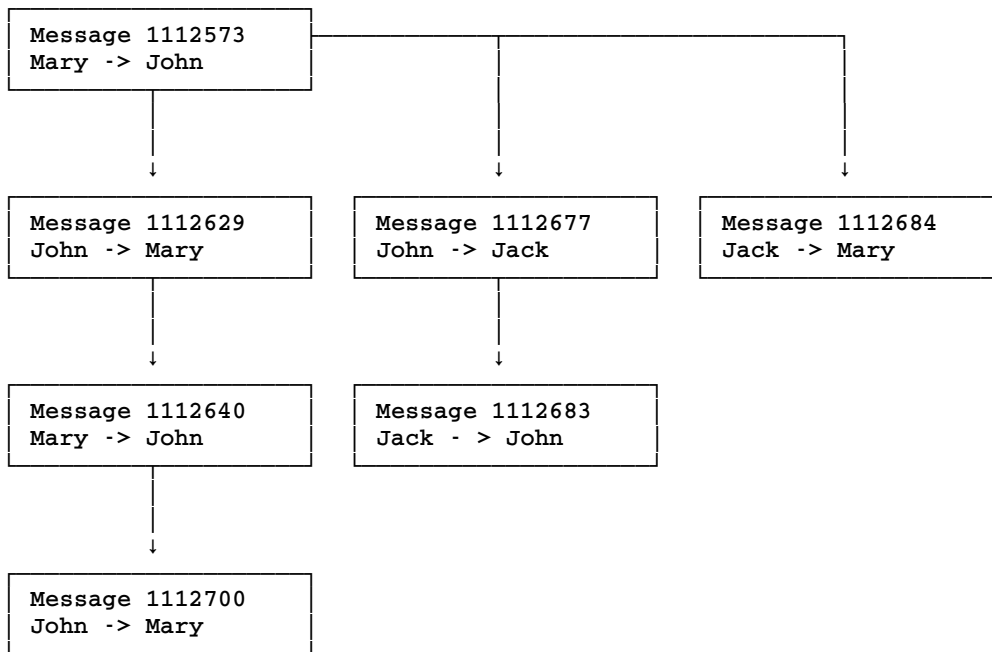
Each line of the chain is treated as an independent conversation. Each conversation may be displayed only by members of that particular conversation. Since the chain is a simple linked-list structure, the displaying of the history of the conversation must be done in reverse chronological order, that is, latest message first. In the last example, John is a member of two conversations (those terminating with messages 1112700 and 112683), Jack is a member of two conversations (those terminating with messages 1112683 and 1112684), and Mary is a member of two conversations (those terminating with messages 1112700 and 1112684). Although Mary's original message 1112573 is a history message to the conversation between John and Jack, she is not a member of that conversation and therefore cannot access messages 1112777 and 1112683.

Removing Messages

A mail message is purged from the Message System in two stages. The message first must be deleted by all parties to the conversation. After the message is deleted, all subsequent messages in the conversation must also be deleted so that the deleted message is not required as a history message. The message is then purged from the Message System by one of the following methods, whichever comes first:

(1)   The message is deleted by all of the recipients for at least 42 hours.

(2)   The message is destroyed by the sender and deleted by all recipients who have already seen it.

(3)   The message expires by passing its expiration date and time (by default, messages expire 31 days after they are sent).

(4)   The message is sent to another system, in which case it is purged within 24 hours after being exported to the other system. However, if the message has local recipients, it is still available to them and the sender until any of the above conditions are met.

The simplest case for the removal of a message is when the message is deleted by all of the recipients via the DELETE command. In the previous example where Mary was sending message 1112573 to both John and Rob, the message would be discarded if both John and Rob issued the command

```
DELETE 1112573
```

without replying to Mary. Since message 1112573 would not be required as a history message, it would eventually be removed from the Message System. In this case, Mary would also lose access to the message. If Mary wanted to retain a permanent copy, she should archive the message by using the ARCHIVE command.

A deleted message remains available to a recipient for 42 hours after it is deleted by all recipients (or longer if it is a history message to which that user has access). During this period, deleted messages can be recovered by issuing the UNDELETE or RETRIEVE commands. For example, message 1112573 can be recovered by issuing the command

```
UNDELETE 1112573
```

while all deleted but unpurged messages can be recovered by issuing the command

```
RETRIEVE DELETED
```

When a message has expired or has been deleted by all recipients for at least 48 hours and is no longer required as a history message, it automatically will be purged from the system message file.

When a message is destroyed by the sender, one of two actions will be taken:

(1)   If the message has not been seen by any of the recipients, it will be purged immediately from the system.

(2)   If the message has been seen, it will remain accessible to only those recipients to whom it has been delivered.

SENDING DISPATCHES

The DISPATCH command is used to send dispatches.   The format of the DISPATCH command is

DISPATCH options

where "options" may be one or more of the following:

TO recipient,...
TEXT='message-text'
INPUT=filename
CONVERSE

A dispatch is an immediate message that can be sent to a recipient on the same or another system. If the recipient is signed on, the message is displayed on the recipient's terminal.   If the recipient is not signed on or has disabled the reception of dispatches, the dispatch is discarded.   In either case, the sender is informed of the disposition of the message.

The TO, TEXT, and INPUT options are the same as for the SEND command.   If these options are omitted, the sender is prompted for the recipients and the text of the dispatch.   For example,

```
@dispatch
 To:
?John Brown
 Text:
?This is a dispatch test. Do you read me!
?                 Marlou
?(null line)

 Post, edit, display, destroy, help, etc.?
@post
 Dispatch sent successfully.
```

After the dispatch is composed, the sender is prompted whether to post the message.   The responses to the prompt are the same as for mail messages.   After the dispatch is posted, the sender is informed whether the dispatch was successfully sent (printed on the recipient's terminal).   Dispatches are printed in the form

```
%UM@AE37 Conversation to Mary Louise Smith, from John Paul Brown, 2:51pm
%UM@AE37 Subject: Message received
%UM@AE37 Read you loud and clear!
%UM@AE37           John
```

If the recipient was not signed on, a message of the form

```
User John Brown is not signed on.
```

is printed after the sender is prompted for the recipient.   If the recipient is signed on, but the message cannot be immediately delivered because the recipient is performing a terminal operation that cannot be interrupted (such as editing in visual mode in the MTS File Editor), the dispatch is left pending and a message of the form

```
Dispatch to John Brown pending.
```

is printed.   The dispatch will be delivered as soon as the terminal operation is completed.

If a long dispatch is to be sent, the sender should send a short note (e.g., "got a minute") first to ensure that the recipient does not sign off while the main dispatch is being composed.

The recipient may disable the reception of dispatches by issuing the MTS command

$SET DISPATCHES=OFF

In this case, a message of the form

```
John Brown has set DISPATCHES=OFF.
```

is printed on the sender's terminal.   Dispatches may also be suppressed from selected users by using the PERMIT command.   For example, user John Brown may issue the command

```
PERMIT SEND-MAIL 'Marlou Smith'
```

to prohibit Marlou Smith from sending dispatches to him (while still allowing mail messages), or he may issue the command

```
PERMIT NONE 'Marlou Smith'
```

to prohibit her from sending both mail and dispatch messages to him.

A dispatch message is limited to 7 lines with a total of 400 characters.   A dispatch will be discarded if an attention interrupt is given while it is being composed.

The CONVERSATION command or the CONVERSE option on the DISPATCH command may be used to engage in a series of dispatch messages (a "conversation") with a recipient or group of recipients.   The CONVERSATION command is given in the form

<u>CONVER</u>SATION options

where "options" are the same options as for the DISPATCH command.   After each dispatch is sent, the sender will be prompted for further messages in the conversation.   The conversation may be terminated by entering a null line, an end-of-file, or an attention interrupt.

REMOTE MESSAGES

In addition to exchanging messages with other MTS users on the same system at the University of Michigan, the Message System can be used to send messages to and receive messages from users at thousands of computing installations in the United States, Canada, England, continental Europe, Japan, Australia, and other countries.

Sending Messages to Remote Sites

The only differences between sending messages to MTS users at the University of Michigan (UofM) and sending messages to other users located at remote sites are

(1)   the need to append a site name to the individual's name or userID, and

(2)   the need to carefully specify both individual and site names.

For example, to send a message to another University of Michigan MTS user on the same system, the sender can issue the command

```
SEND TO 'John Brown'
```

or

```
SEND TO John_Brown
```

However, to send a message to another University of Michigan MTS user on another system, the sender can issue the command

```
SEND TO Peter_Grey@UB
```

To send a message to a user at the University of British Columbia, the sender can issue the command

```
SEND TO Mary_Jones@UBC
```

or, to send a message to Professor J. Smith of the Stanford University Physics Department, the sender can issue the command

```
SEND TO JSmith@Physics.Stanford.edu
```

Note that, unlike messages sent to users on the same computer, remote messages must not include primes (single quotes) or quotation marks (double quotes). All blank spaces in the name must be replaced with underscore (_) characters.

Messages bound for remote sites may not be transmitted immediately. Instead, they are sometimes queued and transmitted later. Because there is no actual network link between MTS at the UofM and the remote site when the message is being composed, there is no feasible way for the Message System to check remote names to make sure that they have been specified correctly. The interactive verification and possible correction of names MTS users have come to expect are not possible for messages directed to remote sites. This, combined with the fact that the message systems in use at the various remote sites often use very different naming conventions, means that extra care (case, punctuation, and spelling) must be taken when specifying remote names.

Some remote sites use computer user identification numbers or initials rather than names.   Others require an exact match before a message is accepted, for example JSmith rather than "John Smith". For some sites case is important, while for others it is not.   Until better standards are developed and adopted in this area, the only recourse is to find out from the people with whom you wish to communicate what their local conventions are.   To learn how often MTS exchanges mail with various other computers and when the last exchanges took place, enter the command

     $RUN *NETMAILSCHEDULE

Most Internet sites have a person called the "postmaster" whose job it is to oversee remote mail.   If you are unsure exactly how to specify someone's name according to the conventions of a remote system, try sending a short message to the postmaster on that system, including as much information as possible about the person you would like to address a message to (name, title, and department), and asking for the correct identifier to use for the purpose of sending network mail.   The Internet format for the postmaster address is

     SEND TO POSTMASTER@site

Help can also be requested from the local U–M postmaster by issuing the command

     SEND TO POSTMASTER

BITNET sites frequently have postmasters; however, the addresses vary.

Some general guidelines for addressing remote mail to other sites are:

(1)   For MTS sites, simply prefix the site name with an at-sign "@", e.g., Pat_Jones@UM

(2)   For   Internet   sites,   use   the   full   Internet   domain-style   address,   e.g.,
        smith@cogsci.berkeley.edu

(3)   For BITNET sites, use the standard BITNET address, suffixed with .BITNET, e.g.,
        RJMXITRY@CORNELL.BITNET

A remote mail address must include the recipient's name or userID in the exact form used by his or her home system.   If you have trouble sending a message, ask your correspondent to send one to you.   You can then use REPLY, or SEND a message to the address in the "From:" field.

Incorrectly specified names usually result in a return message that includes an error comment (after a delay of from a few minutes to perhaps several days).   However, this is entirely dependent on the message system in use at the remote site and so is not guaranteed.

Examples:

```
#message
 Mailbox WABC: 1 new, 4 old messages
@send
 Subject:
?Remote Message System Test
 To:
?Mary_Jones@UBC
 Text:
?Hi Mary, I am testing out the remote message facility.
```

```
?Do you read me!
?       Marlou
?{null line}

 Post, edit, display, destroy, help, etc.?
@post
 Message 1202260 has been posted.
@stop

#message
@send To John_Williams@UBC CC Billy_Bob
 Subject:
?A meeting next week
 Text:
?John,
?  When you are in Ann Arbor next week I'd like to sit down
?with you and Billy to talk about our common problems.
?Would 2 pm Friday in my office be OK?
?  Harold
?{null line}

 Post, edit, display, destroy, help, etc.?
@post
 Message 1202265 has been posted.
@stop
```

The DISPLAY NETINFO command will give information about the transmission of remote messages, e.g.,

```
DISPLAY 1202265 NETINFO
```

Receiving Messages from Remote Sites

Receiving messages from remote sites is even simpler than sending remote messages. Once the person at a remote site who wants to send you a message knows your name as registered in MTS User Directory and the site name necessary to send a message from his or her local message system to one of the UofM MTS systems, all you need to do is sit back and wait for the messages to arrive. Remote messages are processed in the same manner as regular incoming messages (Reply, Delete, Archive, ...). The Internet site names for the UofM MTS systems are

```
user@UM.CC.UMICH.EDU
user@UB.CC.UMICH.EDU
```

You must replace "user" with your name exactly as registered in User Directory, replacing all blanks with underscore (_) characters and omitting any parenthesized nicknames. If an attempt to send you a message fails, use the Message System to SEND TO POSTMASTER for assistance.

Note: If you are sending mail from UM-MTS to UB-MTS or vice versa, you do not need to use the above addresses. Instead, you may use the forms

```
user@UM
user@UB
```

Replying to a message from a remote site will automatically result in a new message routed to that site, but no history messages are attached to replies sent to or received from remote sites. Forwarding (rather than replying) the received message back to the sender will send both your reply and the

original text back to the originator.   If remote messages are to be retrieved by name (RETRIEVE OLD FROM Mary_Jones@MTSG.UBC.CA), the full name including the formal site name must be given.

Examples:

```
#message
 Mailbox WABC: 1 new message
@retrieve
 1 message retrieved.

 Message: 1202320, 1 line
 Posted: 8:32pm EDT, Mon Jan 12/87, imported: 9:00pm EDT,
-Mon Jan 12/87

 To: Mary Louise Smith
 From: Mary_Jones@MTSG.UBC.CA

 Read you loud and clear!

 Next, history, delete, reply, help, etc.?
@stop

#message
 Mailbox WGHI: 1 new message
@retrieve
 1 message retrieved.

 Message: 1202412, 1 line
 Posted: 1:16pm EDT, Tue Jan 13/87, imported: 1:30pm EDT,
-Tue Jan 13/87

 Subject: A Test Message from Wisconsin
 To: Jack Black
 From: Jones@WISCVM.BITNET

 Hi Jack,
   How's this as an example from my Wisconsin account?
       Jonesy.

 Next, history, delete, reply, help, etc.?
@reply
 Subject: A Test Message from Wisconsin
 New subject:
?A note of thanks!
 Text:
?Jonesy,
?  Thanks for the example message.
?    Jack
?{null line}

 Post, edit, display, destroy, help, etc.?
@post
 Message 1202418 has been posted.
  ...back to message 1202412 from Jones@WISCVM.BITNET.

 Next, history, delete, reply, help, etc.?
@delete
@Message 1202418 has been deleted.
@stop
```

There is a Forum computer conference under MTS at the UofM called NETWORK–MAIL that interested users may join to keep abreast of recent developments, changes, and future plans for electronic mail. The conference also provides a question and answer service to assist in the use of remote messages and network mail and which may be used to report problems. See the section "Introduction to Forum" in this volume for further details.

The NETINFO option can be used with the Message System ARCHIVE, DISPLAY, and RETRIEVE commands to obtain information specific to remote messages. For example, the NETINFO option would display the following information for the two example incoming messages shown above:

```
#message
@Mailbox WABC: 0 new, 2 old messages
@display 1202320 Netinfo

 Message: 1202320
 Network information:
    Received: from MTSG.UBC.CA by UM.CC.UMICH.EDU via MTS-Net;
-Mon, 12 Jan 87 21:00:44 EDT
    Message-ID: <48036@MTSG.UBC.CA>

@display 1202412 Netinfo

 Message: 1202412
 Network information:
    Received: from UMIX.CC.UMICH.EDU by UM.CC.UMICH.EDU
-via MTS-Net; Mon, 13 Jan 87 13:30:51 EDT
    Message-ID:  <840513171641.294834@UMIX.CC.UMICH.EDU>

@stop
```

To simplify the use of remote mail, a registered remote name may be set on any MTS system. Any messages sent to such a name will be automatically forwarded to the specified remote site. For example, a registered remote name may be set on the UB system to automatically forward messages to the same name on the UM system. You can also add remote names to private name libraries. See the description of remote mail names in the section "The MTS User Directory."

Sending and Receiving Network Dispatches

MTS users can send network (remote) dispatches between UM-MTS and UB-MTS and other campus hosts, as well as to colleagues signed on at BITNET sites around the world.

In order to send a network dispatch, you will need to know your correspondent's BITNET address. This is the same as the address you would use if you were sending a normal piece of electronic mail to a BITNET site. The BITNET address on UM-MTS is:

    USERccid@UMICHUM

and the address on UB-MTS is:

    USERccid@UMICHUB

For example, if your userID on UM is Z456 and you wanted to start a conversation with the owner of userID A123 on UB, you would enter on one line:

```
$MESSAGE CONVERSATION TO USERA123@UMICHUB TEXT='Do you have a copy of
```

```
        those lecture notes?' OK
```

To reply, your correspondent would enter:

```
    $MESSAGE CONVERSATION TO USERZ456@UMICHUM TEXT='Sure do' OK
```

You can also send dispatches to other hosts on BITNET. Suppose user Z456 wants to converse with a friend who is logged on as the ID JOEBOB at the City University of New York:

```
    $MESSAGE CONVERSATION TO JOEBOB@CUNYVM TEXT='Did you talk to Susan?' OK
```

This command sends the dispatch through BITNET to the JOEBOB logon at CUNYVM, the host running the VM operating system at CUNY. CUNYVM will automatically return a dispatch notifying the sender if JOEBOB is not logged on.

Network dispatches work very much like normal MTS dispatches. Both can be disabled by issuing the command:

    $SET DISPATCHES=OFF

and re-enabled by typing:

    $SET DISPATCHES=ON

As noted above, it is now possible to receive dispatches arriving through the network from users on other hosts. You can also receive dispatches generated by system software, usually programs that support BITNET or BITNET mailers. (System-software-generated dispatches currently do not include broadcast messages, such as those that appear on your workstation screen before a system shutdown.) Since dispatches can now arrive from different sources, new options have been added to $SET, $DISPLAY, and GUINFO/CUINFO, the user subroutine-interface to $SET and $DISPLAY options. The new options allow you to selectively disable, or filter, dispatches by origin and sender. The dispatches will still arrive at your host, but will only be shown to you if you choose to see them.

Five switches are available to filter dispatches by sender (user or system) or origin (local or network). They are:

    USER
    SYSTEM
    LOCAL
    NETWORK
    VIEW

You can change these switches by using options on the $SET command:

    $SET DISPATCHES(USER)=ON

This command allows you to see dispatches sent from another user, whether the user is on your host or another host. The command:

    $SET DISPATCHES(NETWORK)=OFF

disables dispatches arriving from other hosts through the network. The VIEW option turns dispatch

viewing on or off as a whole, while preserving the settings of the other four switches.   For example, you can disable dispatches entirely with the command $SET DISPATCHES(VIEW)=OFF and re-enable them with $SET DISPATCHES(VIEW)=ON without changing the settings of the other switches.

You can see the settings for each of these switches by entering the command:

$DISPLAY DISPATCHES

which produces output such as

```
Dispatches(view,local,user)=on,dispatches(network,system)=on
```

You can set all of the options to OFF by entering the command:

$SET DISPATCHES(ALL)=OFF

The default setting of all these switches is ON.

Filtering BITNET and System Dispatches

You may want to disable system-generated dispatches like those in the first example below; dispatches like the one in the second example should probably not be disabled.

The ability to disable system-software-generated dispatches can be important for users who often transfer files via BITNET.   Unlike Internet file-transfer methods such as FTP, BITNET transfers files by sending them over dedicated lines between hosts, one host at a time, until the files reach the destination host.   For each host that handles a file, a BITNET dispatch is returned to the file's originator, indicating that the file has been transferred successfully to the next host.   These dispatches are known in the BITNET world as "point-to-point confirmations."

For example, the owner of userID 1ABC wants to send a file to logon ID FARLEY at the YALEVM host.   After making network and system dispatches visible with:

```
$SET DISPATCHES(NETWORK,SYSTEM)=ON
```

the file is sent via BITNET file transfer, and the following dispatches are received:

```
#control *export* destination=farley@YALEVM
#*EXPORT* assigned job number 228440
#copy cmdmaclib *export*
#release *export*
#*EXPORT* RM228440 released DELIVERY=UNYN RATE=DEFERRED
   DEST=FARLEY@YALEVM
#
%UM@AX10: @ From @UMICHUM: SYOP.2023228 Job RM228440 origin id 8440
   sent from USER1ABC@UMICHUM to FARLEY@YALEVM
%UM@AX10: @ From @UMICHRLY: DMTNCM147I Sent file 4767 (8440) on link
   WAYNEST1 to YALEVM FARLEY
%UM@AX10: @ From @WAYNEST1: DMTNTR147I Sent file 4423 (8440) on link
   UOFT01 to YALEVM (FARLEY)
%UM@AX10: @ From @UOFT01: Sent file 7621 (8440) on link OHSTVMA TO
   YALEVM FARLEY
%UM@AX10: @ From @OHSTVMA: Sent file 4316 (8440) on link PUNFSV2 TO
   YALEVM(FARLEY)
%UM@AX10: @ From @PUNFSV2: Sent file 2037 (8440) on link YALEVM TO
```

```
        YALEVM(FARLEY)
    #
```

While these messages can be helpful for tracking network problems, they are usually merely annoying. In some cases you might receive up to 12 dispatches for every file transferred, depending on the distance between the destination site and the originating site.   You can disable such dispatches with a $SET DISPATCHES(SYSTEM)=OFF command.

   A more useful system-generated message you might encounter is this one:

```
    #message dispatch to USER1ABC@UMICHUB text='What's the assignment?' ok
     Dispatch sent successfully.
    #
    %UM@AX10: @ From @UMICHUB: MSGL.2029002 USER1ABC is not signed on.
    #
```

Notice that software-generated dispatches are signified by the "@UMICHUB".   The at-sign is not preceded by a userID or logon ID.

   By disabling system-generated dispatches to stop the point-to-point file-transfer confirmation messages, you will also disable messages like the one above.   It is also possible to disable system-generated dispatches from other hosts with a $SET DISPATCHES(NETWORK)=OFF command.   However, this means that you will be excluding dispatches from users at other hosts as well.

   For further information on BITNET messages and file-transferring, see *BITNET in MTS*, Reference R1039.

MESSAGE SYSTEM COMMANDS

The following notation conventions are used in the prototypes of the commands:

lowercase	represents a generic type which is to be replaced by an item supplied by the user.
uppercase	indicates material to be repeated verbatim in the command.
brackets [ ]	indicate that material within the brackets is optional.
braces {	}	indicate that the material within the braces represents choices, from which exactly one must be selected. The choices are separated by vertical bars.
ellipsis ...	indicates that the preceding syntactic unit may be repeated.
underlining	indicates the minimum unambiguous form of the command or parameter. Longer abbreviations are accepted.

The following pages give a complete summary of the commands in the Message System command language.

Summary of Command Prototypes

APPEND [message] [SEND-command-options]

message	message-number
	{ACTIVE	CURRENT	PREVIOUS	NEXT}

ARCHIVE [message] [[FILE=]{filename | *PRINT*}] [option ...]

message	[MESSAGES=]message-number,...
	{ACTIVE	CURRENT	PREVIOUS	NEXT}
option	HISTORY={n	FULL}
	NETINFO

{COMMENT | *} [text]

CONVERSATION [option ...]

option	[NOT]TO recipient
	TEXT='message-text'
	INPUT=FDname
	SUBJECT={'message-subject'	NONE}
	{EDIT	NOEDIT}
	OK
	ALLSIGNONS
recipient	(same as SEND command)

CURRENT [DISPLAY-command-options]

DELETE [message]

message	[MESSAGES=]message-number,...
	{ACTIVE	CURRENT	PREVIOUS	NEXT}

DESTROY [message]

    message   [MESSAGES=]message-number,...
                    {ACTIVE | CURRENT | PREVIOUS | NEXT}

DISPATCH [option ...]

    option   [NOT]TO recipient
                    TEXT='message-text'
                    INPUT=FDname
                    SUBJECT={'message-subject' | NONE}
                    {EDIT | NOEDIT}
                    OK
                    CONVERSE
                    ALLSIGNONS
    recipient   (same as SEND command)

DISPLAY [message] [item ...] [format ...] [OUTPUT=FDname]

    message   message-number
                    {ACTIVE | CURRENT | PREVIOUS | NEXT}
    item   {HEADER | SUMMARY | FULL}
                    CHARACTERS
                    DATESENT
                    EXPIRES
                    HOLDUNTIL
                    LINES
                    NETINFO
                    RECIPIENTS
                    REPLYTO
                    SENDER
                    STATUS
                    SUBJECT
                    TEXT
                    TYPE
    format   {NUMBERED | UNNUMBERED}
                    {DELETE | NODELETE}
                    HISTORY={n | FULL}

DISPLAY [status ...] [OUTPUT=FDname]

    status   {MESSAGES | MSGS | INCOMING | OUTGOING}
                    FORWARD
                    PERMIT
                    RESULT
                    MAILBOX
                    MESSAGEFILE
                    ARCHIVE
                    AUTOEDIT
                    AUTOHELP
                    AUTOPROMPT
                    HISTORY

<div style="margin-left:2em;">
INTRODUCTION
NAMEVERIFY
NOTICE
PROMPTSUBJECT
REVERSEORDER
</div>

EDIT [message-number] [edit-command]

EXPLAIN [{command | term}]

FIND {[NAME=]'name' | ID=userID}

FORWARD [message] [SEND-command-options]

message	message-number
	{ACTIVE	CURRENT	PREVIOUS	NEXT}

HELP [{command | term}]

HISTORY {n | FULL} [OUTPUT=FDname]

MCMD [MTS-command]

MODIFY [message] [SEND-command-options]

message	message-number
	{ACTIVE	CURRENT	PREVIOUS	NEXT}

MTS [MTS-command]

NEXT [DISPLAY-command-options]

OPEN {[MAILBOX=]mailbox | DEFAULT}

PERMIT [access] [who]

access	{SEND	SEND–MAIL	SEND–DISPATCH}
	FORWARD
	OPEN
	UNLIMITED
	NONE
	DEFAULT
who	[NAME=]'name'
	ID=userID
	PROJECT=projectID
	OTHERS
	ALL
	ME

POST

<u>PREV</u>IOUS [DISPLAY-command-options]

<u>REP</u>LY [message] [option ...]

message	message-number	
	{<u>ACTIVE</u> | <u>CURRENT</u> | <u>PRE</u>VIOUS | <u>NEXT</u>}	
option	[<u>NOT</u>]TO recipient,...	
	TO <u>ALL</u>RECIPIENTS	
	[<u>NOT</u>]CC recipient,...	
	[NOT]BCC recipient,...	
	REPLYTO recipient,...	
	TEXT='message-text'	
	<u>I</u>NPUT=FDname	
	<u>SU</u>BJECT={'message-subject' | NONE}	
	<u>EX</u>PIRE={date | 'date'}	
	<u>H</u>OLDUNTIL={date | 'date'}	
	{<u>ED</u>IT | <u>NO</u>EDIT}	
	{<u>AP</u>PEND | <u>NO</u>APPEND}	
	<u>OK</u>	

<u>RE</u>TRIEVE [message ...] [item ...] [format ...] [<u>O</u>UTPUT=FDname]

message	[<u>M</u>ESSAGES=]message-number,...
	[<u>N</u>OT]TO recipient,...
	[NOT]FROM sender,...
	{<u>MAIL</u> | <u>SIGNON</u>MESSAGES}
	{<u>NEW</u> | <u>OLD</u> | <u>NEWANDOLD</u>}
	{<u>INCOMING</u> | <u>OUTG</u>OING}
	<u>HELD</u>
	DELETED
item	{<u>H</u>EADER | <u>SUM</u>MARY | <u>FULL</u>}
	<u>CH</u>ARACTERS
	<u>D</u>ATESENT
	<u>EX</u>PIRES
	<u>H</u>OLDUNTIL
	<u>LI</u>NES
	<u>N</u>ETINFO
	<u>R</u>ECIPIENTS
	<u>RE</u>PLYTO
	<u>SE</u>NDER
	<u>ST</u>ATUS
	<u>SU</u>BJECT
	<u>T</u>EXT
	<u>TY</u>PE
format	{<u>DISPLAYFIRST</u> | DISPLAY<u>ALL</u> | <u>NO</u>DISPLAY}
	{<u>FORWARD</u>ORDER | <u>REVERSE</u>ORDER}
	{<u>N</u>UMBERED | <u>UNN</u>UMBERED}
	{<u>DEL</u>ETE | <u>NOD</u>ELETE}
	<u>H</u>ISTORY={n | <u>FULL</u>}

<u>RETU</u>RN [MTS-command]

SEND [{MAIL | DISPATCH}] [option ...]

option	[NOT]TO recipient,...
	[NOT]CC recipient,...
	[NOT]BCC recipient,...
	REPLYTO recipient,...
	TEXT='message-text'
	INPUT=FDname
	SUBJECT={'message-subject'	NONE}
	EXPIRE={date	'date'}
	HOLDUNTIL={date	'date'}
	{EDIT	NOEDIT}
	CONVERSE
	ALLSIGNONS
	OK
recipient	[NAME=]'name'
	ID=userID
	ID=userID-userID
	PROJECT={projectID	projectID(userID-userID)}
	ME
	TASKNO=task-number
	DEVICE=device-name
	OPERATOR
	LIST=FDname

SET option ...

option	ARCHIVE={filename	OFF}
	AUTOEDIT={ON	OFF}
	AUTOHELP={ON	OFF}
	AUTOPROMPT={ON	OFF}
	ECHO={ON	OFF	MTS}
	FORWARD={mailbox	OFF}
	HISTORY={n	FULL}
	INPUT=FDname
	INTRODUCTION={ON	OFF}
	NAMEVERIFY={ON	OFF}
	NOTICE={'notice-message'	OFF}
	OUTPUT=FDname
	PROMPTSUBJECT={ON	OFF}
	REVERSEORDER={ON	OFF}
	TERSE={ON	OFF}
	WIDTH=terminal-width

STOP

UNDELETE [message]

message	[MESSAGES=]message-number,...
	{ACTIVE	CURRENT	PREVIOUS	NEXT}

APPEND

Message Command Description

Purpose: To append text to a message.

Prototype: APPEND [message] [options]

Action: The APPEND command may be used to append text to a message.   "message"
                    may be:

> message-number
> {ACTIVE | CURRENT | PREVIOUS | NEXT}

If the "message" parameter is omitted, the text is appended to the active
message (the last message processed by the Message System).

The APPEND command is equivalent to the MODIFY APPEND command.
The following MODIFY command options are available with the APPEND
command:

> TEXT='message-text'
> INPUT=FDname
> EXPIRE={date | 'date'}
> HOLDUNTIL={date | 'date'}
> SUBJECT={'message-subject' | NONE}
> [NOT]TO recipient,...
> {EDIT | NOEDIT}
> OK

See the description of the MODIFY command for details of these options.

The text to be appended to the message may be given on the command line as a
single line of text using the TEXT option or may be read from another file using
the INPUT option.   If the text is not supplied on the command line or from
another file, conversational users will be prompted to enter the text; batch users
will get an error message.   Lines of text may be entered until the message is
terminated with an end-of-file or a null input line.

Only a sender may append text to a message.   After the modifications have
been made, the user will be prompted to send the revised message (unless the
OK option is given, in which case it is sent without prompting).

ARCHIVE

Message Command Description

Purpose: To archive a mail message.

Prototype: ARCHIVE [message] [[FILE=]{filename | *PRINT*}] [NETINFO]
                        [HISTORY={n | FULL}]

Action: The ARCHIVE command archives the specified message or messages.   A copy
                    of each message is appended to the end of the archive file.   A separator line is
                    inserted between the messages.   "message" may be:

                        [MESSAGE=]message-number,...
                        {ACTIVE | CURRENT | PREVIOUS | NEXT}

                    If the "message" parameter is omitted, the active message is archived (the last
                    message processed by the Message System).

                    The archive file must be either a line file or *PRINT*.   If the archive file is not
                    specified, the default archive file is used.   The default archive file is specified by
                    the command

                        SET ARCHIVE={filename | OFF}

                    If "filename" begins with a period, the message will be archived in the file whose
                    name is formed by suffixing "filename" to the SET ARCHIVE filename.   For
                    example, the command sequence

                        SET ARCHIVE=xxxx
                        ARCHIVE .yyyy

                    will archive the message in the file "xxxx.yyyy".

                    The NETINFO parameter specifies that network header information is to be
                    archived with the message.   This is applicable only to inter-system messages.

                    The HISTORY parameter specifies the number of history messages that are to
                    be included with replies and forwarded messages.   If FULL is specified, all
                    history messages are included.   The default is HISTORY=1.

                    An archived message is not automatically deleted from the user's mailbox.
                    This must be done explicitly by the DELETE command.   Archived messages
                    cannot be restored back to the user's mailbox.

Examples: `ARCHIVE 1112555 FILE=ARCHIVEFILE`

                        Message 1112555 is saved at the end of the file ARCHIVEFILE.

                    `SET ARCHIVE=MSGSAVE`
                    `ARCHIVE`

The active message is saved in the default archive file MSGSAVE.   The SET ARCHIVE command need only be given once to establish a permanent default archive file.

```
SET ARCHIVE=WXYZ:GRP
ARCHIVE .SYSTEMS
```

The active message is saved in the archive file WXYZ:GRP.SYSTEMS.

COMMENT

Message Command Description

Purpose: To print a comment.

Prototype: COMMENT [text]

                    or

                    *[text]

Action: The COMMENT command prints a comment in the output stream.   The
                    comment is echoed on *SINK* and *MSINK*, unless the command SET
                    ECHO=OFF has been given.

                    The comment is not included in any messages or replies sent by the Message
                    System.

Example: `COMMENT This is a comment.`

                    `* This is also a comment.`

CONVERSATION

Message Command Description

Purpose: To engage in a dispatch message conversation.

Prototype: <u>CONV</u>ERSATION [option ...]

Action: The CONVERSATION command may be used to engage in a dispatch
                    conversation.   After each dispatch is sent, the sender will be prompted for
                    further messages in the conversation.   The conversation may be terminated by
                    entering a null line, an end-of-file, or an attention interrupt.   Conversation
                    messages are automatically posted after composition.

                    The CONVERSATION command is the same as the DISPATCH command with
                    the CONVERSE option.   See the description of the DISPATCH command for
                    complete details.

DELETE

Message Command Description

Purpose: To delete a mail message.

Prototype: DELETE [message]

Action: The DELETE command deletes the specified message or messages.   Only a
                    recipient can delete a message.   When a message is deleted, the recipient loses
                    access to the message.   The sender and any other recipients are not affected.
                    "message" may be:

                        [MESSAGE=]message-number,...
                        {ACTIVE | CURRENT | PREVIOUS | NEXT}

                    If the "message" parameter is omitted, the active message is deleted (the last
                    message processed by the Message System).

                    A message may be recovered by the UNDELETE command (if the message
                    number is known) or by the RETRIEVE DELETED command (if the message
                    number is not known) up to 42 hours after it has been deleted.

Example: `DELETE 1112555`

                    The above example deletes message 1112555.

DESTROY

Message Command Description

Purpose: To destroy a message.

Prototype: DESTROY [message]

Action: The DESTROY command destroys the specified message or messages.   Only the sender can destroy a message.   When a message is destroyed, the sender and all recipients who have not seen the message lose access to it.   Recipients who have seen, but not deleted, the message retain access to it.   "message" may be:

                  [MESSAGE=]message-number,...
                  {ACTIVE | CURRENT | PREVIOUS | NEXT}

           If the "message" parameter is omitted, the active message is destroyed (the last message processed by the Message System).

           A destroyed message cannot be recovered.

Example: `DESTROY 1112555`

           The above example destroys message 1112555.

DISPATCH

Message Command Description

Purpose: To send a dispatch message.

Prototype: DISPATCH [option ...]

Action: The DISPATCH command may be used to compose and send dispatch messages.
                    A dispatch message is an immediate message that is sent to the recipient.   If
                    the recipient is currently signed on, the message is displayed on the recipient's
                    terminal.   If the recipient is not signed on or has disabled the reception of
                    dispatches, the dispatch is discarded.   In either case, the sender is informed of
                    the disposition of the message:

                    (1)   the message was successfully transmitted to the recipient's terminal,

                    (2)   the message is pending (waiting to be printed on the recipient's
                          terminal), or

                    (3)   the message was unable to be delivered.   The sender will be notified
                          that a recipient is not signed on before being prompted for the text of
                          the dispatch (note that the recipient may sign off while the text is
                          being composed, in which case the dispatch is discarded).

                    Several options may be specified with the DISPATCH command.   They are:

                    [NOT]TO recipient,...
                    SUBJECT={'message-subject' | NONE}
                    TEXT='message-text'
                    INPUT=FDname

                         These options specify the recipients, subject, and the text of the
                         message.   They are given in the same form as for the SEND
                         command.   If they are not specified, the user will be prompted for the
                         recipients and/or the message text.

                    {EDIT | NOEDIT}

                         The EDIT option enters the user into edit mode after the message
                         text has been entered.   Any of the MTS File Editor commands may
                         be used to edit the message.   The RETURN or MTS edit commands
                         may be used to exit the File Editor.   The default is NOEDIT.   The
                         default may be changed by the SET AUTOEDIT command.

                         The OK option suppresses the "Post,..." or "Post it"? prompting
                         message.   The message is posted without further prompting.

                    CONVERSE

The CONVERSE option may be specified to engage in a series of messages (a "conversation") with a recipient (or group of recipients). After each dispatch is sent, the sender will be prompted for further messages in the conversation.   The conversation may be terminated by entering a null line, an end-of-file, or an attention interrupt. Conversation dispatches are automatically posted after composition.

ALLSIGNONS

The ALLSIGNONS option specifies that the dispatch is sent to all current sign-ons for the recipient.   If this option is not specified (the default), the dispatch is sent to only one instance of the recipient's sign-on.

A dispatch is limited to 7 lines with a total of 400 characters.   A dispatch will be discarded if an attention interrupt is given while it is being composed.

The recipient may use the MTS $SET DISPATCHES=OFF command to prevent dispatch messages from being printed at the terminal.   This command will suppress dispatches from all users.   Dispatches may be suppressed from selected users by using the PERMIT Message System command.   For example, the command

PERMIT NONE who

(where "who" specifies the restricted sender) prevents "who" from sending both mail and dispatch messages, while the command

PERMIT SEND–MAIL who

allows "who" to send mail messages but disallows dispatch messages.

Example: `DISPATCH TO 'John Smith' TEXT='This is a test' OK`

The above example sends a one-line dispatch to John Smith.

DISPLAY

Message Command Description

Purpose: To display a message or information about the Message System.

Prototype: (a) DISPLAY [message] [item ...] [format ...] [OUTPUT=FDname]

                    (b) DISPLAY [status ...] [OUTPUT=FDname]

Action: With prototype (a), the DISPLAY command displays the specified message or
                    information about the specified message.   "message" may be:

                         message-number
                         {ACTIVE | CURRENT | PREVIOUS | NEXT}

                    If the "message" parameter is omitted, the active message is displayed (the last
                    message processed by the Message System).

                    The "item" parameter specifies what information is to be displayed.   "item" may
                    be:

                         {HEADER | SUMMARY | FULL}

                              HEADER, SUMMARY, and FULL control the amount of detail
                              displayed about the message.   The parameter will remain in effect
                              for all subsequent displays using the current result.   The default is
                              SUMMARY.

                              HEADER displays only the header of the message which consists of
                              the message number, the sender, the date sent, and the recipients
                              (for outgoing messages).   SUMMARY displays the header, the
                              recipients, and the text and subject of the message.   FULL displays
                              all information about the message.

                              The following keywords may be used to specify exactly which
                              message attributes are to be displayed.   The keywords may be
                              negated by prefixing with NO or "~", e.g., NOTEXT or ~TEXT.
                              HEADER, SUMMARY, or FULL may be included to establish a base
                              set of attributes from which the keywords below may be used to add
                              or subtract from this set, e.g., HEADER LINES or SUMMARY
                              NOTEXT.   The keywords are

                                   CHARACTERS   number of characters in message
                                   DATESENT   date message was sent
                                   EXPIRES   date message expires
                                   HOLDUNTIL   date message is held until
                                   LINES   number of lines in message
                                   NETINFO   Mailnet network information
                                   RECIPIENTS   list of recipients
                                   REPLYTO   list of replies to this message

SENDER	sender of message
STATUS	status of message recipients
SUBJECT	subject of message
TEXT	text of message
TYPE	type of message

The "format" parameter specifies how the items are to be displayed. "format" may be:

{NUMBERED | UNNUMBERED}

> NUMBERED specifies that line numbers are to be included with the message text. The default is UNNUMBERED.

{DELETE | NODELETE}

> DELETE specifies that messages are to be deleted after they are displayed. The default is NODELETE.

HISTORY={n | FULL}

> HISTORY specifies the number "n" of history messages that are to be included with the message. FULL specifies that all history messages are to be included. The default is HISTORY=0. This parameter applies only to reply and forwarded messages.

With prototype (b), the DISPLAY command displays information about the current mailbox. "status" may be:

{MESSAGES | MSGS | INCOMING | OUTGOING}

> Prints information about incoming and/or outgoing messages in the current mailbox.

FORWARD

> Prints information about the forwarding status of the current mailbox.

PERMIT

> Prints information about the permit status of the current mailbox.

RESULT

> Prints information about the current RETRIEVE command result.

MAILBOX

> Prints information about the current mailbox. This includes everything printed by the other status options, e.g., incoming and outgoing message status, forward status, permit status, result

status, etc.

MESSAGEFILE

Prints information about the current message file including the single and global message limits.

The following status items print information about SET command options:

ARCHIVE   current archive file (or OFF)
AUTOEDIT   autoedit status (ON or OFF)
AUTOHELP   autohelp status (ON or OFF)
AUTOPROMPT   autoprompt status (ON or OFF)
HISTORY   current history level
INTRODUCTION   introduction status (ON or OFF)
NAMEVERIFY   name-verify status (ON or OFF)
NOTICE   current mailbox notice (or OFF)
PROMPTSUBJECT   prompt-subject status (ON or OFF)
REVERSEORDER   reverse-order status (ON or OFF)

The OUTPUT parameter may be used to direct the output from the DISPLAY command to a file or device.

Examples: `DISPLAY`

This example displays summary information about the active message.

`DISPLAY 1112555 FULL NOTEXT`

This example displays all available information about message 1112555 except for the message text.

`DISPLAY INCOMING`

This example displays status information about incoming messages.

EDIT

Message Command Description

Purpose: To edit a message.

Prototype: EDIT [message-number] [edit command]

Action: The EDIT command may be used to edit the text of a message.

The "message-number" parameter is omitted, the active message is edited (the last message processed by the Message System).

Only a sender may edit a message.   After the modifications have been made, the user will be prompted to post the revised message (unless the OK option is given).

The MTS File Editor is invoked to do the editing.   Any editor command may be used to edit the message.   Line numbers required by the editor correspond to the line numbers of the message text.   For example,

```
@edit
:insert 1 'A line to insert after the first line.'
:return
```

The RETURN or MTS edit command can be used to exit the File Editor.

A single edit command may be appended to the EDIT command and is treated as a "one-shot" edit command.   For example,

```
@edit insert *l 'A line to be inserted at the end.'
```

See *MTS Volume 18: The MTS File Editor*, Reference R1018, for a description of using the MTS File Editor.

EXPLAIN

Message Command Description

Purpose: To obtain online assistance in using the Message System.

Prototype: EXPLAIN [{command | term}]

Action: The EXPLAIN command may be used to obtain online assistance in using the
                    Message System.   An overview may be obtained by giving the command
                    EXPLAIN MESSAGESYSTEM or simply EXPLAIN without any parameters.
                    More detailed general information about the Message System may be obtained
                    by giving the command with one of the following parameters:

                        GETTING STARTED   Brief overview with examples of basic
                                             commands
                        COMMANDS   Details of the command language
                        DOCUMENTATION   Sources of documentation
                        CHANGES   Recent changes to the Message System

                    Detailed information about individual commands or Message System terms
                    may be obtained by giving the command name or term with the EXPLAIN
                    command; e.g.,

                        EXPLAIN DISPLAY

                    or

                        EXPLAIN RESULT

FIND

Message Command Description

Purpose: To obtain information about a name from the User Directory database.

Prototype: FIND {[NAME=]'name' | ID=userID}

Action: The FIND command may be used to obtain information about an individual
                    name, a group name, or a userID from the User Directory database.   The
                    information printed is as follows: the ownerID for individual names, or a list of
                    members for group names.

                    In addition, a check is made for each individual to determine if he or she is
                    currently signed on.

Examples: `FIND 'Mary Louise Smith'`

                        Information is printed about Mary Louise Smith.

                    `FIND ID=WABC`

                        Information is printed about userID WABC.

FORWARD

Message Command Description

Purpose: To forward a mail message to another recipient.

Prototype: FORWARD [message] [option ...]

Action: The FORWARD command may be used to forward a message to another
                    recipient.   "message" may be:

                        message-number
                        {ACTIVE | CURRENT | PREVIOUS | NEXT}

                    If the "message" parameter is omitted, the active message is forwarded (the last
                    message processed by the Message System).

                    The FORWARD command will prompt the user for additional text to be included
                    in a separate message sent with the forwarded message.   The user is prompted
                    in the same manner as for the SEND command, that is, the additional text may
                    be edited, modified, or deleted as desired.

                    Many of the options available with the SEND command may be used with the
                    FORWARD command to control the forwarding of the message.   They are

                        [NOT]TO recipient,...
                        [NOT]CC recipient,...
                        [NOT]BCC recipient,...
                        REPLYTO recipient,...
                        {TEXT='message-text' | INPUT=FDname}
                        SUBJECT={'message-subject' | NONE}
                        EXPIRE={date | 'date'}
                        HOLDUNTIL={date | 'date'}
                        {EDIT | NOEDIT}
                        OK

                    See the description of the SEND command for details of these options.

                    The forwarded message is sent as a history message of the new message
                    containing the additional text.   The recipient will retain access to the new
                    message (and therefore the forwarded message) until it expires (31 days or as
                    specified by the EXPIRE option) or until it is destroyed by the forwarder.

Example: `FORWARD 1112555`

                        Message 1112555 is forwarded.   The user is prompted for the recipient
                        and additional text to be included with the message.

HELP

Message Command Description

Purpose: To obtain immediate assistance in using the Message System.

Prototype: HELP [{command | term}]

                  ? [{command | term}]

Action: The HELP command may be used to obtain immediate assistance in using the
                  Message System.   If the HELP command is given without a parameter, the
                  Message System will attempt to summarize what the user is currently doing
                  and offer some options of what to do next.   If HELP is followed by a command
                  name or a Message System term, an explanation is given for that command or
                  term, if available; for example, HELP SEND will print information for the
                  SEND command.

                  If autohelp mode is enabled, the Message System will automatically generate
                  HELP messages in many situations where additional information would be of
                  use to beginning users.   Autohelp mode may be enabled or disabled by the
                  command

                      SET AUTOHELP={ON | OFF}

                  The default is ON.   If autohelp mode is disabled, it will remain disabled
                  permanently for all future Message System sessions until explicitly reenabled.

                  "?" is a synonym for HELP.

HISTORY

Message Command Description

Purpose: To print history messages of the active message.

Prototype: HISTORY {n | FULL} [OUTPUT=FDname]

Action: The HISTORY command may be used to print the history messages of the active
                    message.

                    If HISTORY=n is specified, the last "n" (unviewed) history messages will be
                    retrieved.   If HISTORY=FULL is specified, all of the history messages will be
                    retrieved.   The default is 1.

                    The history messages are retrieved in reverse chronological order; that is, the
                    most recent messages are retrieved first.

                    The OUTPUT parameter may be used to direct the output from the HISTORY
                    command to a file or device.

Examples: `HISTORY 2`

                        The next two history messages are retrieved, that is, the two most recent
                        unretrieved history messages.

                    `HISTORY FULL OUTPUT=*PRINT*`

                        All history messages are retrieved and printed on *PRINT*.

MODIFY

Message Command Description

Purpose: To modify a message.

Prototype: MODIFY [message] [options]

Action: The MODIFY command may be used to modify a message. "message" may be:

      message-number
      {ACTIVE | CURRENT | PREVIOUS | NEXT}

If the "message" parameter is omitted, the active message is modified (the last message processed by the Message System).

Many of the options available with the SEND command may be used with the MODIFY command. They are:

      {APPEND | NOAPPEND}
      TEXT='message-text'
      INPUT=FDname
      {EDIT | NOEDIT}
      EXPIRE={date | 'date'}
      HOLDUNTIL={date | 'date'}
      SUBJECT={'message-subject' | NONE}
      [NOT]TO recipient,...
      [NOT]CC recipient,...
      [NOT]BCC recipient,...
      REPLYTO recipient,...
      OK

See the description of the SEND command for details of these options. The EXPIRE, HOLDUNTIL, and SUBJECT keywords may not be used with dispatches.

Only a sender may modify a message. After the modifications have been made, the user will be prompted to post the revised message (unless the OK option is given).

If the APPEND option is specified, additional text will be appended to the message. The text to be appended may be given on the command line as a single line of text using the TEXT option or may be read from another file using the INPUT option. If the text is not supplied on the command line or from another file, conversational users will be prompted to enter the text; batch users will get an error message. Lines of text may be entered until the message is terminated with an end-of-file or a null input line. The APPEND command also may be used to append text to a message.

If either the TEXT or INPUT option is given without the APPEND option, the current message will be replaced in its entirety with the new text.

If the EDIT option is specified, the MTS File Editor will be invoked to modify the text of the message.   Any editor command may be used to edit the message. Line numbers required by the editor correspond to the line numbers of the message text.   For example,

```
@modify 1112555 edit
:insert 1 'A line to insert after the first line.'
:return
```

The RETURN or MTS edit command should be used to exit the File Editor.   A separate EDIT command is also available and is generally more convenient to use than the EDIT option with the MODIFY command.

The EXPIRE and HOLDUNTIL options may be used to change the expiration and hold-until dates.   A subject may be added, replaced, or deleted by the SUBJECT option; a subject is deleted by specifying SUBJECT=NONE.

For terminal users, if EXPIRE, HOLDUNTIL, and SUBJECT are specified without right-hand sides, the date or text will be prompted for.

If the message has not been posted, the TO, CC, and BCC parameters may be used to add or delete recipients from the recipient lists.   TO, CC, and BCC will add recipients to the current lists; NOTTO, NOTCC, and NOTBCC will delete recipients from the lists.

If the message has already been posted to a recipient, that recipient may not be removed from the list.   If the user desires to remove a recipient, the message must be destroyed and a new message sent.

Examples: `MODIFY 1112555 EXPIRE=31DEC/87`

The above example modifies the expiration date for message 1112555 to December 31, 1987.

`MODIFY TO 'John Brown'`

The above example adds John Brown to the list of recipients for the active message.

MTS, MCMD

Message Command Description

Purpose: To return to MTS command mode or to execute an MTS command.

Prototype: <u>MTS</u> [MTS-command]

                  <u>MC</u>MD MTS-command

Action: The MTS command returns the user to MTS command mode. If an MTS
                  command is included, it is executed.

                  The MCMD command executes an MTS command in MTS command mode and
                  then returns to Message System command mode.

                  MTS commands may also be executed from the Message System by prefixing
                  them with a dollar sign "$", e.g.,

                      `$DISPLAY NAME`

NEXT, PREVIOUS, CURRENT

Message Command Description

Purpose: To display the next message.

Prototype: NEXT [DISPLAY-command-options]

PREVIOUS [DISPLAY-command-options]

CURRENT [DISPLAY-command-options]

Action: The NEXT command displays the next message in the RETRIEVE command result set. The next message becomes the active message. This command is equivalent to the command DISPLAY NEXT.

The PREVIOUS command displays the previous message in the RETRIEVE command result set. The previous message becomes the active message. This command is equivalent to the command DISPLAY PREVIOUS.

The CURRENT command displays the current message in the RETRIEVE command result set. The current message remains the active message. This command is equivalent to the command DISPLAY CURRENT.

Any of the DISPLAY command options may be used with the NEXT, PREVIOUS, and CURRENT commands, e.g.,

```
NEXT HEADER
```

will the display the header for the next message.

OPEN

Message Command Description

Purpose: To open an alternate mailbox.

Prototype: OPEN {[MAILBOX=]mailbox | DEFAULT}

Action: The OPEN command may be used to open an alternate mailbox.   The new
                    mailbox becomes the current mailbox.   All messages will be sent and retrieved
                    from the new mailbox.   Only one mailbox may open at a time.

                    There is one mailbox per userID.   This mailbox is identified by its userID.   For
                    example, user WXYZ could give the command

                          OPEN WABC

                    to open the mailbox of user WABC.

                    In order for a user to open the mailbox of another userID, the user must have
                    open access to that mailbox.   This is given by the other user via the PERMIT
                    command.   For example, user WABC could give the command

                          PERMIT (OPEN,SEND) ID=WXYZ

                    to grant user WXYZ permission to open the mailbox of user WABC.

                    The DEFAULT keyword reopens the mailbox that is initially opened upon entry
                    to the Message System.   By default, this is the mailbox belonging to the current
                    userID.

                    Information about the current mailbox may be displayed by giving the command

                          DISPLAY MAILBOX

PERMIT

Message Command Description

Purpose: To change the access of the current mailbox.

Prototype: PERMIT [access] [who]

Action: The PERMIT command may be used to change the access of the current mailbox.   "access" specifies the type of access to be granted and may be:

<table>
<tr><td>SEND</td><td>send mail and dispatches to this mailbox</td></tr>
<tr><td>SEND–MAIL</td><td>send mail only to this mailbox</td></tr>
<tr><td>SEND–DISPATCH</td><td>send dispatches only to this mailbox</td></tr>
<tr><td>FORWARD</td><td>forward mail to this mailbox (see SET FORWARD command)</td></tr>
<tr><td>OPEN</td><td>open this mailbox</td></tr>
<tr><td>UNLIMITED</td><td>all of the above</td></tr>
<tr><td>NONE</td><td>none of the above</td></tr>
<tr><td>DEFAULT</td><td>default access (normally UNLIMITED ME, SEND OTHERS)</td></tr>
</table>

"access" may be given either as a single item or in the form of a parenthesized list with each element separated by a comma, e.g., (SEND,FORWARD).

"who" specifies who is to be given the specified access and may be:

    [NAME=]'name'
    ID=userID
    PROJECT=projectID
    OTHERS
    ALL
    ME

"who" may be given only as a single item.   A parenthesized list is not valid, e.g., (WABC,WDEF) is invalid.

By default, a mailbox is permitted with unlimited access to the owner and send access to all others, that is, UNLIMITED ME and SEND OTHERS.   This allows all other users to send mail to the mailbox, but not to forward mail to the mailbox or open the mailbox.

The access categories are not cumulative.   For example, the command

        PERMIT OPEN 'Mary Louise Smith'

grants only OPEN access to user Mary Louise Smith.   Any previous access such as send access is removed.   If open access is to be granted in addition to send access, the send access must be respecified, e.g.,

        PERMIT (SEND,OPEN) 'Mary Louise Smith'

DEFAULT access may be used to remove any access rights granted to a specified user or class of users.   For example, the command

```
PERMIT DEFAULT 'Mary Louise Smith'
```

will remove any special access rights of Mary Louise Smith and restore the access to the same access currently granted to OTHERS (this is normally SEND OTHERS).

The permit status of the current mailbox may be displayed by the command

```
DISPLAY PERMIT
```

To change the access to a name, the User Directory program must be used (see the section "The MTS User Directory" in this volume).

Examples:

```
PERMIT NONE ALL
PERMIT SEND 'John Paul Brown'
```

The above example restricts send access to only the mailbox of John Paul Brown by first removing the send access for all other users and then granting send access to John Paul Brown.

```
PERMIT NONE 'John Paul Brown'
```

The above example removes send access for John Paul Brown while leaving granted accesses intact for all other users.

```
PERMIT (SEND,FORWARD) ID=WDEF
```

The above example grants send and forward access to user WDEF.

POST

Message Command Description

Purpose: To post the active message.

Prototype: POST

Action: The POST command posts the active message initiated by the SEND, REPLY, or FORWARD commands; that is, it routes the message to the mailbox of each of the recipients.

                Posting a message is analogous in the U. S. Postal System to dropping a letter into a mailbox for collection and delivery.

REPLY

Message Command Description

Purpose: To reply to a mail message.

Prototype: REPLY [message] [options]

Action: The REPLY command may be used to reply to a message. "message" specifies
                     the message being replied to and may be:

                          message-number
                          {ACTIVE | CURRENT | PREVIOUS | NEXT}

                     "options" are similar to the options available with the SEND command:

                          [NOT]TO recipient,...
                          TO ALLRECIPIENTS
                          [NOT]CC recipient,...
                          [NOT]BCC recipient,...
                          REPLYTO recipient,...
                          SUBJECT={'message-subject' | NONE}
                          TEXT='message-text'
                          INPUT=FDname
                          EXPIRE={date | 'date'}
                          HOLDUNTIL={date | 'date'}
                          {EDIT | NOEDIT}
                          OK

                     See the description of the SEND command for details of these options.   If
                     "message" is omitted, the reply is generated for the active message (the last
                     message processed by the Message System).

                     By default, a reply is sent only to the original sender of the message or the
                     recipients mentioned in the REPLYTO list of the original message (if any).   If
                     the replier desires that other recipients of the message also see the reply, the TO
                     option must be specified.   TO ALLRECIPIENTS (or TO ALL) will send the
                     reply to all recipients of the message plus the original sender.

                     The REPLY command will prompt the user in the same manner as does the
                     SEND command; that is, the replier may edit, modify, or delete the reply as
                     desired.

                     The reply is assigned a message number and is sent as a separate message.
                     The current message becomes a history message.   The default expiration date
                     is 31 days from the date the reply is sent.

                     If a recipient replies to a message that has been forwarded by the FORWARD
                     command, he or she will be prompted for the recipient of the reply if it is not
                     given.

Example: `REPLY 1112333 TO ALL`

The above example will generate a reply to all recipients of message 1112333.   The replier will be prompted for the text of the reply.

RETRIEVE

Message Command Description

Purpose: To retrieve a message or a group of messages.

Prototype: RETRIEVE [message ...] [item ...] [format ...]
                           [OUTPUT=FDname]

Action: The RETRIEVE command is used to retrieve messages.   The current mailbox is
                     searched and the set of all messages that satisfy the search criteria is accessed.
                     This set is called the result.   The search criteria are specified by the "message"
                     parameter which acts as a filter to select the messages that are to be included in
                     the retrieve result.

                     "message" specifies what message or messages are to be included in the result
                     set.   The "item" and "format" parameters control how the messages are to be
                     displayed.   "message" may be any one of the following:

                           {INCOMING | OUTGOING}

                                 INCOMING selects all messages that have been sent to this mailbox.
                                 OUTGOING selects all messages that are being sent by the user to
                                 other recipients.

                           [MESSAGE=]message-number,...

                                 The MESSAGE parameter selects a single message or a series of
                                 messages.   The messages are identified by the message numbers
                                 generated when the messages were originally composed by the SEND
                                 command.

                           FROM sender,...
                           TO recipient,...

                                 The FROM parameter specifies a sender or list of senders from which
                                 messages have been received.   The TO parameter specifies a
                                 recipient or list of recipients to which messages have been sent.   The
                                 list may contain names, userIDs, or projectIDs.

                           {NEW | OLD | NEWANDOLD}

                                 The NEW parameter restricts the set of messages retrieved to
                                 include only messages that have not been previously seen.   The OLD
                                 parameter restricts the set to include only messages that have been
                                 seen.   NEWANDOLD includes both types.   NEWOLD and
                                 OLDNEW are synonyms for NEWANDOLD.

                           {MAIL | SIGNONMESSAGES}

The MAIL parameter specifies that only mail messages are to be retrieved. SIGNONMESSAGES specifies that only sign-on messages are to be retrieved. The default is MAIL.

HELD

The HELD parameter selects only messages with hold-until dates. This is valid only for the senders of the messages.

DELETED

The DELETED parameter specifies only messages that have been deleted but not purged from the Message System. Messages are automatically purged from the Message System after they have been deleted by *all* recipients or have expired, whichever comes first.

If the RETRIEVE command is given without a "message" parameter and with no explicit filtering instructions (e.g., TO, FROM, INCOMING, etc.), RETRIEVE INCOMING NEW is defaulted. This will retrieve all unseen messages, indicate how many there are, and print the first one.

The RETRIEVE command searches through the current mailbox and selects the messages that have been requested. This set of messages is called the result. By default, the messages are ordered in forward chronological order. The REVERSEORDER parameter (see below) may be specified to reverse this order. The first message in the result becomes the active message and is printed. The active message is always the most recent message processed by the Message System.

In autoprompt mode (the default), after the active message has been printed, the recipient will be prompted to reply to the message, to delete the message, or to move on to the next message in the result set, e.g.,

```
Next, history, delete, reply, help, etc.?
```

Any Message System command may be given as a response (with or without command parameters), e.g., DISPLAY 1112555. The most common responses are:

NEXT   The next message in the result becomes the active message and is printed. If there are no more messages, the user is returned to Message System command mode. A null line is also equivalent to the NEXT command.

HISTORY   The last unviewed history message to the active message is displayed.

PREVIOUS   The previous message in the result becomes the active message and is printed.

CURRENT   The current message in the result remains the active message and is printed.

DELETE   The active message is deleted from the recipient's mailbox, and the next message is retrieved.

REPLY   The recipient may compose a reply to the active message and return it to the sender.   The reply is formed in a manner similar to sending a message (see the REPLY command).

ARCHIVE   A copy of the active message is saved in a private file (see the ARCHIVE command).

FORWARD   The active message is forwarded to another recipient (see the FORWARD command).

HELP   An explanation of the user's options is given.

Attention Interrupt or End-of-File
                The user is returned to Message System command mode (the attention interrupt requires confirmation before the retrieve result is discarded; the end-of-file does not).

If autoprompt mode is disabled (AUTOPROMPT=OFF), the user is returned to Message System command mode after the first message is displayed.   The first message remains the active message and subsequently may be replied to, deleted, forwarded, etc.   The NEXT command may be given to display the next message.

After a message has been accessed, it will be marked as delivered to the recipient if only the header is printed, or as seen if the text is printed.   A message will be marked as deleted when the DELETE command is given. Unless deleted, the message will be saved and will remain in the recipient's mailbox until the expiration date.

The "item" parameter specifies what information is to be displayed.   "item" may be:

{HEADER | SUMMARY | FULL}

HEADER, SUMMARY, and FULL control the amount of detail displayed about the message.   The parameter will remain in effect for all subsequent displays using the current result.   The default is SUMMARY.

HEADER displays only the header of the message which consists of the message number, sender, and date sent.   SUMMARY displays the header, the recipients, and the text and subject of the message. FULL displays all information about the message.

The following keywords may be used to specify exactly which message attributes are to be displayed.   The keywords may be negated by prefixing with NO, e.g., NOTEXT.   HEADER, SUMMARY, or FULL may be included to establish a base set of

attributes from which the keywords below may be used to add to or subtract from this set, e.g., HEADER LINES or SUMMARY NOTEXT.   The keywords are:

CHARACTERS	number of characters in message
DATESENT	date message was sent
EXPIRES	date message expires
HOLDUNTIL	date message is held until
LINES	number of lines in message
NETINFO	network information
RECIPIENTS	list of recipients
REPLYTO	list of replies to this message
SENDER	sender of message
STATUS	status of message recipients
SUBJECT	subject of message
TEXT	text of message
TYPE	type of message

The "format" parameter specifies how the items are to be displayed.   "format" may be:

{DISPLAYFIRST | DISPLAYALL | NODISPLAY}

DISPLAYFIRST specifies that only the first message of the result is to be displayed (the conversational default).   DISPLAYALL specifies that all messages in the result are to be displayed (the batch default). NODISPLAY specifies that no messages are to be displayed initially. NODISPLAY is ignored in autoprompt mode.

{FORWARDORDER | REVERSEORDER}

FORWARDORDER specifies that the messages of the result are to be ordered in forward chronological order.   REVERSEORDER specifies that the result is to be ordered in reverse chronological order.   The default is the setting of the SET REVERSE ORDER option (which defaults to forward order).

{NUMBERED | UNNUMBERED}

NUMBERED specifies that line numbers are to be included with the message text.   The default is UNNUMBERED.

{DELETE | NODELETE}

DELETE specifies that messages are to be deleted after they are displayed.   The default is NODELETE.

HISTORY={n | FULL}

HISTORY specifies the number "n" of history messages that are to be included with the message.   FULL specifies all history messages are to be included.   The default is HISTORY=0.   This parameter

applies only to reply and forwarded messages.

The OUTPUT parameter may be used to direct the output from the RETRIEVE command to a file or device.

Examples:
```
RETRIEVE NEWANDOLD
```

The above example retrieves all incoming messages, both new and old, and displays the first one.

```
RETRIEVE 1112333, 1112345, 1112573
```

The above example retrieves messages 1112333, 1112345, and 1112573 and initially displays message 1112333.

```
RETRIEVE OUTGOING HEADER DISPLAYALL
```

The above example retrieves and displays all outgoing messages. Only the header of each message is printed when the messages are displayed.

RETURN

Message Command Description

Purpose: To return to the caller.

Prototype: RETURN [MTS-command]

Action: The RETURN command returns to the caller (normally MTS command mode).
                    If an MTS command is included, it is executed.

SEND

Message Command Description

Purpose: To compose and send a message.

Prototype: SEND [message-type] [option ...]

Action: The SEND command may be used to compose and send messages.   The types of
                    messages that may be sent are:

MAIL

If MAIL is specified, a mail message is composed and sent.   Mail
messages are sent to and retrieved from mailboxes.   Mail messages
are stored in the mailboxes until they are seen and/or deleted by the
recipient, destroyed by the sender, or expire after a specified period of
time.   MAIL is the default message type.

DISPATCH

If DISPATCH is specified, a dispatch message is composed and sent.
Dispatch messages are printed immediately on the recipient's
terminal.   If the recipient is not signed on or has disabled the
reception of dispatches, the dispatch is discarded.   A dispatch cannot
be converted into a mail message.

Several options may be specified with the SEND command.   They are:

[NOT]TO recipient,...

The TO option specifies the primary recipients of the message.
Messages may be sent to one or more recipients.   If more than one
recipient is given, the recipients must be given as a list with each
member separated by a comma.   There is a limit of 500 recipients.
The NOTTO form may be used to remove recipients previously
included by the TO form.   If the TO option is omitted from the
command line, conversational users will be prompted to enter the
recipient list; batch users will get an error message.   "recipient" may
be any one of the following:

[NAME=]'name'

"name" specifies the name of an individual or a group as the
recipient of the message.

If the message is sent to a user on the same system, the name
must be enrolled in the User Directory database.   The
database is searched to determine which mailbox(es) the
individual or members of the group are using.   The complete
full name need not be given; alternate or nicknames usually are

sufficient. If there are ambiguities with other names, the sender will be prompted for a clarification.

Primes (single quotes) are required around the name only if it contains blanks and it is entered on the command line; primes are not required if the user is prompted for the name. Blanks in the name may be replaced by underscores (_) instead of enclosing the name in primes.

If the name specifies a remote site, the remote site name must be appended (using an at-sign (@) followed by the site name). In this case, primes may not be used in the name; blanks must be replaced with underscores.

ID=userID
ID=userID-userID
PROJECT=projectID
PROJECT=projectID(userID-userID)

"userID" specifies the mailbox of a userID as the recipient of the message. "userID-userID" specifies a range of userIDs, all of which must be in the same project. "projectID" specifies all members within a project.

ME

ME specifies that the message is to be sent only to the sender (the current mailbox). This is useful for either producing reminders to oneself via the Message System or for retaining a copy of a message sent to another recipient after that recipient has deleted the message.

DEVICE=device-name
TASKNO=task-number
OPERATOR

"device-name" specifies a device (e.g., terminal) as the recipient of the message (the message is sent to the mailbox of the current MTS task/userID using that device). "task-number" specifies an MTS task as the recipient of the message. OPERATOR specifies the operator's console as the recipient (for dispatches only).

LIST=FDname

The LIST option specifies that the recipient list is to be read from the file or device "FDname". Entries may be either one entry per line or several entries per line with each entry separated by a comma (lines are read until an end-of-file is encountered). Primes are not required for names containing blanks when using the LIST option.

[NOT]CC recipient,...
[NOT]BCC recipient,...

>CC specifiies that a "carbon copy" of the message sent to the primary recipients is to be sent to the listed secondary recipients.   BCC specifies that a "blind carbon copy" of the message is to be sent to the listed secondary recipients; in this case, the primary recipients will not be notified that the carbon copy is being sent.   The syntax for CC and BCC recipients is the same as for the primary recipients.

REPLYTO recipient,...

>If a recipient of this message replies to it, the reply will be sent to only those specified in the REPLYTO parameter instead of the sender.   If the sender also wants to receive replies, the sender must be included in the REPLYTO list.   This provides a mechanism for the sender to direct replies to other persons.   REPLYTO also be given as REPLY–TO.

SUBJECT={'message-subject' | NONE}

>A brief description of the subject of a mail message may be given with the SUBJECT option.   The subject is normally printed along with the message text when the message is displayed.   The subject is limited to 128 characters.   If NONE is specified, no subject is included with the message.   For terminal users, if the SUBJECT option is specified without a right-hand side, the text will be prompted for.   The SET PROMPTSUBJECT option may be specified to induce prompting for the subject, if the SUBJECT option is not given on the command line.   NONE is the default unless the PROMPTSUBJECT option is ON.

TEXT='message-text'
INPUT=FDname

>The text of the message may be given on the command line as a single line of text or may be read from another file using the INPUT option. If the text is not supplied on the command line or from another file, conversational users will be prompted to enter the text; batch users will get an error message.   Lines of text may be entered until the message is terminated with an end-of-file or a null input line.

>For mail messages, there is a limit of 1000 lines of text (maximum of 255 characters per line) or 25,000 characters per message, whichever comes first.   Each user is also limited to the least of 300 messages, 10,000 total lines of message text, or 250,000 total characters.

>For dispatch messages, there is a limit of 7 lines of text with a total of 400 characters.

<u>E</u>XPIRE={date | 'date'}

The EXPIRE option specifies an expiration date and time for a mail message.   After this date, the message will be automatically destroyed and hence unavailable to the sender or recipients.   Almost any commonly used time/date format is acceptable.   The expiration date must be enclosed in primes only if it contains blanks.   Blanks may be omitted except where ambiguities arise, such as running two numbers together.   Some examples of valid time/date are:

```
'1am Wednesday Jan 7,1987'
1am
Wednesday
'Jan 7'
Jan7
7Jan
7Jan/87
18:30
6:30pm
'2 weeks'
2weeks
7days
7minutes
7seconds
```

Dates are always resolved into the future, e.g., if 1 a.m. today has already occurred, 1 a.m. tomorrow is assumed.   The default expiration time/date is 31 days from the time the message is sent. The maximum limit is 150 days.   For terminal users, if the EXPIRE option is specified without a right-hand side, the date will be prompted for.

<u>H</u>OLDUNTIL={date | 'date'}

The HOLDUNTIL option specifies a hold-until date and time for a mail message.   After this date, the message will be delivered to the recipients.   The same time/date format is used for HOLDUNTIL as is used for EXPIRE.   The maximum length of time for which a message can be held is 150 days.   The default is 0 hours (the message is delivered immediately).   For terminal users, if the HOLDUNTIL option is specified without a right-hand side, the date will be prompted for.

{<u>EDIT</u> | <u>NOEDIT</u>}

The EDIT option enters the user into edit mode after the message text has been entered.   Any of the MTS File Editor commands may be used to edit the message.   Line numbers required by the edit commands correspond to the line numbers of the message text.   The RETURN or MTS edit command should be used to exit the File Editor.   The default is NOEDIT.   The default may be changed by the SET AUTOEDIT command.

OK

> The OK option suppresses the "Post,..." or "Post it?" prompting message. The message is posted without further prompting.

CONVERSE

> The CONVERSE option may be specified with a dispatch to engage in a series of messages (a "conversation") with a recipient. After each dispatch is sent, the sender will be prompted for further messages in the conversation. The conversation may be terminated by entering a null line, an end-of-file, or an attention interrupt. Conversation dispatch messages are automatically posted after composition.

ALLSIGNONS

> The ALLSIGNONS option specifies that the dispatch is sent to all current sign-ons for the recipient. If this option is not specified (the default), the dispatch is sent to only one instance of the recipient's sign-on.

In autoprompt mode (the default), after the message has been assembled and becomes the active message, the sender will be prompted as follows:

```
Post, edit, display, destroy, help, etc.?
```

Any Message System command may be given as a response (with or without command parameters). The most common responses are

POST
: The active message is posted to each recipient.

EDIT
: The MTS File Editor is invoked to allow the sender to edit the active message. Any valid edit command may be used to edit the message. The RETURN or MTS editor command should be used to return from the File Editor to the Message System.

APPEND
: The sender may append additional text to the active message. Any of the SEND command options may be given with the APPEND command.

MODIFY
: The sender may modify attributes of the active message such as the recipient list or the expiration date (the EDIT command is more convenient to change the message text). Any of the SEND command options may be given on the MODIFY command.

DISPLAY
: The text of the active message is displayed.

DESTROY
: The active message is destroyed without being posted.

HELP   An explanation of the sender's options is given.

Attention Interrupt or End-of-File
> The user is returned to Message System command mode and the message is destroyed (the attention interrupt requires confirmation before the message is destroyed; the end-of-file does not).

If autoprompt mode is disabled (AUTOPROMPT=OFF), this prompt is shortened to "Post it?". In addition to the above commands, the responses "Yes" or "No" may be given. If "Yes" is given, the message is posted; if "No" is given, the user is returned to Message System command mode.

If the message is not posted, it remains the active message. As the active message, it may be further edited, displayed, or modified. The sender is repeatedly prompted with "Post,..." or "Post it?" until the message is either posted or destroyed.

When a mail message is posted, it is assigned a unique message number and placed in each recipient's mailbox. This number can be used later by either the sender or recipient(s) to access the message with other Message System commands.

A dispatch message is an immediate message that is sent to the recipient. See the DISPATCH command for further details.

Examples: `SEND TO ID=WXYZ TEXT='This is a test.'`

> The above example sends a one-line message to userID WXYZ. The message expires after 31 days by default.

`SEND TO 'John Smith' CC 'Sally Jones'`

> The above example sends a message to the primary recipient John Smith and a carbon copy of the message to Sally Jones.

`SEND TO 'John Smith' SUBJECT='Message System Test'`

> The above example sends a message to John Smith. The subject is "Message System Test" and the sender will be prompted for the message text.

`SEND TO 'John Smith' HOLD='1 WEEK' EXPIRE='2 WEEKS'`

> The above example sends a message to John Smith. The sender is prompted for the message text. The message will be delivered in one week and will expire in two weeks.

`SEND DISPATCH TO 'John Smith'`

> The above example sends a dispatch message to John Smith. The sender will be prompted for the text of the dispatch.

        DISPATCH CONVERSE

The above example enters into a dispatch conversation.   The sender will
be prompted for the recipient and the text of the conversation.

SET

Message Command Description

Purpose: To set Message System options.

Prototype: SET option ...

Action: The SET command may be used to change the status of various Message System
                  options or default attributes.   More than one option may be specified on the
                  SET command; one or more blanks must separate each option.

                  ARCHIVE={filename | OFF}   Default: OFF

                      The ARCHIVE option specifies the default archive file to be used by the
                      ARCHIVE command.   If ARCHIVE is OFF, the user will be prompted for
                      the archive file if one is not given with the ARCHIVE command.   The
                      setting of the ARCHIVE option is permanent and will remain in effect for
                      future Message System sessions.

                  AUTOEDIT={ON | OFF}   Default: OFF

                      The AUTOEDIT option controls the default for the {EDIT | NOEDIT}
                      option of the FORWARD, REPLY, and SEND commands.   ON implies
                      EDIT and OFF implies NOEDIT.   The setting of the AUTOEDIT option is
                      permanent and will remain in effect for future Message System sessions.

                  AUTOHELP={ON | OFF}   Default: ON

                      The AUTOHELP option specifies whether autohelp mode is in effect.   If
                      AUTOHELP is ON, the Message System will generate help messages in
                      many situations where additional information would be of assistance to
                      beginning users.   The user may always issue explicit HELP commands to
                      obtain further information, even if AUTOHELP is OFF.   The setting of
                      the AUTOHELP option is permanent and will remain in effect for future
                      Message System sessions.   Most users set this option to OFF after
                      becoming acquainted with the Message System.

                  AUTOPROMPT={ON | OFF}   Default: ON

                      The AUTOPROMPT option specifies whether autoprompt mode is in
                      effect.   If AUTOPROMPT is ON, full prompting messages will be
                      generated whenever messages are being composed and retrieved by the
                      SEND and RETRIEVE commands.   If AUTOPROMPT is OFF, these
                      prompting messages are shortened or eliminated.   The setting of the
                      AUTOPROMPT option is permanent and will remain in effect for future
                      Message System sessions.

                  ECHO={ON | OFF | MTS}   Default: MTS

The ECHO option controls the echoing of Message System input lines.   If ECHO is ON, input lines are echoed on the current output file if it is different from the input file or device.   If ECHO is OFF, input lines are not echoed.   If ECHO is MTS, the setting of the MTS ECHO option is followed. The setting of the ECHO option is not permanent and will remain in effect only for this Message System session.

FORWARD={mailbox | OFF}   Default: OFF

The FORWARD option specifies the mailbox to which all mail messages should be forwarded.   The user must have forward access to the mailbox (see the PERMIT command).   If FORWARD is OFF, messages are not forwarded.   The setting of the FORWARD option is permanent and will remain in effect for future Message System sessions.

HISTORY={n | FULL}   Default: 0

The HISTORY option specifies the default number of history messages that will be included when a mail message is printed by the DISPLAY or RETRIEVE commands.   If FULL is specified, all history messages are included.   The setting of the HISTORY option is permanent and will remain in effect for future Message System sessions.

INPUT=FDname   Default: *SOURCE*

The INPUT option specifies the file or device from which input lines are read.   By default, input lines are read from *SOURCE*.   If an attention interrupt is given or an end-of-file is encountered on an alternate input file, the input file reverts back to *SOURCE*.   The setting of the INPUT option is not permanent and will remain in effect only for this Message System session.

INTRODUCTION={ON | OFF}   Default: ON

The INTRODUCTION option controls the printing of the brief introductory message that is printed when the Message System is entered. If INTRODUCTION is turned OFF, this message will be suppressed.   The setting of the INTRODUCTION option is permanent and will remain in effect for future Message System sessions.   Most users set this option to OFF after becoming acquainted with the Message System.

NAMEVERIFY={ON | OFF}   Default: OFF

The NAMEVERIFY option controls the name-verification procedure used by the SEND command.   If NAMEVERIFY is ON, the Message System prompts the user for verification of all names.   The setting of the NAMEVERIFY option is permanent and will remain in effect for future Message System sessions.

NOTICE={'notice-message' | OFF}   Default: OFF

The NOTICE option specifies a short message to be given to each sender that sends the user a message. This notice message is printed on the sender's terminal before the message is sent. The notice message is limited to 128 characters and must be enclosed in primes (single quotes). If NOTICE is OFF, a notice message is not printed. The setting of the NOTICE option is permanent and will remain in effect for future Message System sessions. Upon entry to the Message System, the user is reminded of the current notice (if any).

OUTPUT=FDname   Default: *SINK*

The OUTPUT option specifies the file or device to which output lines are written. By default, output lines are written to *SINK*. If an attention interrupt is given, the output file reverts back to *SINK*. The setting of the OUTPUT option is not permanent and will remain in effect only for this Message System session.

PROMPTSUBJECT={ON | OFF}   Default: ON

The PROMPTSUBJECT option controls whether the subject message is prompted for by the SEND and REPLY commands. If PROMPTSUBJECT is ON, the mail message subject will be prompted for as is done for the message text and recipient list. The subject may be omitted by entering a null input line. The setting of the PROMPTSUBJECT option is permanent and will remain in effect for future Message System sessions. Note: UserIDs that were created before April 1987 initially defaulted the PROMPTSUBJECT option to OFF.

REVERSEORDER={ON | OFF}   Default: OFF

The REVERSEORDER option controls whether mail messages are printed in reverse or forward chronological order by the RETRIEVE command. If REVERSEORDER is ON, the messages are printed in reverse chronological order. The setting of the REVERSEORDER option is permanent and will remain in effect for future Message System sessions.

TERSE={ON | OFF | MTS}   Default: MTS

The TERSE option controls the printing of the Message System error messages and comments. If TERSE is ON, many of these messages will be shortened or eliminated. If TERSE is MTS, the setting of the MTS TERSE option is followed. The setting of the TERSE option is not permanent and will remain in effect only for this Message System session.

WIDTH=terminal-width   Default: *SINK* width

The WIDTH option controls the length of lines printed by the Message System. If a line exceeds the terminal width, the remainder is printed on succeeding lines (using a minus sign prefix character). The default width is the width of *SINK* at entry to the Message System. The setting of the WIDTH option is not permanent and will remain in effect only for this Message System session.

STOP

Message Command Description

Purpose: To terminate the Message System session and return to the caller.

Prototype: STOP

Action: The Message System session is terminated and control is returned to the caller
                    (normally MTS command mode).   All Message System workspace and buffers
                    are released.

UNDELETE

Message Command Description

Purpose: To recover a deleted message.

Prototype: UNDELETE [message]

Action: The UNDELETE command recovers the deleted message or messages.
                    "message" may be:

                        [MESSAGE=]message-number,...
                        {ACTIVE | CURRENT | PREVIOUS | NEXT}

                    If the "message" parameter is omitted, the active message is recovered (the last
                    message processed by the Message System).

                    A deleted message may be recovered up to 42 hours after it has been deleted.

                    Only a deleted message can be recovered; a destroyed message cannot be
                    recovered.

Example: `UNDELETE 1112555`

                        The above example undeletes message 1112555.

THE MTS FULL-SCREEN MESSAGE SYSTEM

The MTS Full-Screen Message (FSMessage) System invokes a full-screen interface to the MTS Message System. It provides full-screen viewing of messages, message composition, and easy generation of a directory of messages based on certain message characteristics. Additionally, it provides a form of message archiving that allows filing of messages into subject-ordered groups, in such a way that these archived messages can be retrieved and viewed in the same fashion as MTS Message System messages.

FSMessage provides commands to retrieve messages, to reply to messages, to send messages, and to modify messages and mailbox settings. Most of these commands have the same syntax as their MTS Message System counterparts. See the section "FSMessage Commands" for a description of the available commands.

Two special features provided by FSMessage are *folders* and *directories*. Folders permit archived messages to be grouped together with other related messages. Directories provide a quick overview of the messages present in a folder or in the user's mailbox, and can also provide an index of the existing folders. Both of these features are described in detail later.

When in FSMessage mode, each PF-Key has an initial default value to execute a specific command. These default values can be reset using the SET command. See the section "PF-Keys" for a list of the default PF-Key values and a description of the commands initially assigned to each PF-Key. By default, a compact display of relevant PF-Keys will be displayed near the bottom of the screen. Note: in this description, use of the term "Enter Key" refers to the PF-Key with the command ENTER assigned to it (initially PF0), and not to a physical key with the word "ENTER" on it.

FSMessage has an initialization file (initfile) that is processed when FSMessage is loaded. The initfile is set with the MTS command

    $SET INITFILE(FSMESSAGE)=filename

The initfile can contain FSMessage commands to tailor FSMessage to a specific user's preferences, for example, redefining PF-Key values from their defaults. See the section "Initfiles" below for more details and some examples.

A single FSMESSAGE command may be given as a parameter when FSMessage is invoked. For example,

    $FSMESSAGE SEND

will put the user into the SEND screen where a message can be composed and posted. If no command is given on the FSMESSAGE command when FSMessage is first started, a directory of messages is generated.

To exit FSMessage, press end-of-file or execute a STOP command (these will unload FSMessage), or press Attention or execute an MTS command, which will exit FSMessage without unloading it. It is assumed that the user has not reassigned the commands associated with the End-of-File or Attention keys.

INITFILES

FSMessage has an initialization file (initfile) capability.   The file indicated with

> $SET INITFILE(FSMESSAGE)

is processed when FSMessage is first loaded.   It is used to tailor FSMessage to a specific user's preferences, and to set various options which are not retained over sessions.   For these reasons, the SET command will be the most common in an initfile (see the "FSMessage Commands" section for details):

(1)   a series of SET PFn commands, to change the default PF-Key values

(2)   the SET DEFAULTDIRECTORY command to reset the attributes of the default directory of messages

(3)   the SET ARCHIVE command to indicate the file to be used with the FILE and CREATE commands

(4)   the SET PRINT command to indicate the file to be used with the PRINT command.

If autofiling of messages is desired (see "Message Archiving With FSMessage"), the attributes of the messages to be autofiled can be specified with a SET AUTOFILE command in the initfile.

As an example, consider the following file FSINIT, which is specified with "$SET INITFILE(FSMESSAGE)=FSINIT":

```
***  Initfile for FSMessage  ***

Set PF3="Post OK"
Set PF2="Previous"
Set PF5="Next"
Set PF6="Reply NoEdit"
Set PF8="Remove OK","Current"
Set PF9="Send NoEdit"
Set ARCHIVE=XMAS:ARCHIVE*FSM
Set PRINT=*print*
Set AUTOFILE=ON
Set DEFAULTDIRECTORY=NEW
Set FILEHISTORY=0
Set PRINTHISTORY=0
```

This initfile resets PF3 to be POST OK (the default is POST); sets PF2 and PF5 to PREVIOUS and NEXT, respectively (from their initial values of PRINT and EDIT); modifies the values of PF6 and PF9 from REPLY and SEND to REPLY NOEDIT and SEND NOEDIT (overriding the AUTOEDIT option); and assigns to PF8 a pair of commands, REMOVE OK and CURRENT.   As a result, both commands will be executed when PF8 is pressed.   The file XMAS:ARCHIVE*FSM is used when filing messages, and messages printed with the PRINT command are printed on *PRINT*.   All messages (incoming and outgoing) are autofiled, and the default directory is a directory of incoming new messages (the default default-directory is a directory of incoming new and old messages).   Additionally, the number of messages printed or filed along with each specified message is set to 0, rather than using the default of 1.

MESSAGE ARCHIVING WITH FSMESSAGE

FSMessage uses a different type of message archiving from the MTS Message System, which is why FSMessage does not use the archive file specified with the MTS Message System SET ARCHIVE command.   FSMessage has its own SET ARCHIVE command, to indicate which file it is to use for filing of messages.   To avoid confusion, FSMessage has no ARCHIVE command, but has instead two commands, FILE and PRINT, explained in more detail below.

FSMessage message archiving is done using the FILE command, which invokes a subroutine package to manage the messages in the archive file.   As a part of this new form of message archiving, FSMessage introduces the concept of folders.

Folders

A folder is a subset of the archive file.   The messages in a folder are usually (but need not be) related to each other in some way.   Folders reside in the file specified as the archive file with the SET ARCHIVE command.   Unlike the MTS Message System, this setting is not remembered over sessions and for this reason should be set in the FSMessage initfile.   A SET command of the form:

        SET ARCHIVE=FDname

will tell FSMessage to use file "FDname" as the archive file for filed messages.   Note that FSMessage creates and initializes the archive file the first time it is SET; you should not create it yourself.   As part of the initialization of the archive file, two folders will be created, folder ARCHIVE and folder MISCELLANEOUS.   The first, folder ARCHIVE, contains every message in the FSMessage archive file.   The second of these, folder MISCELLANEOUS, will contain all messages that are filed but which do not fit into any of your folders.   These two folders cannot be deleted; all other folders you create can.

Once the archive file is set, you can create folders.   Once created, a folder exists until it is explicitly deleted with the DELETE or DESTROY command.   Use the CREATE command to create folders:

        CREATE [FOLDER=]foldername [filter-expression]

The filter expression tells FSMessage which messages to file into a particular folder.   Filter expressions are optional.   An example of a filter expression is:

```
    TOFROM='Henry' AND SUBJECT='Denver'
```

To create a folder to contain all messages to or from Henry on the subject of Denver give the command:

```
    CREATE DENVER TOFROM='Henry' and SUBJECT='Denver'
```

The terms in the filter expression may be grouped arbitrarily using parentheses; there is no precedence ordering of the AND and OR connectives.   Currently valid left-hand sides for the terms in a filter expression are TO, TOFROM, FROM, SUBJECT, TOCOUNT, TYPE, and DATE.

For the TO, TOFROM, FROM and SUBJECT terms, valid operators are = and ~= (<= and >= are accepted, but are treated the same as =).   In these cases, SUBJECT='mess' means that the message's subject field should contain the string "mess" (case is irrelevant) somewhere in the field.   TO, TOFROM, and FROM terms are matched against name-type message recipients (remote names are of the form "Person_Name@Formal_Site_Name") or the ID type of recipient (e.g., ID=ABCD). TOFROM='name' is treated exactly the same as TO='name' OR FROM='name'.

For the DATE terms, dates are of the same form as MTS Message System dates, and should be enclosed in quotation marks in the expression.   The date sent is used for local messages, and the date imported for remote messages.   Valid operators for the DATE terms in a folder expression are =, ~=, >, <, >=, and <= (although comparisons for equality between dates are probably not too useful).

For the TOCOUNT term, the valid operators are =, ~=, >, <, >=, and <=.   TOCOUNT refers to the number of recipients of a message.   For example, TOCOUNT>3 will match if there are more than three recipients of a given message.

For the TYPE term, the valid operators are = and ~= (<= and >= are accepted, but are treated the same as =).   The following are legal values for TYPE: INCOMING, OUTGOING, HISTORY, and HELD.   The "TYPE=" portion may be omitted; thus, a filter expression such as "INCOMING AND SUBJECT="JOE"" is valid.

Also, a filter expression can be simply ALLMESSAGES (which may be abbreviated as ALL).   A folder with such an expression will match every message.

A folder's filter expression can be changed using the Directory screen's Directory Attribute line (explained later in the section "Directory of a Folder").

Once a folder is created, use the FILE or FILEDELETE commands to file messages into it.   The syntax of the FILE command is as follows:

    FILE message-list [[FOLDER=]foldername] [HISTORY={n | FULL}]

The FILE command causes the indicated messages to be filed into folder ARCHIVE, as well as into the indicated folder, regardless of any filter expression associated with that folder.   If the FILE command is given *without* a folder name, probably the most common usage if the folders and their filter expressions are set up in a reasonable fashion, then the specified messages are filed into every folder in the archive file where the attributes of the message satisfy the folder's filter expression.   The message will be filed into folder MISCELLANEOUS if it does not satisfy the expression on any user-defined folder.

For example, assume that the folder FSMESSAGE was created as described above, and that message 1101235 is a message sent to John Henry, Sal Paradise, and Dean Moriarity about a proposed trip to Denver, and further, that message 1111274 is a message to Ralph Sayle about England.   Then the command

    ```
    FILE 1101235,1111274
    ```

will result in message 1101235 being filed into folder ARCHIVE and into folder DENVER, and message 1111274 being filed into folder ARCHIVE and folder MISCELLANEOUS.

Messages that have been filed can be viewed in much the same way as ordinary messages.   The DIRECTORY command accepts a folder name as a parameter.   This form of the DIRECTORY command generates a directory of the messages that have been filed into that folder, and any of these messages can be retrieved and viewed simply by positioning the cursor to the corresponding line in the directory, and pressing the Enter key.

The DELETE or DESTROY command can be used to delete a filed message from a folder or from the entire archive file.   Deleting a filed message from folder ARCHIVE causes the message to be deleted from every folder in the archive file, and thus from the file itself.   An entire folder can be deleted from

the archive file using the DELETE or DESTROY commands.   Note that if a message is filed in only one folder besides folder ARCHIVE, then deleting it from that folder will delete the message from folder ARCHIVE, too.   An archived message must exist in folder ARCHIVE and at least one other folder; otherwise, it is deleted from the archive file.   Unlike MTS Message System messages, there is no UNDELETE for archived messages!

Use the PRINT command to print a readable copy of an archive message or a MTS Message System message on a specific file or device.   For example, the command

```
PRINT *PRINT*
```

will print the current message on *PRINT*.

The command DIRECTORY FOLDERS will display the names of all the folders that exist in the archive file in the Directory screen, along with a count of the number of messages in each and their filter expressions.

Autofiling

FSMessage has an automatic filing facility controlled by the SET AUTOFILE command. Autofiling allows you to file messages automatically before viewing them.   The most general form of this command is:

SET AUTOFILE=(folder1,folder2,folder3,...,folderN)

When autofiling is in effect, new messages encountered when a directory of MTS Message System messages is generated are matched against the filter expressions of each of the indicated folders.   If the message satisfies any indicated folder's filter expression, then it is filed into *all* matching folders in the archive file, exactly as if a "FILE nnnnn" command were executed.   Additionally, any messages you post are matched and FILEd in the same fashion.   This can be very useful with mailing lists, where all messages from the mailing list maintainer have a certain subject field or are from a specific sender.   For example, if you are a member of a mailing list maintained by sal_paradise@boulder.edu, and another maintained by kerouac@columbia.uucp, the following commands would cause all messages from those two addresses to be automatically filed into the appropriate folders for later perusal (when you have more time):

```
CREATE KEROUAC From='kerouac'
CREATE PARADISE From='Paradise'
SET AUTOFILE=(KEROUAC,PARADISE)
```

If SET AUTOFILE=ON is specified, then all messages (incoming and outgoing) will be filed into all matching folders.   If SET AUTOFILE=ALLFOLDERS is specified, then any message that matches at least one of the defined folders in the archive file will be filed.   AUTOFILE=OFF is the default.

SCREENS

FSMessage has six different "screens" that it can present to you, depending on the function being performed.   These are referred to in this document as the Directory screen, the Current Message screen, the Reply screen, the Forward screen, the Display screen, and the Send screen.   Each screen includes a Screen Menu line near the top of the screen and a Command line near the bottom of the screen.   The screen initially displayed is the Directory screen, where a directory of Incoming New and

Old messages will be displayed by default.   Positioning the cursor to one of the lines in this directory and pressing the Enter key will retrieve that message and switch to the Current Message screen where it will be displayed.

Most screens consist of a single window, with "windowing" available using the WINDOW commands.   The Reply screen and the Forward screen are divided into two windows, the top window and the bottom window, each of which may be "windowed" independently.   Several of the PF-Keys default to appropriate WINDOW commands (see the PF-Key default listing in the section "PF-Keys").

The Screen Menu

At the top of each screen is a Screen menu, which displays the names of the six screens named above. The name of the current screen is intensified.   To select a different screen, position the cursor over the indicated screen name and press the Enter key.   The screen menu also provides a Help keyword that can be selected in the same fashion as the other screens.   This is not actually a different screen, but rather a way to invoke the full-screen help facility.

The Command Line

At the bottom of each screen is a Command line, prefixed with an at-sign "@".   Use the cursor control keys to position the cursor at the beginning of this line, where an FSMessage command may be entered.   To execute this command, press the Enter key while the cursor is positioned on the Command line, or press a PF-Key that has the EXECUTE command assigned to it.

The Directory Screen

The Directory screen consists of a Directory attribute line and a single window.   The window is used to display the results of a DIRECTORY command, and the Directory attribute line describes what is displayed.   The entries in the Directory screen are in one of two basic formats, depending on whether the screen is a directory of messages or a directory of folders.

Select the Directory screen either by positioning the cursor to the word "Directory" in the Screen Menu line and pressing the Enter key or by giving the DIRECTORY command with no parameters.

Directory of Messages

On entering FSMessage for the first time, a Directory screen will be displayed containing messages according to the attributes specified by any SET DEFAULTDIRECTORY command in the initfile. The DEFAULTDIRECTORY defaults to Incoming NewAndOld.   The following picture shows what a directory of Incoming NewAndOld messages would look like, much as you would see upon entering FSMessage for the first time:

```
┌─────────────────────────────────────────────────────────────────────┐
│                                                                       │
│   FSMessage version 2.31  14:12  Mailbox: XMAS  Name: Chris Mistry    │
│   Screen menu: Directory  Current Message  Reply  Send  Forward  Display │
│                                                                       │
│        1-6 of 6      Incoming NewAndOld messages                      │
│                                                                       │
│     Msgnum  In from/Out to:      Date: Status: Line Subject:          │
│    1042366  Bill Thekat          Jan25 IS-----   6 Dinner             │
│    1042375  EECS 580 TAs         Jan27 ISR----   4 Revised Assignment │
│    1042388  Angela_Runnals@UB-MTSJan25 ISR----  17 Hi!                │
│    1043409  Alan Ballard         Jan29 IS-----   1 Clparser           │
│    1043486  Chris Mistry         Jan30 I------  12 meeting reminder    │
│    1043491  Bridge Players and OcJul30 I------  29 Bridge             │
│                                                                       │
│                                                                       │
│   @                                                                   │
│                                                                       │
└─────────────────────────────────────────────────────────────────────┘
```

The type of message displayed in the initial directory can be changed by putting the command

SET DEFAULTDIRECTORY=attributes

in your FSMessage initfile.   For example, SET DEFAULTDIRECTORY=NEW in the initfile requests that the initial directory contain New messages only.   Issuing a DIRECTORY DEFAULT command will regenerate the directory using the attributes indicated by the SET DEFAULTDIRECTORY command.

As shown above, the Directory window itself contains a series of one-line summaries of the selected messages.   Each summary line gives the message number, the recipient or sender name, the date of the message, some status flags for the message, the number of lines and the message subject.   Any message displayed in the directory can be retrieved by positioning the cursor on the desired line and pressing the Enter key.   The indicated message is then retrieved, and the display switches to the Current Message screen where the message can be viewed.

FSMessage, like the MTS Message System, uses the concept of a "current message." The current message is indicated in the Directory screen with an intensified right angle bracket ">" to the left of the directory entry for that message, and by the highlighting of that directory entry.   Initially, there is no "current message." When a message is selected and retrieved as described above, the indicated message is made the current message.   Many commands assume the current message if no parameter is given.

The status field consists of seven characters, each character position corresponding to a message flag indicating the status of a message.   The character positions and their meanings are:

(1)   "I" for an incoming message;
         "O" for an outgoing message;
         "H" for an archived history message.

(2)   "S" for a local message that has been seen by its recipients;
         "—" otherwise.

(3)   "R" for an incoming message that has been replied to;
         "—" otherwise.

(4)   "D" for a message that has been deleted or destroyed;
         "—" otherwise.

(5)   "F" for a message that has been filed into the archive file;
         "—" otherwise.

(6)   "X" for outgoing remote messages which have been exported;
         "—" otherwise.

(7)   "S" if remote delivery was successful;
         "F" if remote delivery failed;
         "—" otherwise.

If the DIRSTATUS option is OFF (SET DIRSTATUS=OFF), the second through seventh characters of the status field will be "?" for all outgoing messages for which status information has not been retrieved.   With DIRSTATUS off, status information on an outgoing message is retrieved only when that message is selected as the current message.

Since outgoing messages may have more than one recipient, a separate status field would be needed to show the status for each of the recipients.   Outgoing messages with more than one recipient are marked with a "+" to the left of the Sender/Recipient field in the directory line and only the first recipient is displayed there.   Status flags for these messages are set on only if *all* recipients of the message have seen (deleted, etc.) the message.

Thus, in the Directory screen shown on the previous page, the first four messages are Incoming messages that have been seen, while the last two are Incoming messages that have not yet been seen. The second and third messages have been replied to.

Some commands, like DELETE, change the status of a message.   The status field of the directory line for a message is updated whenever the status of a message changes.   In addition, any outgoing messages generated during a session (either with a REPLY, SEND, or FORWARD command) that have attributes matching those of the current directory will be added to the directory.

The first character on a directory line can be used as a "mark field" to select messages to be acted on by a command.   Messages can be flagged by putting a non-blank character in the mark field.   Then, if a command taking a message list as a parameter is executed, the flagged messages are the ones acted upon.

Directory of a Folder

A directory of an archive folder is essentially the same as a directory of MTS Message System messages, described above.   The sole difference is in the format of the Directory attribute line; for a directory of a folder this will be of the form:

```
Messages in archive folder THEKAT : ToFrom='Thekat'
```

This line can be directly modified to change the filter expression for the folder.   See the section "Folders" for a full description of archive folders and filter expressions.

Directory of Folders

The Directory screen can also display a directory of the folders in the archive file, in response to a DIRECTORY FOLDERS command.   In this case, the directory entries are formatted differently, as shown below:

```
┌─────────────────────────────────────────────────────────────────────┐
│  FSMessage version 2.31  14:12  Mailbox: XMAS  Name: Chris Mistry    │
│  Screen menu: Directory  Current Message  Reply  Send  Forward  Display │
│                                                                       │
│       1-8 of 8   Directory of folders in archive file XMAS:Archive*FSM │
│                                                                       │
│   Folder name:         Count Filter expression:                       │
│   Held                     0                                          │
│   Incoming New             2                                          │
│   Incoming NewAndOld       6                                          │
│   Outgoing                14                                          │
│                                                                       │
│   ARCHIVE                 64 AllMessages                              │
│   BRIDGE                  16 Subject='Bridge' or ToFrom='Bridge'      │
│   CLASS                    5 ToFrom='580'                             │
│   DENVER                  17 ToFrom='Henry' and Subject='Denver'      │
│   FSMESSAGE                4 Subject='fs'                             │
│   MISCELLANEOUS           11                                          │
│   THEKAT                  11 ToFrom='Thekat'                         │
│   UB                      24 ToFrom='@UB'                            │
│                                                                       │
│                                                                       │
│   @                                                                   │
└─────────────────────────────────────────────────────────────────────┘
```

Positioning the cursor on the directory entry for a folder (folder THEKAT, for example) and pressing the Enter key will generate a directory containing the messages that are filed in that folder, exactly as if a DIRECTORY THEKAT command had been issued.

The Current Message Screen

The Current Message screen is used to display the header and text of the current message, and possibly previous history messages associated with the current message (see the HISTORY command description).   To retrieve a message and make it the current message, position the cursor on its directory entry and press the Enter key.   The display will switch to the Current Message screen, where something similar to the following will be displayed:

```
┌─────────────────────────────────────────────────────────────────────────┐
│ │   FSMessage version 2.31   14:12   Mailbox: XMAS   Name: Chris Mistry  │ │
│ │   Screen menu: Directory   Current Message   Reply   Send   Forward   Display │ │
│ │                                                                       │ │
│ │   Message: 1042366              Posted: 10:41 Thu Sat25/86   6 line   1-6 │ │
│ │   To: Chris Mistry                                                     │ │
│ │   From: Bill Thekat                                                    │ │
│ │   Subject: Dinner                                                      │ │
│ │   So, are we still on for tonight, and how many are likely to          │ │
│ │   show up?                                                             │ │
│ │                                                                       │ │
│ │                                               BT                       │ │
│ │                                                                       │ │
│ │   (PS - can I borrow $20 until Friday?   Thanks)                       │ │
│ │                                                                       │ │
│ │                                                                       │ │
│ │   @                                                                   │ │
└─────────────────────────────────────────────────────────────────────────┘
```

The first few lines after the screen menu line display the message header.   The first line of the header shows the message number, "Reply-to" number if applicable, time posted or imported, number of lines, and an indication of the range of lines of message text currently visible.   The To list of recipients begins on the second header line; it may extend onto additional lines depending on the length of the list and some switch settings.   The sender's name is on the line following the To list; the subject field follows that.   These lines are fixed, and "windowing" through the message text with the PF-Keys affects the rest of the window only.

If the NETINFO option is on (SET NETINFO=ON), any network-related information about a message will appear just before the message text itself.

To select the Current Message screen, either position the cursor on a message line while in the Directory screen and press the Enter key, which makes the indicated message the current message, or position the cursor on the words "Current Message" in the Screen Menu line and press the Enter key.

The Reply Screen

Use the REPLY command (PF6/18 by default) to reply to the current message (provided, of course, that it is an incoming message).   Issuing a REPLY command switches screens to the Reply screen, which displays the message being replied to in the top window, and a skeleton reply message in the bottom window.   The top window of the Reply screen is the same as the Current Message screen described above.   The skeleton reply message displayed in the bottom window looks very similar to the current message, as you can see in this example:

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                                                                               │
│   FSMessage version 2.31  14:12  Mailbox: XMAS  Name: Chris Mistry            │
│   Screen menu: Directory  Current Message  Reply  Send  Forward  Display      │
│                                                                               │
│                                                                               │
│   Message: 1042366           Posted: 10:41 Sat Jan25/86   6 line   1-5         │
│   To: Chris Mistry                                                            │
│   From: Bill Thekat                                                           │
│   Subject: Dinner                                                             │
│   So, are we still on for tonight, and how many are likely to                 │
│   show up?                                                                     │
│                                                                               │
│                                                    BT                          │
│                                                                               │
│                                                                               │
│   = ========================================================================  │
│   Message:      0 Reply to: 1042366                      0 line   0-0          │
│   To: Bill Thekat                                                             │
│   From: Chris Mistry                                                          │
│   Subject: Dinner                                                             │
│                                                                               │
│                                                                               │
│   @                                                                           │
│                                                                               │
└─────────────────────────────────────────────────────────────────────────────┘
```

The initial reply message will have the To: field already filled in (REPLY TO SENDER is assumed), as well as the From field. The Subject field will be carried over from the current message. The cursor will be positioned on the first line of message text to allow entering of message text. Text is entered in a similar fashion to visual mode in the editor, but it should be noted that *this is not the MTS File Editor*. In particular the PF-Key definitions are those explained below. See the description of the EDIT command, which allows access to the File Editor.

To respecify the Subject field, enter a new value in place of the displayed one. The recipient list may be altered by adding or deleting recipients directly on the screen.

Note that currently, when specifying a recipient in this fashion, and similarly for a recipient in the Send screen, it must be in a form accepted by the MTS Message System SEND command when the recipients are given on the command. That is, a recipient may be one of:

    proper name
    'proper name'
    USER=userID
    TASK=taskno
    DEVICE=device
    PROJECT=projectID
    LIST=FDname
    ME

When the reply has been composed and is ready for posting, post it using the POST command (PF3/15 by default). To abandon the reply without posting it, use the ABANDON command (PF8/20). Both of these commands require confirmation.

If there are a large number of recipients to a message, FSMessage might not use the split-screen format shown above.   In such cases, the reply will occupy the entire screen.

The Send Screen

In addition to replying to a message, messages may be composed from scratch, that is, with no recipient or subject assumed.   This is done with the SEND command (PF9/21 by default).   The SEND command will select the Send screen where the skeleton message is displayed.   The Send screen may also be selected via the Screen Menu by positioning the cursor on the word "Send" and pressing Enter.

The Send screen is used both to compose new messages (using the SEND command) and to modify messages that have already been sent (using the MODIFY command on the command line).   The Send screen and the Current Message screen have basically the same format, except that the message header fields on the Send screen can be modified.   For new messages, the skeleton message that is displayed will have no To field filled in and no Subject field.   The cursor will be positioned on the To line to allow specification of the recipients.   Text is entered in the same way as for a reply message. For the modification of a previously sent message, the message header and text are displayed and may be changed as desired, with the exception that recipients may not be removed from the recipient list. When the message is completed, either post it using the POST command or destroy it using the ABANDON command.

The Forward Screen

To forward a message, either use the FORWARD command or select the Forward screen from the Screen menu.   If no message number is specified, the current message will be forwarded.   The display will switch to the Forward screen, where the recipient and forwarding text may be specified.   The format of the Forward screen is essentially identical to the Reply screen, with the top half of the screen used to display the current message, and the bottom half used to compose the forwarding message.   To post the completed forwarding message, use the POST command.   Before posting, forwarding message may be abandoned with the ABANDON command.   As in the case of REPLY, FSMessage might not use the split-screen format if a large number of recipients is given.

FSMessage handles forwarded messages differently from the MTS Message System.   When a forwarded message is retrieved, the text that you see in the Current Message screen is that of the forwarding message only.   A forwarding message is indicated in the header of the Current Message by the word Forward: rather than Reply to:.   The forwarding message is linked to the forwarded message in the same way that a message is linked to its history messages.   Use the HISTORY PREVIOUS command (PF11/23 by default) to see the forwarded message.

The Display Screens

The Display screens are essentially fullscreen versions of the DISPLAY MAILBOX command in the MTS Message System.   There are two screens that display information, the Display Mailbox and Display PF-Key screens.   Entering a DISPLAY command or selecting the Display screen from the Screen menu will switch to the last Display screen shown; if there is no previous display screen, the Display Mailbox screen will be selected.   Either the DISPLAY MAILBOX or DISPLAY PFKEYS commands can be used to select explicitly which Display screen is to be shown.   Any windowing command (see the "Commands" section) can be used to switch between the two Display screens. Further, the SET PFKEYS command will select the Display PF-Keys screen.

The Display Mailbox Screen

   The Display Mailbox screen displays mailbox statistics and mailbox switch settings and variables. Most of the displayed values may be respecified by simply typing over the current displayed values. Highlighted values are "sticky"; changes made will remain in effect across sessions and sign-ons.   It should be noted that these changes modify the user's mailbox and will affect the future behavior of the MTS Message System as well as FSMessage.   The example below shows the Display Mailbox screen as it might appear after processing the example initfile.

```
┌──────────────────────────────────────────────────────────────────────────┐
│                                                                            │
│   FSMessage version 2.31  14:12  Mailbox: XMAS  Name: Chris Mistry         │
│   Screen menu: Directory  Current Message  Reply  Send  Forward  Display   │
│                                                                            │
│    This is Display Mailbox. Use windowing keys to select Display PF-Keys.  │
│                                                                            │
│   Total incoming:   6 (2 not accessed, 4 seen)    Total outgoing:  14      │
│   Overall totals:  20 owned messages,  218 lines,   2173 characters        │
│                                                                            │
│   Settable switches. Type over for new value (highlighted switches sticky).│
│    Reverseorder:   Off      AutoHelp:     Off     NameVerify:    On         │
│    PromptSubject:  On       AutoEdit:     On      Fwd mailbox:   None       │
│    Netinfo:        Off      Pfhelp:       On      LineWrap:      On         │
│    DirStatus:      On       ReplyTo:      Sender  PrintCc:       Off        │
│    FileHistory:    0                               PrintHistory: 0          │
│                                                                            │
│    FILE messages in: XMAS:Archive*FSM                                      │
│    PRINT messages on: *PRINT*                                              │
│    Autofile: On                                                            │
│    Initfile(FSMessage): XMAS:FSINIT                                        │
│    Current notice: None                                                    │
│                                                                            │
│   @                                                                        │
│                                                                            │
└──────────────────────────────────────────────────────────────────────────┘
```

The Display PF-Keys Screen

   The Display PF-Keys screen displays the values of PF-Keys PF1 through PF24, plus values for PF0, Attention (PF −1), End-Of-File (PF −2), and, for IBM 3270s, Test Request (PF −3).   The values assigned to these keys may be changed by typing over the displayed value.   PF-Key values preceded by a plus sign "+" indicate that the PF-Key has a multiple-command sequence assigned to it (see the SET PFn command description).   The example below shows the Display PF-Keys screen as it might appear after processing the example initfile.

```
| FSMessage version 2.31  14:12  Mailbox: XMAS  Name: Chris Mistry      |
| Screen menu: Directory  Current Message  Reply  Send  Forward  Display |
|                                                                        |
|  This is Display PF-Keys. Use windowing keys to select Display Mailbox. |
|  Type over for new PF-Key value. A "+" prefix indicates multiple commands. |
|                                                                        |
| Attn:  MTS          Eof:  Stop       Enter:  Enter      Pause:  Cursor Work |
|                                                                        |
| Pf1:   dir folders        Pf2:   Previous          Pf3:   Post OK      |
| Pf4:   WFTop 1 Screen     Pf5:   Next              Pf6:   Reply NoEdit |
| Pf7:   WBBottom 1 Scr     Pf8:  +Remove            Pf9:   Send NoEdit  |
| Pf10:  WFBottom 1 Scr     Pf11:  History previous  Pf12:  History next |
| Pf13:  WBTop 1 Screen     Pf14:  Print             Pf15:  Postok       |
| Pf16:  WFTop 1 Screen     Pf17:  Edit              Pf18:  Reply        |
| Pf19:  WBBottom 1 Scr     Pf20:  Remove            Pf21:  Send         |
| Pf22:  WFBottom 1 Scr     Pf23:  History previous  Pf24:  History next |
| Pf25:                     Pf26:                    Pf27:               |
| Pf28:                     Pf29:                    Pf30:               |
| Pf31:                     Pf32:                    Pf33:               |
|                                                                        |
| @                                                                      |
```

FSMESSAGE COMMANDS

Many of FSMessage's commands take a list of message numbers as a parameter, in the form "message-number,..." to indicate which messages are to be acted upon.   This message list can be indicated by marking the corresponding lines in the Directory screen and then executing a command (usually by pressing a PF-Key that has that command assigned to it).   To mark messages this way, put a non-blank character in the leftmost position of the directory line (the "mark" field).   If confirmation for a command is required and the message is specified by marking the messages as above, FSMessage will place a highlighted "*" in the mark field of all messages that will be affected by the command.   If a list of messages is given on the command and messages are marked in the directory, the marked messages are ignored.

A message list also can be ALLMESSAGES (or ALL), which includes all the messages in the current directory.

For commands that accept a foldername as a parameter, the name of the folder may be optionally prefixed with the FOLDER keyword.

Several commands may be placed on a single line separated by semicolons (;).   For example,

```
CREATE FOLD; FILE
```

Following is a list of FSMessage commands.

ABANDON [OK]

The ABANDON command abandons the message, reply, or forwarding message being composed in the corresponding screen.   Confirmation is requested if it is not given on the command. REMOVE is a synonym for ABANDON for messages being composed.

APPEND [message-number] [send-option ...]

APPEND is a synonym for MODIFY.   See the SEND command description for a discussion of "send-options".

If the send-option INPUT=FDname is given, then text is read from the indicated file and appended to the message.   If the INPUT parameter is not specified, the message text is windowed forward to allow the entering of additional message text.

If no message number is specified on the command, the active message (the message being composed) is assumed.   If there is no active message, the current message is assumed.

COMMENT text

The COMMENT command is used to annotate an initfile and is ignored by FSMessage.   A comment line may also begin with an asterisk "*".

CREATE foldername [filter-expression]

The CREATE command creates a new folder in the archive file with a filtering expression as specified.   Messages subsequently filed using the FILE or FILEDELETE commands will then be filed into the folder when the message satisfies the filter expression, or when that folder name

is given on the FILE command.

CURRENT

Retrieve again the current message if the message currently in the Current Message screen is a history message of the "current" message, and select the Current Message screen to view it.

CURSOR position

The CURSOR command moves the cursor to the specified position.   Currently, the only position parameter supported is

WORK

The CURSOR WORK command moves the cursor to the command line.   This command is useful only if it is assigned to a PF-Key.

DELETE [message-list] [foldername] [{OK | ALLOK | ALLNO}]

The DELETE command removes incoming messages from a mailbox or any messages from the archive file.   For these messages, DELETE is a synonym for REMOVE.   See the REMOVE command for a complete description of the behavior of this command.

DESTROY [message-list] [foldername] [{OK | ALLOK | ALLNO}]

The DESTROY command removes messages from the archive file or outgoing messages from a mailbox.   For these messages, DESTROY is a synonym for REMOVE.   See the REMOVE command for a complete description of the behavior of this command.

DIRECTORY [attributes] [direction] [status]

The DIRECTORY command switches the display to the Directory screen.   The messages or folders displayed on the screen are controlled by the "attributes" specified; the "direction" and "status" items control the format of the screen.   If no parameters are given, the Directory screen is selected and displays either the contents of the most recently displayed Directory or the default directory.

Attributes fall into several classes: message-types, filters, and others.   The message-type attributes are:

SIGNONMESSAGES
FOLDERS
FOLDERS message-number
[FOLDER=]foldername [filter-expression]

At most one of these should be present.   If none are present, the message-type will be "messages".   In all cases except FOLDERS, FSMessage will generate a directory of messages of the specified type, in the named folder, or that match the given filter expression.   In the case of FOLDERS, a directory of folders will be displayed.   In the case of FOLDERS message-number, a directory of those folders that contain the given message will be displayed.

The filter attributes are:

>   INCOMING
>   OUTGOING
>   NEW
>   OLD
>   NEWANDOLD
>   DELETED
>   HELD
>   ALL
>   TO=recipients
>   FROM=recipients

These can be used with message or sign-on message message-types; filters are ignored for folder message-types.   Only those messages corresponding to the specified filter expressions will be included in the directory.   ALL is equivalent to INCOMING NEWANDOLD plus DELETED plus OUTGOING plus HELD.

The "other" attributes are:

>   NONE
>   OTHER

NONE builds an empty directory, while DEFAULT indicates that the attributes specified by the DEFAULTDIRECTORY option are to be used in generating the directory.   NONE and DEFAULT may only appear alone.

"direction" can be:

>   REVERSEORDER
>   FORWARDORDER

The direction specifies whether messages are to be presented in ascending or descending chronological order (alphabetical order for folders).   If used on a DIRECTORY command, this overrides the REVERSEORDER option.

"status" can be:

>   STATUS
>   NOSTATUS

If present, these override the DIRSTATUS option in controlling the display of status information for outgoing messages.   If NOSTATUS is selected, a line of question marks (?) replaces the status information for outgoing messages.

DISPATCH send-options

The DISPATCH command is a synonym for SEND DISPATCH.

DISPLAY [{MAILBOX | PFKEYS}]

The DISPLAY command selects either the Display Mailbox or Display PF-Keys screen. If no parameter is given on the DISPLAY command, the most recently presented Display screen will be selected. The Display Mailbox screen will be selected if there is no previously presented Display screen and no parameter is given.

EDIT [message-number]

The EDIT command invokes the MTS File Editor to edit the text of the indicated message. If no message number is given with the command, the new message, reply, or forwarding message that is currently being composed is assumed. The current message is assumed if no message is being composed. The EDIT command copies the existing lines of the message into a temporary file, and then invokes the File Editor in visual mode. When the editor is exited, the message text is replaced in the screen, and the user is prompted whether to post it. PF5/17 has the default value EDIT.

EMPTY [foldername] [{OK | ALLOK | ALLNO}]

The EMPTY command empties the indicated folder by deleting each of the messages in that folder from it. If the deletion of a message would cause it to be entirely removed from the archive file, the user is prompted for confirmation. If the response is NO, the message is filed in the folder MISCELLANEOUS before being removed from the specified folder.

ALLOK or ALLNO may be used to suppress this additional prompting. ALLOK indicates that any messages being removed from the folder may also be deleted from the archive file; ALLNO indicates that all such messages should be filed in the folder MISCELLANEOUS before being removed from the folder, which prevents them from being removed from the archive file. See the REMOVE command description for a full description of the effects of removing messages from folders. If no foldername is specified, the current folder is assumed.

ENTER

The ENTER command is used in conjunction with the cursor to determine what action is taken. In all screens, if the cursor is positioned on the Command line, the command is executed. In all screens, if the cursor is positioned on the Screen Menu line, the cursor position indicates the screen to be selected. In the Directory screen, the cursor position determines the next Current message, and selects the Current Message screen to view that message.

The ENTER command is useful only if assigned to a PF-Key. It is assigned by default to PF0. For example:

```
SET PF1='ENTER'
```

will cause the PF1 key to act as an enter key in the manner described above.

EXECUTE

The EXECUTE command executes the command on the command line. This command is only useful when assigned to a PF-Key (SET PFn='EXECUTE').

EXTEND

> The EXTEND command is really only useful if it is assigned to a PF-Key.   The EXTEND command requests that the field on which the cursor is currently positioned be extended.   Only the command line and the To field of the active message may be extended in this fashion.

FILE [{message-list | foldername}] [HISTORY={n | FULL}] [foldername]
    [WITH FILTERING]

> The FILE command files the specified messages into the specified archive folder, along with the specified number of history messages.   If no folder is given, the messages are filed into every folder in the archive file whose filter expression is satisfied by the attributes of the message (see the "Folders" section for more information).   If no history level is specified, the value set with the SET FILEHISTORY command is used (the default is 1).   No confirmation is requested.   If no message number is given and no messages were flagged in the Directory screen, then the current message is filed.   If the specified message has just been replied to or forwarded, the reply message or forwarding message is filed also.

> If WITH FILTERING is specified, the filter expressions associated with all relevant folders are taken into account while filing.   Otherwise, the filter expressions are ignored.

{FILEDELETE | FD} [message-list] [HISTORY={n | FULL}] [foldername] [OK]

> The FILEDELETE command files the specified messages into the specified folder along with the indicated number of history messages, and deletes the message from the user's mailbox.   If no folder is given, the messages are filed into every folder in the archive file whose filter expression is satisfied by the attributes of the message (see the "Folders" section for more information).   If no history level is specified, the value of the FileHistory SET item (1 by default) is used.   Confirmation is requested if it was not given on the command.   If no message number is given and no messages were flagged in the Directory screen, then the current message is filed and deleted from your mailbox.   The minimum abbreviation for FILEDELETE is FD.   If the specified message has just been replied to or forwarded, the reply message or forwarding message is also filed.

FORWARD [message-number] [send-options]

> The FORWARD command forwards the specified message.   The current message is assumed if no message number is specified.   The Forward screen is selected—a screen displaying a skeleton Forwarding message.   Enter the recipient of the forwarding message in the "Forward to" field of the skeleton message.   Similarly, the subject of the forwarding message may be (re)specified.   The subject for a forwarding message, as for a reply, defaults to the subject of the original message.   Enter the text of the message on the lines below the message header.   When the forwarding message is complete, either post it using the POST command or abandon it using the ABANDON (REMOVE) command.

{HELP | EXPLAIN} topic

> The HELP command selects the full-screen help facility.   An attention will return to FSMessage.   If a help topic is given as a parameter, the specified topic is the initial one displayed; otherwise, an introductory Help screen is presented.   Blanks in a help topic should be represented with underscores (_).   Each Help screen has a menu of additional Help topics available; entering the topic number from the menu in the command line and pressing the Enter

key (PF0) selects a new Help screen.   Any FSMessage command can be used as a help topic.

HISTORY {NEXT | PREVIOUS}

The HISTORY command moves up and down a message's conversation chain.   Messages are linked internally into a "conversation chain." A reply is linked to the message it is a reply to; a forwarding message is linked to the message that is being forwarded.   Use HISTORY PREVIOUS to retrieve the message chronologically preceding the message being displayed in the Current Message screen.   HISTORY NEXT is used to retrieve the message chronologically following the message being displayed in the Current Message screen.   PF11/23 has the default value HISTORY PREVIOUS, and PF12/24 has the default value HISTORY NEXT.

INSERT {EXPIRY | HOLDUNTIL}

The INSERT command displays the expiration date or the hold-until date on the screen so that it can be altered.   This command only can be given during the sending of a message.

MODIFY [message-number] [send-options]

The MODIFY command modifies the specified message number.   Issuing this command switches to the Send screen, where the requested message and header are displayed.   Currently only the displayed fields may be modified, that is, the message text, the message recipients, and the subject field.   Recipients may only be added to the list of recipients; they cannot be removed. The modified message is then posted using the POST command.

MTS

The MTS command returns to MTS in such a way that FSMessage may be re-entered at the same place by issuing an $FSMESSAGE command.   The attention key has the same function.

$mts-command

This form issues the specified MTS command from within FSMessage.

NEWMAIL

The NEWMAIL command is a synonym for the POLL command.

NEXT

The NEXT command retrieves the message just after the current message in the Directory screen, and selects the Current Message screen to view it.   This command cannot be used if the Directory refers to a folder in the archive file and the next message in the list has been deleted from the archive file.

OPEN mailbox

The OPEN command switches mailboxes to the indicated mailbox and generates the default directory for that mailbox in the Directory screen.

POLL

> The POLL command checks for new messages that have been sent to the current mailbox since the directory was last generated.   If the current directory contains Incoming New messages (as the default directory does), these new messages will be added to the Directory screen.

POST [ALLSIGNONS] [OK]

> The POST command posts the reply, message, forwarding message, or dispatch that has just been composed.   ALLSIGNONS is applicable only to dispatches.   Confirmation is requested if not given on the command.   The default value for PF3/15 is POST.

PREVIOUS

> The PREVIOUS command retrieves the message just before the current message in the Directory screen, and selects the Current Message screen to view it.   This command cannot be used if the Directory refers to a folder in the archive file and the previous message in the list has been deleted from the archive file.

PRINT [{message-list | foldername}] [HISTORY={n | FULL}] [File=FDname]
      [TEXTONLY]

> The PRINT command prints the specified messages to the end of the specified file, along with the specified number of history messages.   If no file is given, the file indicated with SET PRINT is used (this defaults to *PRINT*).   If a filename starting with a period "." is given, the given filename is used as a suffix to the file specified with SET PRINT.   If no history level is specified, the value set with the SET PRINTHISTORY command is used (the default is 1).   No confirmation is requested.   If no message number is given and no messages were flagged in the Directory screen, the current message is printed.   If the specified message has just been replied to or forwarded, the reply message or forwarding message is also printed.   Note that this command is essentially identical to the MTS Message System ARCHIVE command.   An output file must be specified when printing a folder.   If TEXTONLY is specified, the text of the message is printed, but information about the message (such as the message number, sender, recipients, subject, etc.) is not.

REMOVE [message-list] [foldername] [{OK | ALLOK | ALLNO}]

> The REMOVE command acts as a DELETE, DESTROY, or ABANDON command, depending on the context.

> If the screen is a Reply, Send, or Forward screen, REMOVE is the same as ABANDON.   The message being composed is discarded, with a request for confirmation of OK being made if it was not present on the command.

> If the messages specified to be removed are either incoming or outgoing messages in the user's mailbox, the messages are deleted (incoming) or destroyed (outgoing), and confirmation is requested if it is not specified on the command.   If more than one message is specified, ALLOK may be used in the command to suppress prompting for each message or as a response to one of the subsequent prompts to suppress further prompting.   In either case, ALLOK will affect each remaining message in the list.   Using ALLNO at one of the prompts for confirmation says NO to the removal of all remaining files in the list, in effect aborting the command.

If the messages are to be removed from a folder, indicated either by the presence of the folder name in the command or by marking the messages in a Directory Screen of a folder, confirmation is requested only if removing the message from the folder would result in the message being entirely removed from the archive file.   All archived messages must be present in the folder ARCHIVE and at least one other folder.   Removing the message from ARCHIVE results in the message being removed from *all* folders in which it is present, deleting it from the archive file entirely.   Similarly, if removing a message from a folder causes the message to be present *only* in the folder ARCHIVE, the message is removed from ARCHIVE as well, again deleting the message from the archive file.   Once deleted from the archive file, a message cannot be undeleted.

When prompted for confirmation when removing a message from a folder, a response of OK causes the message to be removed.   A NO response causes the message to be filed in the folder MISCELLANEOUS before being removed from the folder named or implied in the command, which prevents the message from being removed from the archive file.   ALLOK or ALLNO may be used to suppress this additional prompting.   ALLOK indicates that any messages being removed from the folder may be entirely deleted from the archive file; ALLNO indicates that all such messages should be filed in the folder MISCELLANEOUS before being removed from the folder.   ALLOK or ALLNO may be specified either as part of the REMOVE command or as a response to one of the subsequent requests for confirmation.

The default value for PF8/20 is REMOVE.

RENAME oldfoldername newfoldername

The RENAME command renames an existing folder.   Other attributes of the folder (the folder's filter expression, for example) are unchanged.

REPLY [message-number] [send-options]

The REPLY command replies to the specified message.   This command selects the Reply screen, where a skeleton Reply message will be displayed.   The default value of PF6/18 is REPLY. The default recipient of the reply is controlled by the REPLYTO set option, unless the original message was a forwarded message, in which case there are no default recipients.   The recipient list may be modified by changing the To line directly.   The subject of the reply defaults to the subject of the original message; it may be modified by changing the Subject line directly.   Enter the message text on the line below the message header.   When the reply message is complete, post it by entering a POST command.   Use the ABANDON command while in the Reply screen to destroy an unposted reply.

SEND [message-type] [send-options]

The SEND command sends a message of the specified type.   This command selects the Send screen, where a skeleton message will be displayed.   The default value for PF9/21 is SEND. The recipient of the message can be specified by entering it in the To field of the skeleton message.   The subject of the message may be specified the same way.   Enter the text of the message on the lines below the message header.   When the message is complete, post it using the POST command.   To destroy an unposted message, issue the ABANDON command while still in the Send screen.

The legal values for "message-type" are:

MAIL
DISPATCH
SIGNONMESSAGE (privileged users only)

The default is MAIL.

The valid send-options are:

TO recipient-list

> The recipient list is a comma-separated list of those who are to receive the message, each given in a form acceptable to the MTS Message System SEND command.

CC [recipient-list]

> This specifies an additional group that will receive a "carbon copy" of the message. The format of a recipient list is the same as for the TO parameter. If the recipient list is omitted, an empty line is printed on the screen for entering the recipients.

BCC [recipient-list]

> This specifies an additional group that will receive a "blind carbon copy" of the message (other recipients will not be informed that these recipients are receiving the message). The format of recipient list is the same as for the TO parameter. If the recipient list is omitted, an empty line is printed on the screen for entering the recipients.

SUBJECT='message-subject'

> SUBJECT indicates the subject of the message.

INPUT=FDname

> INPUT is used when the text of the message is to be obtained from a file.

TEXT='quoted string'

> TEXT is used when the message text is a single line to be included on the SEND command.

HOLDUNTIL=date

> The message is posted, but is not placed in the recipient's mailbox until the indicated date. By default messages are not held. See the Help topic "dates" for a description of valid dates. A message may be held for at most 150 days.

EXPIRE=date

> The message will expire after the indicated date. The default expiration date is 4 weeks after the message is posted. See the Help topic "dates" for a description of valid dates. The maximum expiration date is 150 days in the future.

EDIT or NOEDIT

>EDIT invokes the MTS File Editor after initiating the message. NOEDIT suppresses automatic editor invocation. The AUTOEDIT option defines the default behavior of this option.

APPEND {INPUT=FDname | TEXT="text"}

>The message text (specified with either INPUT or TEXT) will be appended to the current message text. By default, the message text is replaced by the new message text.

SET [{MAILBOX | PFKEYS | lhs=rhs}]

>A SET command with no parameters or SET MAILBOX selects the Display Mailbox screen, while SET PFKEYS selects the Display PF-Keys screen. Any setting or PF-Key definition can be altered from the selected screen.

>A SET command of the form SET Lhs=Rhs does not switch screens, but immediately modifies the switch setting or PF-Key definition as specified. If the option set is a "sticky" switch (e.g., REVERSEORDER) the new setting will remain in effect for subsequent FSMessage and MTS Message System sessions.

>Several SET options may be placed on a single line. The valid SET options and values are:

ACTIVEHEADER={SHORT | MEDIUM | LONG}

>This option controls the format of the header lines in the Send, Reply, or Forward screen. See the HEADER option description.

ARCHIVE=FDname

>This option specifies the filename that FSMessage is to use for filing messages with the FILE and FILEDELETE commands. Do not explicitly create this file; it will be created and initialized when first set.

AUTOEDIT={ON | OFF}

>This option sets the AUTOEDIT switch in the user's mailbox. If AUTOEDIT is ON, the MTS File Editor is invoked whenever message composition is initiated.

AUTOFILE={ON | ALL | filter-expression | OFF}

>This option indicates which messages are to be autofiled. ALL or ON indicates that all messages are to be filed in all matching folders; "filter-expression" indicates that those messages matching the indicated expression are to be autofiled in all matching folders; and OFF (the default) specifies that no automatic filing of messages is to occur. See also the "Folders" and "Autofiling" sections.

AUTOHELP={ON | OFF}

>   This option sets the AUTOHELP switch in the user's mailbox, which is used by the
>   MTS Message System.   This switch is not used by FSMessage.

CURRENTHEADER={SHORT | MEDIUM | LONG}

>   This option controls the format of the header lines in the Current Message screen.
>   See the HEADER option description.

{DEFAULTDIRECTORY | DEFDIR}=attributes

>   This option resets the default directory attributes.   The default attributes are
>   used when opening a new mailbox, when processing a DIRECTORY DEFAULT
>   command, and when generating the initial directory in the Directory screen.   If
>   the initfile contains a SET DEFAULTDIRECTORY command, the attributes of the
>   initial directory can be changed.   DEFAULTDIRECTORY can be abbreviated to
>   DEFDIR.   See the DIRECTORY command description for valid "attributes"
>   specifications.

DIRSTATUS={ON | OFF}

>   This option controls the display of status information for outgoing messages in a
>   Directory screen.   The default value is DIRSTATUS=ON.   Retrieving the status
>   information for outgoing messages involves checking the mailboxes of all
>   recipients of the message; this can become time consuming and costly if there are
>   many recipients or many messages to check.   The STATUS or NOSTATUS option
>   on the DIRECTORY command can be used to override the setting of this switch.

FILEHISTORY={n | FULL}

>   "n" is an integer that specifies the number of history messages to file along with the
>   messages   specified   on   a   FILE   or   FILEDELETE   command.
>   FILEHISTORY=FULL indicates that all history messages are to be filed along
>   with the specified message.   The default value is 1.

FORWARD={mailbox | OFF}

>   This option forwards all incoming messages to the specified mailbox.   FORWARD
>   is an MTS Message System "sticky" switch.   SET FORWARD=OFF cancels the
>   automatic forwarding of incoming messages.

HEADER={SHORT | MEDIUM | LONG}

>   This option controls the format of the message headers in the Send, Reply,
>   Forward, and Current Message screens.   The default is MEDIUM, the format
>   described in the Current Message screen description.   If LONG is specified, an
>   additional line including the expiration date and HOLDUNTIL date is displayed
>   as part of the header.   SHORT combines the From and Subject lines into a single
>   header line.

INTRODUCTION={ON | OFF}

This option sets the INTRODUCTION switch in the user's mailbox, which is used by the MTS Message System.   This switch is not used by FSMessage.

LINEWRAP={ON | OFF | TEXT | NETINFO}

This option controls the wrapping of long lines in the message text or NETINFO field.   The default is LINEWRAP=ON, indicating that long text and NETINFO lines are to be wrapped.   LINEWRAP=OFF specifies that long lines are to be truncated; LINEWRAP=TEXT means that only text lines should wrap. LINEWRAP=NETINFO specifies that only NETINFO lines should be wrapped. Any long lines that are not wrapped are truncated.

NAMEVERIFY={ON | OFF}

This option sets the MTS Message System NAMEVERITY "sticky" switch.   If NAMEVERITY is ON, the user is prompted for verification of all names on outgoing messages.

NETINFO={ON | OFF}

This option indicates whether the network-related information for a message is to be displayed or not.   The default is OFF.

NOTICE={"text" | OFF}

This option sets the MTS Message System NOTICE option to "text".   When set, this notice will be displayed to anyone attempting to send a message to the user's mailbox.   SET NOTICE=OFF cancels the notice.

PFHELP={ON | OFF | TOGGLE}

This option controls the display of a line of pertinent PF-Key values near the bottom of the screen.   The default value is ON.   SET PFHELP=TOGGLE can be used to reverse the setting of this switch.

PFn='new value'

This option changes the value of the PF-Key to the specified new value.   This form may be used in an initfile, for example, to redefine the default values for the PF-Keys.   More than one command can be associated with a given PF-Key, using the form:

        SET PFn='command1','command2',...,'commandN'

In this case, when the specified PF-Key is pressed, the commands assigned to it will be executed sequentially.   The message list specified on the first command will be used for the entire set of commands attached to a given PF-Key.   The Display screen will indicate a PF-Key having multiple commands associated with it with a "+" sign at the left of the PF-Key definition.   Note that only the first command in a set is represented in the one-line PFHELP information.

The "special" PF-Keys (attention, end-of-file, pause, enter) can also be set using the same syntax used for the other PF-Keys.   The key names of these keys (with synonyms) are:

        Attention: ATTN, ATTENTION, PA1, BREAK
        End-of-File: EOF, CANCEL, PA2
        Pause: PAUSE, SYSREQ (IBM 3270 terminals only)
        Enter: ENTER, RETURN

and thus, SET ATTN='STOP' will redefine the attention key so that when pressed, FSMessage will be exited and unloaded.   The default setting is MTS, which exits FSMessage without unloading it.

PRINT=FDname

This option specifies the file name used with the PRINT command, or the file-name prefix to be used with the "." form of the PRINT command.   The default value is *PRINT*.   See also the PRINT command description.

PRINTCC={ON | OFF}

This option controls whether messages begin at the top of a new page when printed.   PRINTCC=OFF (the default) specifies that messages need not begin at the top of a page.   The CC or NOCC carriage-control option on the PRINT command can override the setting of this switch.

PRINTHEADER={SHORT | MEDIUM | LONG}

This option controls the format of the header lines in messages printed by the PRINT command.   See the HEADER option description.

PRINTHISTORY={n | FULL}

"n" is an integer that specifies the number of history messages to print along with the messages specified on a PRINT command.   PRINTHISTORY=FULL indicates that all history messages are to be printed along with the specified message.   The default value is 1.

PROMPTSUBJECT={ON | OFF}

This option sets the MTS Message System PROMPTSUBJECT "sticky" switch. In FSMessage, if PROMPTSUBJECT is ON, the cursor will be positioned on the Subject line when a message is initiated, rather than on the first line of the message text.

REPLYTO={SENDER | ALLRECIPIENTS}

This option controls to whom replies to messages are sent when no recipients are specified.   The default, REPLYTO=SENDER, indicates that the reply is to be sent only to the sender of the message; REPLYTO=ALLRECIPIENTS specifies that the reply being composed should be sent to the sender and all other recipients of the message.   No recipients are assumed on messages being forwarded; they must be

explicitly specified.

RETURN={LOCAL | FORWARDING}

By default, the Return/Enter key is processed by FSMessage on IBM 3270 terminals as a PF-Key, rather than being simply a local key for cursor positioning. This action can be changed by entering SET RETURN=LOCAL and reset with SET RETURN=FORWARDING.

REVERSEORDER={ON | OFF | TOGGLE}

This option sets the MTS Message System REVERSEORDER "sticky" switch. If REVERSEORDER is ON, then the messages retrieved by the DIRECTORY command and displayed in the Directory screen will be displayed in reverse order (with the most recent message at the beginning of the directory). The REVERSEORDER and FORWARDORDER parameters to the DIRECTORY command can be used to override this switch setting for a specific command. SET REVERSEORDER=TOGGLE can be used to reverse the setting of this switch.

SORT [foldername]

The SORT command sorts the messages in the indicated folder into numerical order. If no folder name is given, and the current directory is of a folder, the current folder is the one sorted. Note that the sorting will only be evident when the directory is regenerated.

STOP

The STOP command stops FSMessage and unloads it, returning to the invoking program. If a message (reply, new message, or forwarding message) is left unposted, confirmation is requested, since stopping will abandon this message. The End-of-File key has the same function.

TIDY [foldername]

The TIDY command removes entries for deleted messages from the archive file's internal directory for the indicated folder. If no folder name is given, and the current directory is of a folder, the current folder is assumed. Normally this command is not needed, since a TIDY is done automatically when generating a directory folder.

UNDELETE [message-list] [OK]

The UNDELETE command undeletes the specified messages. If no message number is given and no messages were flagged in the Directory screen, then the current message is undeleted. Confirmation is requested if not given on the command. Note that archive messages cannot be undeleted.

{WINDOWFORWARD | WF} [{TOP | BOTTOM}] [{n | n SCREENS}]
{WINDOWBACK | WB}   [{TOP | BOTTOM}] [{n | n SCREENS}]

The WINDOWFORWARD (WF) and WINDOWBACK (WB) commands allow windowing forwards or backwards in the top and bottom windows on the screen. For those screens having only one window, the TOP or BOTTOM is ignored and may be omitted. If neither TOP nor

BOTTOM is specified in a two-window screen, TOP is assumed.

The distance to be windowed can be indicated by specifying either "n" or "n SCREENS". If no distance is specified, the screen is windowed forward to the last screen or back to the first screen for WF and WB, respectively. If "n" is specified, the screen will be scrolled n lines. If "n SCREENS" is specified, the screen will be scrolled the indicated number of screens. In both cases, "n" need not be an integral value. If "n" is specifying the number of lines to be scrolled, "n" is first truncated. If "n SCREENS" is specified, the fractional part of "n" indicates a partial screen. For example, WF TOP .75 SCREENS will window forward the top window three quarters of a screen.

By default, PF1/13 is WB TOP 1 SCREEN; PF4/16 is WF TOP 1 SCREEN; PF 7/19 is WB BOTTOM 1 SCREEN; and PF 10/22 is WF BOTTOM 1 SCREEN.

PF-KEYS

FSMessage allows each of the PF-Keys to be set to an arbitrary string using the SET command. When a PF-Key is pressed, the string assigned to it is executed as a command or set of commands. The default settings for PF-Keys 0 to 24 and the "special" keys are described below. There are no default values for PF-Keys numbered 25 and up. By default, a compact display of useful PF-Key settings is given at the bottom of the screen. To turn this display off, use the SET PFHELP=OFF command.

Default PF-Key Definitions

The default PF-Key definitions are:

PF1/13	Default:	WindowBack Top 1 Screen
PF2/14	Default:	Print
PF3/15	Default:	Post
PF4/16	Default:	WindowForward Top 1 Screen
PF5/17	Default:	Edit
PF6/18	Default:	Reply
PF7/19	Default:	WindowBack Bottom 1 Screen
PF8/20	Default:	Remove
PF9/21	Default:	Send
PF10/22	Default:	WindowForward Bottom 1 Screen
PF11/23	Default:	History Previous
PF12/24	Default:	History Next
PF −3	Default:	Cursor Work (IBM 3270s only)
PF −1	Default:	MTS
PF −2	Default:	Stop
PF0	Default:	Enter (%Send in Window)

For the Ontel terminal, the PF-key assignments are as follows:

PF	Ontel Key	Default Assignment
−2	EOF	Stop
−1	ATTN	MTS
0	PF0	Enter

1	CTRL-1 or PF1	WindowBack Top 1 Screen
2	CTRL-2 or PF2	Print
3	CTRL-3 or PF3	Post
4	CTRL-4 or PF4	WindowForward Top 1 Screen
5	CTRL-5 or PF5	Edit
6	CTRL-6 or PF6	Reply
7	CTRL-7 or PF7	WindowBack Bottom 1 Screen
8	CTRL-8 or PF8	Remove
9	CTRL-9	Send
10	CTRL-0	WindowForward Bottom 1 Screen
11	CTRL---	History Previous
12	CTRL-↑	History Next
13	-	WindowBack Top 1 Screen
14	-	Print
15	-	Post
16	SHIFT-PF0	WindowForward Top 1 Screen
17	SHIFT-PF1	Edit
18	SHIFT-PF2	Reply
19	SHIFT-PF3	WindowBack Bottom 1 Screen
20	SHIFT-PF4	Remove
21	SHIFT-PF5	Send
22	SHIFT-PF6	WindowForward Bottom 1 Screen
23	SHIFT-PF7	History Previous
24	SHIFT-PF8	History Next

For the IBM PC, the PF-key assignments are as follows:

PF	IBM PC Key	Default Assignment
−2	CTRL-C	Stop
−1	CTRL-E	MTS
0	End	Enter
1	F1	WindowBack Top 1 Screen
2	F2	Print
3	F3	Post
4	F4	WindowForward Top 1 Screen
5	F5	Edit
6	F6	Reply
7	F7	WindowBack Bottom 1 Screen
8	F8	Remove
9	F9	Send
10	F10	WindowForward Bottom 1 Screen
11	ALT-F1	History Previous
12	ALT-F2	History Next
13	ALT-F3	WindowBack Top 1 Screen
14	ALT-F4	Print
15	ALT-F5	Post
16	ALT-F6	WindowForward Top 1 Screen
17	ALT-F7	Edit
18	ALT-F8	Reply
19	ALT-F9	WindowBack Bottom 1 Screen
20	ALT-F10	Remove

21	SHIFT-F1	Send
22	SHIFT-F2	WindowForward Bottom 1 Screen
23	SHIFT-F3	History Previous
24	SHIFT-F4	History Next

For the Macintosh, the PF-key assignments are as follows:

VPF	*Mac Key*	*Default Assignment*
−2	CTRL-C	Stop
−1	CTRL-E	MTS
0	Numpad 0	Enter
1	Numpad 1	WindowBack Top 1 Screen
2	Numpad 2	Print
3	Numpad 3	Post
4	Numpad 4	WindowForward Top 1 Screen
5	Numpad 5	Edit
6	Numpad 6	Reply
7	Numpad 7	WindowBack Bottom 1 Screen
8	Numpad 8	Remove
9	Numpad 9	Send
10	Numpad CLEAR	WindowForward Bottom 1 Screen
11	Numpad −	History Previous
12	Numpad +	History Next
13	Numpad *	WindowBack Top 1 Screen
14	Numpad /	Print
15	Numpad ,	Post
16	Numpad ENTER	WindowForward Top 1 Screen
17	Numpad .	Edit

THE MTS USER DIRECTORY

The MTS User Directory is a program that maintains a directory of user names and associated information.

The program is invoked by the following $RUN command:

    $RUN *USERDIRECTORY INPUT=input PRINT=output SERCOM=messages
        GUSER=responses

where

    INPUT   - input command to User Directory.
    PRINT   - printed output from User Directory.
    SERCOM   - error messages, prompting messages, and help text.
    GUSER   - responses to prompting messages.

The User Directory program maintains a database, called the master directory, that allows names to be used with the MTS Message System.

There are four types of name entries that can be put into a directory: individual names, alias names, remote names, and group names.

The most common is the individual name.   Messages that are sent to an individual name are put in the mailbox of the ownerID of that name.   Individual names are public; that is, any user can send a message to an individual name.

The second type of name entry is the alias name.   This can only be used with name libraries. When an alias name is enrolled in the name library, the user will be asked to give a "primary name", which must be a name that exists in the master directory.   The primary name may be either an individual name, a remote name, or a group name.   Whenever a message is sent to the alias name, it will appear that the message was sent to the primary name.   For example, a message sent to the alias "Joe" associated with the primary name "Joe Doe" is actually sent to "Joe Doe".

The third type of name entry is the remote mail name.   Messages that are sent to a remote mail name are put into the remote mailbox of the name.   For example, a message sent to John Q. Public with the remote mail name JQPublic@MIT goes to the site MIT and then is delivered to the user JQPublic.   Remote mail names are public; that is, any user can send a message to a remote mail name, unless the remote names are enrolled in a private name library, in which case they are considered private.

The fourth type of name entry is the group name.   When a group name is added to the directory, the user will be asked to give a list of members, which may include a combination of individual names, remote names, alias names, other group names, userIDs, or projectIDs.   Whenever a message is sent to this group name, it will be sent to each of the members.   For example, if "Pascal Language Project" is a group with members Marlou Smith, John Brown, and Jack Black, and a message is sent to this name, the message will be sent to Marlou Smith, John Brown, and Jack Black.   Groups are considered to be in the public domain; that is, any user may send a message to any group that is enrolled in the master directory.   One exception is that a group is private if it is enrolled in a name library.

The User Directory program allows a user to add to the directory a maximum of 10 individual names, 100 groups, and 100 remote names.

INDIVIDUAL NAMES

Each individual name first must be enrolled in the master directory.   The User Directory program prompts the user for information about his or her own name and how it is to be used.   The following terminal example illustrates how an individual name may be enrolled (some of the explanatory information printed by the program is omitted for the sake of brevity).

```
#run *userdirectory
#Execution begins

 Whenever you need HELP, type HELP.
*add
Individual name? Mary (Marlou) Louise Smith
 Individual Mary Louise Smith was added with ownerID WABC.
Business phone number? 313-764-9595
Business address? Systems Resource Department
                2 221 Angell Hall
                3 University of Michigan
                4 Ann Arbor, MI 48109
                5
Description? SRD staff consultant

*display 'mary louise smith'
 "Mary Louise Smith", Individual, OwnerID=WABC,
   Access=(Unlimited owner, Read others)
  Business phone:   313-764-9595
  Business address: Systems Resource Department
                    221 Angell Hall
                    University of Michigan
                    Ann Arbor, MI 48109
  Description:      SRD staff consultant
*stop
#Execution terminated
```

The User Directory program first prompts for the user's complete name in the order first name, middle name, and last name.   Alternate names or nicknames may be given in parentheses as illustrated above.   After the name has been entered, the user is prompted for information associated with the name, such as a business telephone number and business address.   These items may be omitted by entering a null line.

The current userID is taken as the ownerID.   This is the userID to which all messages will be directed for this name.   For example, all messages sent to Mary Louise Smith will go to the mailbox of userID WABC.

When a message is sent to a name, any combination of given names or alternate names may be used. For example, the message may be sent to Mary Louise Smith, Mary Smith, Louise Smith, or Marlou Smith.   If the name is similar to another name in the directory, the sender will be prompted further to resolve the name.   When the Message System lists the sender of a message, the complete given name (excluding alternate names) is used.

The DISPLAY command may be used to display information about an entry in the database.   The DISPLAY command is normally given as:

DISPLAY 'name'

For example, either of the following commands will display information about Mary Louise Smith (either given names or alternate names may be used):

```
DISPLAY 'Mary Louise Smith'
```

The primes (single quotes) are not required if the name is given without any internal blanks or parentheses; the underscore may be used to replace blanks:

```
DISPLAY Marlou_Smith
```

The DISPLAY command allows the use of the User Directory database as an online directory. Information may be displayed about any individual or member of a group in the User Directory database.

NAME LIBRARIES

A name-library file may be created to maintain a private User Directory database. The name library establishes a subset of alias names from the master directory that can be used for sending messages.   This name library can be organized as a list of individual or private remote names or as a private group.   Normally, the alias names are shortened forms of the primary name in the master directory, for example, first names like "John" for "John Brown".

The name library is managed by a directory manager who normally is the owner of the file.   Entries in the name library can be made either by the directory manager or by each of the individual participants (if permitted to do so) in a manner similar to making entries in the master directory.

The following example illustrates the use of the private name library WXYZ:STAFFDIR with the User Directory program.   In this case, the directory manager is the owner of the userID WXYZ.   Mary Louise Smith is making her own entry into the name library using the alias name Marlou.

```
#run *userdirectory
#Execution begins

 Whenever you need help, type HELP.

*use namelibrary wxyz:staffdir
 Using WXYZ:STAFFDIR
*add
Alias name? Marlou
Primary name? Mary Louise Smith
 Alias Marlou was added with primary name Mary Louise Smith
*display marlou
 "Marlou", Alias, Primaryname="Mary Louise Smith",
 OwnerID=WABC, Access=(Unlimited owner, Read Others)
*stop
#Execution terminated
```

The command USE NAMELIBRARY WXYZ:STAFFDIR is given to switch User Directory processing to the private name-library file.   The USE MASTER command may be given to switch processing back to the master directory.

When the name library is subsequently used with the Message System, the $SET NAMELIBRARY command must be given to indicate that the name library is to be used instead of the master directory, e.g.,

```
$SET NAMELIBRARY=WXYZ:STAFFDIR
```

This command may be inserted into the user's sigfile.   Details of using name libraries with the Message System are given in the section "The MTS Message System" in this volume.   Sigfiles are described in *MTS Volume 1: The Michigan Terminal System*, Reference R1001.

Name libraries also may be used to create private groups.   Private groups are created in the same manner as public groups in the master directory.   Aliases, private remote names, or other private groups can be added to a private group.

The owner of the name-library file is responsible for permitting the file so that it can be used by the Message System, other users, and other directory managers if desired.   To allow other users to use only the Message System with the name library, the owner should permit the file as follows for each user:

$PERMIT file READ userid

where "userid" is the userID of the other user.   To allow other users to add, display, or modify their own entries, and to use the Message System with the name library, the owner should permit the file as follows for each user:

$PERMIT file RW userid&PKEY=*SYS.UD

To allow another user to manage the directory, the owner should permit the file as follows:

$PERMIT file RW (userid&PKEY=*USERDIRECTO,userid&PKEY=*SYS.UD)

The User Directory program has the program key *USERDIRECTO.   The User Directory routines, used both by the User Directory program and the Message System, require the *SYS.UD program key.

When making an entry in the name library, the user must supply a primary name in addition to the alias name.   The primary name must have been previously enrolled in the master directory.   When a message is sent to the alias name, the message is in fact directed to the mailbox of the owner of the primary name, to mailboxes of members of the group, or to a remote name.

The owner of the entry in the name library is determined by the userID that created the entry.   The owner is the only one who can change the entry (other than the directory manager) unless permission is granted to another user by the PERMIT command.

REMOTE MAIL NAMES

A remote mail name may be used to simplify the sending of messages to remote sites and to automatically send any incoming mail to a remote site.   A mail name is comprised of a remote name followed by a destination site name.   For example, in the mail name

```
Peter_Grey@UQV-MTS
```

Peter_Grey is the remote name and UQV–MTS is the destination site name.   A remote mail name may be added to either the master directory or to a name library.

The following shows how to add a remote name to the master directory.   In this case, Mary Louise Smith (the owner of WABC) will register Peter Grey, a remote user from the University of Alberta, in User Directory.

```
#run *userdirectory
#Execution begins

 Whenever you need help, type HELP.

*add remote
Name? Peter Grey
Mail name? Peter_Grey@UQV-MTS
 Remote Peter Grey was added with mail name Peter_Grey@UQV-MTS
Business phone number? 403-436-7890
Business address? University of Alberta
                2 987 Broadwalk Blvd.
                3 Edmonton, AB
                4 Canada T6G 2H1
                5 [return]
Description? Chemistry professor
*display Peter_Grey
 "Peter Grey", Remote, Mailname=Peter_Grey@UQV-MTS,
 OwnerID=WABC, Access=(Unlimited owner, Read others)
 Business phone:   403-436-7890
 Business address: University of Alberta
                   987 Broadwalk Blvd.
                   Edmonton, AB
                   Canada T6G 2H1
 Description:      Chemistry professor
*stop
#Execution terminated
```

Now Mary Louise Smith (or any other user at the University of Michigan) can send Peter Grey a message by just sending to Peter Grey without having to remember (or know) his remote mail name.

The remote name may be up to 128 characters long.   On other MTS systems, the remote name is usually the full name with blanks replaced by underscore (_) characters.   Non-MTS systems have different requirements with respect to the correct form (case, spelling, and punctuation) that must be used (the correct form may be ascertained by contacting the destination site installation or by having someone from that installation send a message to the U–M user and inspecting the FROM field in the header of the imported message).   The remote name cannot have nicknames or parentheses, and the remote name must be known at the destination site.   The destination site name may be up to 64 characters long; it may have up to 10 parts, each separated by a period, for example,

```
um.cc.umich.edu
```

A registered remote name may be changed to an individual (local) name by issuing the command

MODIFY remote-name TYPE=INDIVIDUAL

For example, the following command issued from UM-MTS will change Peter Grey to a local name for the UM-MTS system:

```
MODIFY Peter_Grey TYPE=INDIVIDUAL
```

To restore the local name back to the registered remote name, use the MODIFY command with the MAILNAME parameter:

```
MODIFY Peter_Grey MAILNAME=Peter_Grey@UQV-MTS
```

GROUP NAMES

Group names are enrolled in the User Directory in a manner similar to individual names.   The following terminal example illustrates how a group name may be enrolled:

```
#run *userdirectory
#Execution begins

 Whenever you need HELP, type HELP.
*add group
Group name? Pascal Language Project
 Group Pascal Language Project was added with ownerID WABC.
Members? Mary Louise Smith
Members? John Paul Brown
Members? Pascal Planning Group
Members? [return]
*modify 'Pascal Language Project' members
Members? Jack Black
Members? [return]
*display 'Pascal Language Project' members
 "Pascal Language Project", 4 members
*display 'Pascal Language Project' memberlist
 "Pascal Language Project"
 4 members:
 1. Mary Louise Smith, Owner ID WABC
 2. John Paul Brown, Owner ID WXYZ
 3. Pascal Planning Group, Owner ID WDEF
 4. Jack Black, Remote Jack_Black@ub.cc.umich.edu
*set expand=on
 Expand is on.
*display 'Pascal Language Project' memberlist
 "Pascal Language Project"
 8 members:
  1. Mary Louise Smith, Owner ID WABC
  2. John Paul Brown, Owner ID WXYZ
  3. Jack Black, Remote Jack_Black@ub.cc.umich.edu
  4. Thomas Green, Owner ID WMNP
  5. Claire Cerise, Owner ID WRST
  6. Sandra A. White, Owner ID WSTU
  7. Karen Blue, Owner ID WFGH
  8. Ann Green, Owner ID WPQR
*stop
 #Execution terminated
```

Each member of the group must either be an individual name, a remote name, a userID (as in ID=WXYZ), a projectID (as in P=WXYA), or another group previously enrolled in the master directory.

The MODIFY command may be used to add a member to an existing group.   The command is given as

MODIFY 'group-name' MEMBER='member-name'

To delete a member from the group, prefix the member name with a minus sign "−", e.g.,

     MODIFY 'group-name' MEMBER=−'member-name'

The DISPLAY command may be used to display information about a group entry.   The command is given as

     DISPLAY 'group-name' MEMBERS
     DISPLAY 'group-name' MEMBERLIST
     DISPLAY MEMBER='member-name'

The first two forms display information about the group.   The MEMBERS parameters provides the number of members in the group while the MEMBERLIST parameter provides the names of the individuals, remote names, or subgroups in the group (if SET EXPAND=ON, the individual or remote names in the subgroups are given).   The last form displays information about each group to which the member belongs.

A list manager may modify a group by adding a member list from a file.   For example:

```
MODIFY "ABC" MEMBERLIST=ABC-LIST
```

This causes the User Directory program to read in and add members to the group ABC from the file ABC−LIST.   To produce a member list in a file, which will be suitable for MODIFY MEMBERLIST, the list manager can issue:

```
DISPLAY "ABC" MEMBERLIST=ABC-LIST
```

The file ABC−LIST should then consist of member names, userIDs, and projectIDs, each separated by a comma or by an end-of-line.

Other commands useful for the management of groups are CLEAR and EMPTY.   The CLEAR command will remove from the group all destroyed names and expired userIDs.   The EMPTY command will empty the member list of a group, that is, remove all members from a group.

A list maintainer and a redistributor for public groups may also be associated with the group name. A list maintainer is responsible for maintaining the member list of the group.   A redistributor is a person who is contacted if subsequent problems occur when a mailing list gets redistributed.   Either a list maintainer or a redistributor can be set by using the MODIFY command with the LISTMAINTAINER or REDISTRIBUTOR parameter.   For example, to assign John Doe as a list maintainer for Pascal Language Project, the following commands may be issued:

```
MODIFY "Pascal Language Project" LISTMAINTAINER="John Doe"
```

If there are problems with the member list of Pascal Language Project, John Doe will be contacted.

MORE ABOUT NAMES

Name Syntax

A name is composed of up to 10 words.   A word may be:

(1)   A string of up to 32 alphanumeric characters or a string of up to 31 alphanumeric characters followed by a period.   Characters between the first and the last characters may be an apostrophe, a minus sign, or a slash.   These words are called subnames. "Jonathan", "J.", and "Dr." are examples of subnames.

(2)   A string contained within parentheses.   These parts are called alternate names or nicknames.   "(Jon)" is an example of a nickname.

An initial consists of one alphanumeric character optionally followed by a period, for example, "J" or "J." When searching, the initials will match words that start with the alphanumeric character, e.g., "J" or "J." match either "Jon" or "Jonathan".

A full name consists of all words, excluding nicknames.   A complete name consists of all subnames and nicknames.   For example, "Dr. Jonathan (Jon) P. (Paul) Brown" is a complete name, while "Dr. Jonathan P. Brown" is a full name.

The complete name must not be longer than 64 characters.   It must have at least two subnames for an individual name or for a public remote mail name, one subname otherwise.

Duplicate Names

The User Directory program does not allow duplicate names in the directory.   Hence, if you try to add your name to the directory or to modify a name of the directory entry to your own, two possible problems arise:

(1)   The exact name does not exist in the directory, but the User Directory program tells you the name is similar to another entry.   Make sure that you are not adding a different version of your name by mistake.   People may also be confused due to some similar names for truly different persons.

(2)   The exact name exists in the directory.   Such a name cannot belong to more than one ownerID.   If that ownerID happens to be yours, you need only to modify the ownerID of the entry by the CLAIM command.   Type HELP CLAIM for information.

If the original ownerID does not belong to you, then you should try a different version of your name like specifying your full name instead of just first and last names.

Name Searching

When a search for a name is made in the directory, the program uses a phonetic algorithm to find it. Several names may have the same phonetic structure.   Thus, the result of this first "phonetic pass" through the directory is a list of possible names.

The program checks this list to see if any names exactly match the spelling of the searched-for name. If there is only one match, the search succeeds immediately.   If there is more than one, the user is given a numbered list of matches and near matches from which to choose the desired name.   If the numbered list exceeds 10 names, the user first is prompted to print the entire list or cancel the search.

If the MTS $SET TERSE option is ON, the User Directory will display only 10 names and will exclude near matches.   If the MTS $SET ERRORPROMPT option is OFF, the program will only display up to 25 matching names and will exclude near matches.

To speed up searching, users should specify both first and last names.

Name Access

Since names may be permitted to numerous combinations of userIDs, projects, and names, the User Directory routines must follow a precisely defined procedure to determine the current access of the user to a name.

For each name in the master directory and in a name library if specified, the User Directory program maintains the access list.   This list is scanned as follows:

   (1)   If the name is destroyed, the access is READ.

   (2)   If the current userID matches the ownerID of the name, then the current access is the owner's access.   In addition, the userID also has READ and PERMIT accesses to the name.

   (3)   If the current name is issued by the MTS command $SET NAME, the access list is scanned for an accessor matching the name.   If the accessor is found, the corresponding access will be taken.

   (4)   If no name accessor is found or if the current name was not set, the access list is scanned for an accessor matching the current userID.   If the userID accessor contains a "?", the longest substring will be taken.   For example, if the current userID is WABC, two matching accessors W? and WA? are found.   The access for the latter is used because WA? is longer than W?.

   (5)   If no userID accessor is found to match the current userID, the access list is scanned for a project accessor matching the current project (as long as possible).

   (6)   If all fails, the access specified for OTHERS is used.

For example, suppose that "Jane Doe" has access as unlimited owner, read others, setname userID WXYZ, modify "John Doe".   John Doe can modify the information belonging to "Jane Doe", and the userID WXYZ can set the name to "Jane Doe".

PROBLEMS WITH THE MASTER DIRECTORY

Users experiencing difficulties, such as not being able to add names because of conflicts with previously held userIDs, may direct messages to the manager of the master directory by issuing the command

   $MESSAGE SEND TO Userdirectory

and describing their problems in the message text.

COMMANDS

The following commands are available for User Directory.   The underlined portion of each command indicates the minimum abbreviation permitted.

ADD [INDIVIDUAL] [parameter ...]
ADD [REMOTE] [parameter ...]
ADD [GROUP] [parameter ...]
ADD [ALIAS] [parameter ...]

> The ADD command adds an entry into the directory.   Either an individual name, a remote name, a group name, or an alias name can be added.   REMOTE, GROUP, or ALIAS can be omitted if some subsequent parameter implies the name-type.   If no name-type is specified or implied when adding to the master directory, an individual name is added.   If no name-type is specified or implied when adding to a name library, an alias name is added.

> The parameters that can be used with this command are:

BUSADDRESS={'addr' | ('addr1','addr2',...)}	
BUSPHONE='number'	
COMPLETENAME	
DESCRIPTION='string'	
FULL	
FULLNAME	
HOMEADDRESS={'addr' | ('addr1','addr2',...)}	
HOMEPHONE='number'	
LISTMAINTAINER[='name']	(implies GROUP)
MAILNAME=name@destination	(implies REMOTE)
MEMBERLIST[=FDname]	(implies GROUP)
MEMBERS={ID=userid | P=projectid}	(implies GROUP)
MEMBERS={'name' | ('name1','name2',...)}	(implies GROUP)
[NAME=]'name'	
PRIMARYNAME='name'	(implies ALIAS)
REDISTRIBUTOR[='name']	(implies GROUP)
REMOTENAME={name | name%relay}	(implies REMOTE)
SITE=destination	(implies REMOTE)
TYPE={INDIVIDUAL | REMOTE | GROUP | ALIAS}	

> In addition, a directory manager may specify the following parameter:

> OWNERID=userid

> For more information about a specific parameter, see the "Parameters" section below.

> In terminal mode, the ADD command normally is issued without any parameters.   In this case, the program prompts for the information to be entered.   This information normally includes the name or the members of the group, the primary name when adding to a name library, the mail name when adding a remote name, the business phone, and the business address.   Explicit parameters may be given to set other information in the entry such as home phone or home address.   If the FULL parameter is specified, the program prompts for all types of information.

In batch mode, all information must be given in the form of parameters to the command.   The NAME parameter must be specified.   When adding a group, the MEMBERS or MEMBERLIST parameter must be specified.   When adding a remote name, the MAILNAME parameter must be specified.

CLAIM identifier

The CLAIM command allows the user to claim ownership of an entry that belongs to another userID.   This transfers ownership from the other userID to the current userID.   "identifier" may be:

    'name'
    EACH OWNER=userid

If EACH OWNER=userid is specified, all names belonging to "userid" will be transferred to the current userID.

If the user has both modify and destroy access to the entry from the current userID, then ownership is transferred immediately.   If the user does not have access, the program will prompt the user for the password of the ownerID.   The CLAIM command may not be used in batch mode.

The CLAIM command can be used to transfer ownership for an entry from an expired userID to a new userID.

Example:

    CLAIM 'Mary Louise Smith'

CLEAR group

The CLEAR command removes from the specified group all members that have destroyed names or nonexistent userIDs.

COMMENT text

The COMMENT command is used to insert comments into the input stream.   In addition, lines beginning with an asterisk are treated as comments.

Examples:

    COMMENT This is a comment.
    ***This is also a comment.**

DESTROY identifier [OK]

The DESTROY command is used to delete entries from the database.

The most common identifier used with this command is:

    'name'

The name may be either an individual name or a group name.   For more information about other identifiers, see the description of the identifiers below.

The user will be prompted for confirmation unless OK is specified on the command line.

The user must have DESTROY access to the entry in order to use this command, unless he or she is the owner of the entry.

Example:

```
DESTROY 'Mary Louise Smith'
```

Warning: The destroyed entry will also be removed from groups and name libraries that refer to the entry.   All permit accesses that refer to the destroyed entry will no longer apply.   If the entry is subsequently re-enrolled as an individual name to the database, it must be explicitly added to the group or name library using the MODIFY command.

DISPLAY identifier [parameter ...] [OUTPUT=FDname]

The DISPLAY (or FIND) command displays information from the database on the logical I/O unit PRINT.

The most common identifiers that are used with this command are:

    'name'
    MEMBER='name'
    ME or MY

If the MEMBER identifier is used, the DISPLAY command will also print information about the group to which the member belongs.   For more information about other identifiers, see the "Identifiers" section below.

The parameters that can be used with this command are:

    ACCESS
    BUSADDRESS
    BUSPHONE
    COMPLETENAME
    CREATEDATE
    CREATEUSERID
    DESCRIPTION
    FULL
    FULLACCESS or FA
    FULLNAME
    HOMEADDRESS
    HOMEPHONE
    LASTMODDATE
    LASTMODUSERID
    LASTSETDATE
    LASTSETUSERID
    LISTMAINTAINER
    MAILNAME

        MEMBERLIST[=FDname]
        MEMBERS
        NAME
        NAMEID
        OWNERID
        PRIMARYNAME
        REDISTRIBUTOR
        REMOTENAME
        SITE
        SITEBOX
        STATUS
        TOTAL
        TYPE
        USERID

If neither the FULL nor TOTAL parameters are specified, the current values for NAME, TYPE, OWNERID, PRIMARYNAME, MAILNAME, FULLACCESS, BUSPHONE, and BUSADDRESS will be displayed if a single name is specified; if more than one name is specified, only the NAMEs, PRIMARYNAMEs, MAILNAMEs, and OWNERIDs will be displayed. If the FULL parameter is specified, the current values for NAME, MEMBERLIST, TYPE, OWNERID, FULLACCESS, BUSPHONE, BUSADDRESS, HOMEPHONE, HOMEADDRESS, and DESCRIPTION will be displayed. If the TOTAL parameter is specified, all information will be displayed.

If OUTPUT is specified, the information will be displayed on the file or device "FDname".

Examples:

```
DISPLAY 'Mary Louise Smith'
DISPLAY Marlou_Smith BUSPHONE
DISPLAY MY NAME
```

EMPTY group

The EMPTY command empties the member list in the specified group. The user must have MODIFY access to use this command.

FIND identifier [parameter ...] [OUTPUT=FDname]

The FIND command is the same as the DISPLAY command.

{HELP | EXPLAIN} [parameter]

The HELP or EXPLAIN command prints information about the User Directory program on SERCOM.

Entering "HELP INTRODUCTION" produces a brief introduction.

Entering "HELP GETTING STARTED" produces a short explanation for a novice user wanting to add his or her name.

Entering "HELP COMMANDS" produces a list of commands that are available with the program.   More specific information about a command can be obtained by entering "HELP" followed by the name of the command.

Entering "HELP CONTENTS" produces a complete list of available help topics.

Entering "HELP MESSAGE SYSTEM" produces a brief explanation about making a name entry work with the Message System.

Entering "HELP NAMELIB" produces a brief explanation about using name libraries.

Entering "HELP CHANGES" itemizes recent changes to User Directory.

JOIN identifier

The JOIN command allows a user to join a group.

The identifier specifies the group name that is to be joined and is given in the form:

'name'

The user joining the group must have JOIN access to the group.

MCMD MTS-command

The MCMD command executes an MTS command.   The MTS command following the MCMD is executed by the system, and control is returned to the User Directory program.

Alternatively, any line beginning with a dollar sign ($) is interpreted as an MTS command and executed as above.

MODIFY identifier parameter ...

The MODIFY command changes the information associated with an entry in the directory.

The most common identifiers that are used with this command are:

'name'
MEMBER='name'
ME

For more information about other identifiers, see the "Identifiers" section below.

The parameters that can be used with this command are:

BUSADDRESS={'addr' | ('addr1','addr2',...)}
BUSPHONE='number'
COMPLETENAME
DESCRIPTION='string'
FULL
FULLNAME
HOMEADDRESS={'addr' | ('addr1','addr2',...)}

            HOMEPHONE='number'
            LISTMAINTAINER[='name']
            MAILNAME=name@destination
            MEMBERLIST[=FDname]
            MEMBERS={ID=userid | P=projectid}
            MEMBERS={'name' | ('name1','name2',...)}
            [NAME=]'name'
            PRIMARYNAME='name'
            REDISTRIBUTOR[='name']
            REMOTENAME={name | name%relay}
            SITE=destination
            TYPE=INDIVIDUAL

    In addition, a directory manager may also specify the following parameter:

            OWNERID=userid

    For more information about a specific parameter, see the "Parameters" below.

    If any of the above parameters is given in terminal mode without the right-hand side, the user
    will be prompted for the entry.

    If the FULL parameter is specified in terminal mode, the user will be prompted for the
    BUSPHONE, BUSADDRESS, HOMEPHONE, HOMEADDRESS, and DESCRIPTION
    parameters.   In addition, if a group is being modified, the user will be prompted for MEMBERS.

    The TYPE=INDIVIDUAL parameter will change a remote name to an individual name.

    The user must have MODIFY access to the entry in order to use this command, unless he or she
    is the owner of the entry.

    Examples:

        MODIFY 'Mary Louise Smith' HOMEPHONE='993-0000'
        MODIFY Marlou_Smith HOMEADDRESS
        MODIFY ME TYPE=INDIVIDUAL

MTS [MTS-command]

    The MTS command returns control to MTS.   Any work space that was allocated is not released,
    and the User Directory program can be reentered by typing $RESTART in MTS command mode.

    An optional MTS command can be appended to the MTS command which will be executed by
    MTS before entering MTS command mode.

PERMIT identifier access accessor,... ...

    The PERMIT command changes access information in the directory database.

    The "identifier" parameter specifies the entry or entries that are to have their permit accesses
    changed.   The most common identifiers that are used with this command are:

'name'
MEMBER='name'
ME

For more information about other identifiers, see the "Identifiers" section below.

The "access" parameter specifies what type of access is to be granted and the "accessor" parameter specifies who is to have that access.   The following types of access may be specified:

READ	allow use of DISPLAY command
SETNAME	allow use of $SET NAME command[1]
MODIFY	allow use of MODIFY command
DESTROY	allow use of MODIFY OWNERID or DESTROY command
JOIN	alllow use of JOIN or RESIGN commands
PERMIT	allow use of PERMIT command
FULL	combination of READ, MODIFY, and SET accesses
UNLIMITED	combination of all of the above accesses
PWSETNAME	allow use of $SET NAME if userID/password of owner is correctly given[1]
DEFAULT	change access to READ access for OTHERS and UNLIMITED for OWNER

[1]$SET NAME can be applied only to individuals or registered remote names.

The accessor may be any of the following:

[USER]ID=userid	userID
PROJECT[ID]=projectid	projectID
'name'	individual name
OWNER	owner of entry
OTHERS	all others except owner
ALL	everyone
ME	current $SET NAME entry (defaults to current ID)

For example, the command

```
    PERMIT 'Mary Louise Smith' SET ID=WDEF
```

grants the userID WDEF permission to use the command $SET NAME='Mary Louise Smith'.

The default access is UNLIMITED for OWNERID and READ for OTHERS.

Several access/accessor pairs may be specified; each pair must be separated by a comma from the preceding pair.

The user must have PERMIT access to the entry in order to use this command, unless he or she is the owner of the entry.

Examples:

```
    PERMIT 'Marlou Smith' PWSET 'John Paul Brown'
    PERMIT ME SET ID=WABC, PWSET P=WXYZ
```

PURGE identifier [OK]

>The PURGE command is the same as the DESTROY command except it permanently removes all information about the name entry.   The membership of the name entry to groups (if any) is also removed.

>Only the master directory manager may perform the PURGE command.

RENAME oldname=newname

>The RENAME command changes the old name to the new name.

>Example:

>>   RENAME 'Joe Doe'='Joseph Doe'

RESIGN identifier

>The RESIGN command allows a user to resign from a group.

>The identifier specifies the group name that is to be resigned from and is given in the form:

>>   'name'

>The user resigning the group must have JOIN access to the group.

>Example:

>>   RESIGN 'ABC-Group'

RETURN

>The RETURN command returns control to MTS.   Any work space that was allocated is not released, and the User Directory program can be reentered by typing $RESTART in MTS command mode.

SET option ...

>The SET command sets options for User Directory.   More than one option may be specified on the SET command; one or more blanks or commas must separate each option.

BATCH={ON | OFF}

>If the BATCH option is ON, User Directory behaves as if it were in batch mode.   Batch users cannot set this option to OFF.   PROMPT=OFF is also implied.

BRIEF={ON | OFF}

>This is a synonym for the TERSE option.

CHECK={ON | OFF}

   If the CHECK option is ON, the expiration date of the owner's userID is shown in the
   DISPLAY command.   The default is OFF.   Only master directory managers can set this
   option.

ECHO={ON | OFF}

   The ECHO option controls the echoing of User Directory input lines.   If ECHO is ON,
   input lines are echoed on the current output file if it is different from the input file or
   device.   If ECHO is OFF, the lines are not echoed.

ERRORPROMPT={ON | OFF}

   If the ERRORPROMPT option is ON, the user is prompted for error correction for invalid
   names, commands, and keyword parameters.   The default is ON.

EXPAND={ON | OFF}

   If the EXPAND option is ON, the member list of a group in the DISPLAY command is
   expanded to include all members of a subgroup.   The default is OFF.

HELP={FDname | DEFAULT}

   The HELP option is used to specify the file or device for the EXPLAIN or HELP command
   output.   Only master directory managers can set this option.

HELPMODE={SCREEN | DEFAULT | LINE}

   The   HELPMODE   option   controls   the   mode   for   the   HELP   command.
   HELPMODE=SCREEN specifies the full-screen format, if the terminal has full-screen
   capabilities.   HELPMODE=LINE prints help/explain information in line mode.
   HELPMODE=DEFAULT allows User Directory to decide the proper format for the
   terminal.

LOG=logfile

   The LOG option specifies the file for User Directory input lines.   Only master directory
   managers can set this option.

MASTER={FDname | DEFAULT}

   The MASTER option specifies the master User Directory file.   Only master directory
   managers can set this option.

MATCH={ON | OFF}

   If the MATCH option is ON, the User Directory program will attempt to find an exact
   match of names in commands.   For instance, if there are two names "John Q. Doe" and
   "John Doe", "John Doe" will match the second.   If MATCH is OFF, the user is prompted
   to decide which of the two to use in commands.   The default is OFF.

NAME={'name' | OFF}

> The NAME option assigns an individual name to the current userID. This is useful for routing mail messages to the current userID.

NAMELIBRARY={FDname | DEFAULT}

> The NAMELIBRARY option specifies the name library file. If DEFAULT, the file specified by the MTS $SET NAMELIBARY option will be used. The USE NAMELIBRARY command may also be issued in a similar fashion.

PARSETRACE={FULL | ON | OFF}

> The PARSETRACE option is used for debugging the parsing of User Directory input lines. It may be set to FULL, ON, or OFF.

PROMPT={ON | OFF}

> The PROMPT option specifies whether the program User Directory should prompt the user. The default is ON in conversational mode and OFF in batch mode.

TERSE={ON | OFF}

> The TERSE option specifies the length of User Directory output lines. If ON, output lines are brief; if OFF, output lines are verbose.

VERBOSE={ON | OFF}

> The VERBOSE option is the antonym of the TERSE option.

> Example:

```
SET MATCH=ON PROMPT=OFF TERSE=ON
```

STATUS

> The STATUS command identifies the master directory or current name library and gives counts of individual names, registered remote names, and unregistered remote names.

{STOP | QUIT}

> The STOP command terminates the User Directory program. An end-of-file will also terminate the User Directory program. QUIT is a synonym for STOP.

USE {MASTER | NAMELIBRARY [filename]}

> The USE command changes the current directory file.

> Entering "NAMELIBRARY filename" will switch the directory to the local name library in the file "filename".

Entering only NAMELIBRARY will switch the directory to the name library specified by the $SET NAMELIBRARY command.

Entering MASTER will switch the directory back to the system master directory.

Local name libraries are useful for maintaining private lists of names such as a class, research project, or department.

Examples:

```
USE NAMELIBRARY 2AAA:CCS474.DIR

$SET NAMELIBRARY=2AAA:CCS474.DIR
USE NAMELIBRARY
```

IDENTIFIERS

The following identifiers are used with the DESTROY, DISPLAY, MODIFY, and PERMIT commands in the User Directory program.   Quotes may be used as delimiters instead of primes.

'name'

"name" indicates that the command is to apply to the entry with the given name.   If there is more than one instance of the same name in the directory, the user will be prompted to resolve the ambiguity.

MEMBER='name'

"name" indicates that the command is to apply to the group that has the given name as a member.   If there is more than one instance of the same name in the directory, the user will be prompted.   If there is more than one group with the given name as a member, the user will be prompted.

OWNERID=userid

"userid" indicates that the command is to apply to the entries that have the given userID as the owner.   "userid" may be specified in the form "xxx?", in which case the command applies to all entries of all userIDs that have "xxx" as the initial substring, e.g., W?, KN?, or 2AX?.

EACH {'name' | OWNERID=userid | INDIVIDUAL | ALIAS | GROUP | REMOTE}

Whenever EACH is placed before one of the above entries, prompting for ambiguity is suppressed and the command will apply to all entries that satisfy the condition, e.g., EACH 'Mary' will apply to all entries that have Mary as part of the name.   INDIVIDUAL, ALIAS, and REMOTE may be specified only by directory managers.

ME or MY

ME or MY indicates that the command is to apply to the entry whose name is currently set by $SET NAME (defaults to the current userID).

ENTIRE

>ENTIRE indicates that the command is to apply to the entire directory. Only directory managers may use this identifier.

DESTROYED

>DESTROYED applies to the list of destroyed names in the master directory. Only directory managers may use this identifier.

PARAMETERS

The following parameters are used with the ADD, DISPLAY, and MODIFY commands in the User Directory program. Some parameters cannot be used with every command. Quotes may be used as delimiters instead of primes.

ACCESS

>The ACCESS parameter is used by the DISPLAY command to display the access of the current user to the entry.

BUSADDRESS='addr'
BUSADDRESS=('addr1','addr2',...)

>"addr" is a string of characters that gives a line of the user's business address.

>The maximum number of business address lines is 5 and the maximum number of characters per line is 64.

>BUSINESSADDRESS is a synonym for BUSADDRESS.

>Example:

>>```
>>BUSA=('1075 Beal Avenue','Ann Arbor, MI 48109')
>>```

BUSPHONE='number'

>"number" is a string of characters that gives the user's business phone number.

>The number may not be more than 64 characters long. The delimiters may be omitted if the number does not contain any blanks.

>BUSINESSPHONE is a synonym for BUSPHONE.

>Examples:

>>```
>>BUSPHONE='(313) 764-9595'
>>BUSPHONE=313-764-9595
>>```

COMPLETENAME

> For the DISPLAY command, the COMPLETENAME parameter gives the entire name of the name entry including nicknames, if any.

> For the ADD and MODIFY commands, the COMPLETENAME parameter is the same as the NAME parameter.

CREATEDATE

> The CREATEDATE parameter is used by the DISPLAY command to display the date of the ADD command or of the last MODIFY OWNERID command issued to change the entry.

CREATEUSERID

> The CREATEUSERID parameter is used by the DISPLAY command to display the userID of the user who issued the ADD command or the last MODIFY OWNERID command to change the entry.

DESCRIPTION='string'

> "string" is a string of characters that gives descriptive information about the user.

> This string may not be more than 200 characters long.   The delimiters may be omitted if the number does not contain any blanks.

> In most cases, this should be used as a one-line description of a person or place.

> Example:

>> ```
>> DESC='Systems Research Staff'
>> ```

> MISCELLANEOUS is a synonym for DESCRIPTION.

FULLACCESS or FA

> The FULLACCESS parameter is used by the DISPLAY command to display all access information for the entry.   If the current user does not have PERMIT access to the entry, only the current user's access will be displayed.

FULLNAME

> For the DISPLAY command, the FULLNAME parameter gives the entire name of the name entry without nicknames, which are usually enclosed in parentheses.   For example, if "Joseph (Joe) Doe" is the complete name, the full name is "Joseph Doe".   The COMPLETENAME parameter will give "Joseph (Joe) Doe".

> For the ADD and MODIFY commands, the FULLNAME parameter is the same as the NAME parameter.

HOMEADDRESS='addr'
HOMEADDRESS=('addr1','addr2',...)

"addr" is a string of characters that gives a line of the user's home address.

The maximum number of home address lines is 5 and the maximum number of characters per line is 64.

The user should not feel obligated to provide this information on an ADD command. Those persons who do not wish to include their home addresses can omit the HOMEADDRESS parameter, or if prompted for it, simply enter a null line.

Example:

```
HOMEA=('317 Adams','Ann Arbor, MI 48105')
```

HOMEPHONE='number'

"number" is a string of characters that gives the user's home phone number.

The number may not be more than 64 characters long. The delimiters may be omitted if the number does not contain any blanks.

The user should not feel obligated to provide this information on an ADD command. Those persons who do not wish to include their home phone numbers can simply omit the HOMEPHONE parameter, or if prompted for it, simply enter a null line.

Example:

```
HOMEPHONE='(313) 993-0000'
```

LASTMODDATE

The LASTMODDATE parameter is used by the DISPLAY command to display the date of the last MODIFY command issued to change the entry.

LASTMODUSERID

The LASTMODUSERID parameter is used by the DISPLAY command to display the userID of the user who issued the last MODIFY command to change the entry.

LASTSETDATE

The LASTSETDATE parameter is used by the DISPLAY command to display the date of the last $SET NAME that was issued for the entry.

LASTSETUSERID

The LASTSETUSERID parameter is used by the DISPLAY command to display the userID of the user who issued the last $SET NAME for the entry.

LISTMAINTAINER[='name']

> For the ADD and MODIFY commands, the LISTMAINTAINER parameter specifies a person who is responsible for maintaining the mailing list of a group.   This person should be able to add or delete a member from a group.   If only LISTMAINTAINER is specified, the user is prompted to enter the name of the list maintainer.

> Example:

> ```
> LISTMAINTAINER="John Doe"
> ```

> For the DISPLAY command, LISTMAINTAINER gives the name of the list maintainer.

MAILNAME={name@destination | name%relay@destination}

> For the ADD and MODIFY commands, "name" is a string up to 128 characters.   Nicknames or parentheses cannot be used in the remote name.   Optionally, a "relay" site name may be appended to indicate which site is to relay the message to the destination site.   The "destination" name may be up to 64 characters long; it may have up to 10 parts, each separated by a period.   The destination site must be locally known.   The destination site name must be known at the relay site and the remote name must be known at the destination site. Underscores must be used in place of blank spaces in the name.   If the destination site name is an MTS installation, it is recommended that the full name be specified.   For example, if the person's name is "John Brown" at UM, the mail name should not be Brown@UM but John_Brown@UM.

> Examples:

> ```
> MAILNAME=John_Smith@UBC
> MAILNAME=Jane.Doe%UCL@Newcastle
> ```

> For the DISPLAY command, MAILNAME displays the mail name.

MEMBERLIST[=FDname]

> For the ADD and MODIFY commands, MEMBERLIST specifies the members in a group.   If MEMBERLIST alone is specified, the user is prompted to enter a list of members.   One or more lines lines can be entered, ended by an end-of-file or a null line.   Each line should consist of one or more members separated by commas, if necessary.   A member can be one of the following:

> > name
> > USERID=userid
> > PROJECT=projectid

> If any member is to be deleted, the member should be prefixed by "−".   Optionally, a member may be added by prefixing it with "+".

> If "FDname" is specified, the User Directory program will build a list of members from the file or device name "FDname".

> For the DISPLAY command, MEMBERLIST gives a list of members in a group.   Subgroups and aliases will be expanded to members and primary names if the SET EXPAND option is ON.   If

MEMBERLIST alone is specified, the list of members with brief descriptions such as "group" or "remote" will be shown on the output file.   If "FDname" is specified, the member list will be copied to the file or device name specified.   The file "FDname" can then be specified with the MEMBERLIST parameter in the ADD or MODIFY command.

MEMBERS={'name' | 'name1','name2',...}
MEMBERS={ID=userid | P=projectid}

"name" specifies a name that is a member of a group.   "userid" and "projectid" specify a userID and a projectID, respectively, that are members of a group.

When using the MEMBERS parameter with the MODIFY command, a minus sign "–" may prefix a name, userID, or projectID to remove it from the group.   Otherwise, it is added to the group.   A plus sign "+" (implied) may be specified.

Examples:

```
MEMBER=ID=W173
MEMBERS=('Mary Smith','John Brown')
MEMBERS=(Mary_Smith,John_Brown)
```

For the DISPLAY command, the number of members in a group is displayed.

NAME='name'
'name'

"name" is the string of characters that indicates the full name to be used.

The full name is composed of up to 10 parts.   A part may be:

(1)   A string of up to 32 characters or a string of up to 31 alphabetic characters followed by a period.   These parts are called subnames.   "Jonathan", "J.", and "Dr." are examples of subnames.

(2)   A string contained within parentheses.   These parts are called alternate names or nicknames.   "(John)" is an example of a nickname.

These parts are separated by blanks or underscores to form a full name.   "Dr. Jonathan (John) P. (Paul) Brown" is an example of a full name.

The full name must not be longer than 64 characters, the last part must not be a nickname, and the full name must contain at least two subnames.

NAMEID
NID

The NAMEID or NID parameter is used by the DISPLAY command to display the name-id field. The name-id is a permanent unique internal pointer to the entry.

OWNERID=userID

> "userID" specifies a userID for the owner of the entry. The owner is used to indicate the mailbox to which messages are sent by the Message System.

> Unless the user is a directory manager, the owner is always set to the current userID. The owner field may be changed by the MODIFY command only if the user is a directory manager.

PRIMARYNAME='name'

> "name" specifies the primary name for an alias name entry in a name library. The primary name first must be enrolled in the master directory before being used with a name library.

> Example:

```
PRIMARYNAME='Mary Louise Smith'
```

REDISTRIBUTOR[='name']

> For the ADD and MODIFY commands, the REDISTRIBUTOR parameter specifies a person who should be contacted if subsequent problems occur when a mailing list for the group is redistributed. If only REDISTRIBUTOR is specified, the user is prompted to enter the name of the redistributor.

> Example:

```
REDISTRIBUTOR="John Doe"
```

> For the DISPLAY command, REDISTRIBUTOR gives the name of the redistributor.

REMOTENAME={name | name%relay}

> For the ADD and MODIFY commands, "name" is a string up to 128 characters. Nicknames or parentheses cannot be used in the remote name. Optionally, a "relay" site name may be appended to indicate which site is to relay the message to the destination site. The destination site name must be known at the relay site and the remote name must be known at the destination site. Underscores must be used in place of blank spaces in the name.

> Examples:

```
REMOTENAME=John_Gray
REMOTENAME=Jane.Doe%UCL
```

> For the DISPLAY command, REMOTENAME displays the remote name.

SITE
SITE=destination

> For the ADD and MODIFY commands, "destination" is a string of characters that indicates a destination site to which a message is to be sent.

The "destination" name may be up to 64 characters long; it may have up to 10 parts, each separated by a period. The destination site must be locally known.

Example:

```
SITE=UBC
```

For the DISPLAY command, SITE displays the destination site of the remote name entry.

SITEBOX

The SITEBOX parameter is used by the DISPLAY command to display the four-character remote mailbox name implied by the destination site name.

STATUS

The STATUS parameter is used by the DISPLAY command to identify the master directory or the current name library and to give counts of individual names, group names, remote names, and alias names.

TYPE

The TYPE parameter is used by the DISPLAY command to display whether the entry is an individual, a remote name, a group, or an alias.

THE *FINGER PROGRAM

In addition to using the *USERDIRECTORY program to look up another user on the system, you can also use the *FINGER program. This program is useful because it can be used to find users who are registered in the MTS User Directory on both UB-MTS and UM-MTS, regardless of which system you are signed on to at the time. You may also use *FINGER to find out about users on other Internet hosts.

Using *FINGER, you can verify if a user is registered in the User Directory or find out exactly how to spell the user's name. Enter a first name, last name, full name, group name, or a userID. *FINGER also tells you the last time the user's name was set on MTS, which is a rough approximation of the last time the user was signed on.

The following are samples of *FINGER sessions. Remember, you can search both UB-MTS and UM-MTS from either host. Simply add the @UB or @UM modifier to look for a name on the other host. To start the program, enter $RUN *FINGER at the MTS pound (#) prompt, then enter a search name at the prompt:

```
# run *finger
# Execution begins   21:14:54
  Finger UM>  duderstadt
  Login      Name         Port       When         Office
  TLPA Anne Marie Duderstad .... <Nov11/90 06:35> Academic Affairs
  LA9P James J. Duderstadt  .... <Nov13/90 03:24> Fleming Admin.
# Execution terminated   21:17:03
```

You can also run *FINGER with the name on the same command line, for example:

```
# run *finger par=james duderstadt
# Execution begins    14:35:48
  Login ID: LA9P              In real life: James J. Duderstadt
  Mailname: James_J._Duderstadt@um.cc.umich.edu
  Office: Fleming Administration Building
  Office Phone: 313-764-6270           Home phone:
  Name last set Nov13/90 12:06 by LA9P
# Execution terminated   14:35:54
```

Or with a userID, for example:

```
# run *finger par=W098
# Execution begins    14:30:13
  Login ID: W098              In real life: ITD Doc
  Mailname: ITD_Doc@um.cc.umich.edu
  Office: ITD Consulting and Support Services
  Office Phone: 313-998-7624           Home phone:
  Name last set Nov10/90 11:06 by W098
# Execution terminated   14:35:54
```

You can query multiple names by stringing them together with commas as separators. You can also do cross-system queries by appending @UM or @UB to user names. For example:

```
run *finger par=hya@ub, Anne User, john doe@um
```

INTRODUCTION TO FORUM

Forum is a program for conducting computer conferences.   Computer conferencing provides a facility for online discussion of topics of general interest.   People can access a conference using terminals from various locations, and can discuss a topic without having to meet physically.

Forum manages *discussions*.   One person starts a discussion by entering the discussion text and giving it a title.   Other people can then make their own *responses* to the initial entry.   The discussion text and each response are signed with the name of the person making them.   People can make as many responses to a discussion as they like.

To participate in a conference you must first join it.   You can join a conference as a *participant* or as an *observer*.   A participant may contribute to discussions while an observer, as the name implies, just observes them.   Once you have joined a conference, Forum keeps track of what you have seen.   Each time you run Forum, it will tell you what is new since the last time you looked.   Of course you can always go back and look at previous entries if you want to.

GETTING STARTED

To get started in Forum, enter the following command at your terminal:

$RUN *FORUM

The first time you do this, Forum will ask for some information about you (your name, phone number, and a short introduction).   Forum will then create a file named FORUM.PART under your userID. This file is used to keep track of your participation in Forum, so you should *not* change it or destroy it unless you want to permanently quit using Forum.

```
#r *forum
#Execution begins
 FORUM Version 2.3
 Please enter your first name:
?Jack
 Now enter your last name:
?Black
 Enter your phone number (or press RETURN):
?313-764-9595
 Enter a one-line descriptive blurb
    (e.g., "grad student in Religious Studies"):
?Systems Research Staff

 Jack Black                          phone: 313-764-9595
   Systems Research Staff

 Is above information correct?
?yes
 The file FORUM.PART has been created under your id.

 For an introduction to FORUM, type "? INTRODUCTION".

 You are now a participant in conference FORUM-NOTICES.

 Discussion 99 is an introduction to this conference.
```

```
You should enter:
    PRINT 99
to see it.

There are 16 discussions in this conference.
You can enter:
    PRINT CONFERENCE FORUM-NOTICES TITLES
if you want to see the titles, or
    PRINT CONFERENCE FORUM-NOTICES
to see the discussions.

Current conference is FORUM-NOTICES.
```

The first time you run Forum, you automatically join the conference FORUM–NOTICES.   There will be a number of existing discussions in that conference when you join.   Forum will tell you how to see all of these discussions if you want to, but will not automatically print them all out.   You may print out those discussions in their entirety by giving the command

PRINT CONFERENCE FORUM-NOTICES

or you may just look at their titles by giving the command

PRINT CONFERENCE FORUM-NOTICES TITLES

The prompt "Command:" is printed each time Forum is requesting a new command.   For example,

```
Command: PRINT CONFERENCE FORUM-NOTICES TITLES

11.    *FORUM suggestions
23.    HELP won't tell me.
96.    How to catch up on discussions which have proceeded without me?
99.    Introduction to FORUM - A Computer Conferencing Program
106.   How do the costs of running Forum and Confer compare?
129.   *Forum-USER open for planning purposes.
141.   Visual Editing now seems to work in *FORUM.
275.   FORUM passes the one-year mark at UM ...
338.   Comparison of *FORUM and Confer (cost, convenience, features, ...)
401.   New Conferences ...
813.   Changes in FORUM Version 1
945.   Bug report(s) for FORUM Version 1.1
```

Joining a Conference

There are other conferences that you can join if you are interested.   To find out what other conferences are available, enter the command

DISPLAY CONFERENCES

Forum will print out the names and descriptions of the conferences that you can join.   For example,

```
Command: display conferences
  IBM-PC           access: none          allowed: observer
    To disseminate information about IBM personal computers.
  FORUM-NOTICES  access: participant  allowed: participant    <- Current
    This conference contains discussion about *FORUM itself
  HELP-FORUM       access: none          allowed: participant
    A conference for HELP/EXPLAIN issues, on-line documentation, etc.
```

```
      SPIRES-NOTES    access: none         allowed: participant
        A place for describing tricks, idiosyncracies and gambits in *SPIRES
      APOLLO          access: none         allowed: participant
        A conference to discuss issues having to do with Apollo workstation.
      HARRIS          access: none         allowed: participant
        This is a conference for users of the Harris 800 computer.
      FLAK            access: none         allowed: observer
        A little itty bitty conference all 'bout all sorts o' things
      CONSULTANTS-NOTEBOOK
                      access: none         allowed: participant
        A Conference for Hints, Tips, Suggestions, and Thoughts about MTS
      MAC_LANGUAGES   access: none         allowed: participant
        To discuss programming languages for the Macintosh
      COMPUTER-ED     access: none         allowed: participant
        A Conference for Faculty & Staff interested in Computer Education
      TMH/C           access: none         allowed: participant
        The TMH/C compiler
      UNIX-FORUM      access: none         allowed: participant
        General discussions about Unix related issues and questions.
      STAR_WARS       access: none         allowed: participant
        A conference is for expressing views on Star Wars research on campus.
      SUN-WS          access: none         allowed: observer
        Sun Workstation.
      MICRO-IP        access: none         allowed: participant
        To discuss Macintosh and MS-DOS implementations of TCP/IP and friends.
      FRACTALS        access: none         allowed: participant
        This conference is for exploring and applying fractals.
      PROJECT-X       access: none         allowed: participant
        This conference is Systems Research Project X.
```

The first line of each entry gives the name of the conference, your current access (none, participant, or observer), and the access that you are allowed to have (participant or observer).   The second line gives a short summary of the purpose of the conference.

When a conference is initially organized, the conference organizer (manager) decides who is allowed to participate and who is allowed to observe.   Many conferences are private conferences, hence you will be neither allowed to participate in them nor to observe them.   Forum will not display the names of those conferences for you.

To join one of the above conferences, enter the command

    JOIN conference-name [{PARTICIPANT | OBSERVER}]

where "conference-name" is the name of the conference you are interested in.   You may specify whether you want to be a participant (if this is allowed) or just an observer.   If you specify neither, you will join as a participant if you are allowed to do so; otherwise, you will join as an observer.   For example,

```
    Command: join project-x
     You are now a participant in conference PROJECT-X.

     There is 1 discussion in this conference.
     You can enter:
        PRINT 3391
     to see it.
     Current conference is PROJECT-X.
```

Multi-Conference Mode

Once you have joined more than one conference, you are by default in multi-conference mode.   This means that Forum will automatically tell you about new responses and discussions in all of the conferences to which you belong.

As you look at items, Forum will automatically move back and forth between conferences for you. It will tell you when it has switched from one conference to another.   You can always use the command

DISPLAY CONFERENCE NAME

to find out which conference you are in.   You may find this multi-conference mode a bit confusing at first but you will soon become used to it.   You can restrict your activities to a specific conference with the command

CONFERENCES conference-name

You can subsequently enter the command

CONFERENCES ALL

to get back into multi-conference mode.   The examples in this section assume that you are in multi-conference mode.

Looking at New Discussions and Responses

Each time you run Forum, the program will tell you of all new discussions, and responses to existing discussions, with a message of the form

```
    FORUM-NOTICES: 1 new discussion, 5 discussions with new responses
```

You can look at these new items by entering the command

PRINT NEXT

or just

NEXT

For example,

```
    #r *forum
    #Execution begins
     FORUM Version 2.3
```

```
   PROJECT-X: 1 new discussion

  Current conference is PROJECT-X.
 Command: print next
  3391. A new beginning!
        Marlou Smith              15:19 Tue Feb 25/86      4 lines

     This notice is to introduce you to our new Project-X
     conference. Please join our conference and respond
     to this item to indicate that you have successfully
     joined.  Thank you.

  3391/1. John Paul Brown        16:21 Tue Feb 25/86      1 line

     Thank you for the invitation. I am now a member.

  Keywords:
     Introduction  Project-X
```

In the above example, the command PRINT NEXT was given to display discussion 3391.   The first line contains the discussion number and its title.   The number is assigned by Forum and provides a quick and easy way of referring to the discussion.   The second line gives the author, the time of the entry, and the number of lines in the entry.   Following this is the text of the discussion.

The responses follow the initial discussion.   The first line of each response has a number consisting of the discussion number followed by a response number.   Following this is the name of the responder, the time of the entry, and the number of lines in the response.   The response itself is on the subsequent lines.

At the end of the responses is a list of keywords for the discussion.   These keywords are entered by the person starting the discussion at the time the discussion is initially entered.   (They can also be added to or modified later.)   The keywords can be used to find discussions on particular topics. Keywords are especially useful for finding things in conferences that contain many discussions.

The first time the PRINT NEXT (or NEXT) command is given, Forum will show you the new responses for the first existing discussion.   You can look at these, possibly enter a response yourself (see below), and then issue another PRINT NEXT to see the responses for the next discussion.   Once you have gone through all the new responses to existing discussions, PRINT NEXT will start to print the new discussions.

Forum assigns discussion numbers sequentially, regardless of conference.   Thus, you should not be alarmed if discussions in a conference you belong to are not sequentially numbered; the discussions with the missing numbers are in a different conference.

Getting Help

Forum has a fairly extensive Help/Explain facility.   Any time you are unsure of what to do, you can enter HELP or a question-mark "?" and Forum will give you some assistance.   If you want help with a particular command, enter

       HELP command

or just

        ? command

where "command" is the particular command you want help with.

DISPLAYING DISCUSSIONS

   The previous section showed you how to look at new discussions and responses as they are entered. Often you may join a conference that has been in progress for some time and contains lots of material. Forum will not overwhelm you by showing all the old discussions, but you can go back and look at any of them.

The PRINT Command

   You can use the PRINT command to see all or part of any discussion or set of discussions.   The PRINT command is given in the form

        PRINT [which-discussions] [what-to-print]

   The parameter "which-discussions" selects the discussions to print.   Some of the choices are as follows:

n	discussion "n"
n–m	discussions "n" through "m"
NEXT	the next discussion
CURRENT or *	the current discussion
LAST	the last (highest numbered) discussion
LAST n	the last "n" discussions
ALL	all discussions
NEW	all new discussions (not yet seen)
CHANGED	all changed discussions (new discussions and discussions with new responses not yet seen)

If this parameter is omitted, the CURRENT discussion is used.   This is the most recent discussion that has been referred to by a command, such as the PRINT or RESPOND command.   When you are cycling through discussions with the PRINT NEXT command, each time a discussion is printed out it becomes the current discussion.

   The parameter "what-to-print" selects the elements of each discussion that are to be printed.   Some of the choices are as follows:

/n	response "n"
/n–m	responses "n" through "m"
/n–END	response "n" and all following responses
LAST	the last (highest numbered) response
LAST n	the last "n" responses
ALL	all entries
NEW	all new entries (not yet seen)
INTRODUCTION	the introductory entry
TITLES	the discussion title
KEYWORDS	the discussion keywords

If this parameter is omitted, the default is dependent on the choice selected for the "which-discussion" parameter.

Some examples of the PRINT command are as follows:

PRINT 4   Print all of the responses for discussion 4
PRINT 6 /15   Print the 15th response for discussion 6
PRINT 5 /4–5   Print the 4th and 5th responses for discussion 5
PRINT 3 LAST   Print the last response for discussion 3
PRINT ALL   Print all discussions and all responses
PRINT ALL LAST 2   Print the last 2 responses for all discussions
PRINT ALL TITLES   Print all of the discussion titles

When you first join a conference you might want to print all the titles to see which discussions interest you. You might also want to get a printed copy of all or some of the discussions. If you do want a printed copy, you can have Forum direct output to a file or device such as *PRINT*. To do this just append the parameter

OUTPUT=FDname

to the PRINT command. For example:

PRINT 115 OUTPUT=*PRINT* Copy all of discussion 115 to *PRINT*
PRINT ALL TITLES OUTPUT=–TITLES
                           Copy all of the discussion titles into the file –TITLES
PRINT ALL OUTPUT=–FORUM
                           Copy all discussions and responses into the file –FORUM (use this particular example with caution, since there may be a very large amount of information involved)

If more than one discussion is printed, Forum will start printing each discussion on a new page.

Keyword Searching

Another way to find discussions on specific topics is to look for keywords. Discussions have keywords associated with them (assuming that the author of the discussion has entered them). To find something by keyword, you can use the following form of the PRINT command:

PRINT KEY="subject" TITLES

This will give you the titles of all discussions with the keyword "subject". Note that the quote marks are required. You can then decide which of these discussions you want to investigate further. For example,

```
Command: print key="introduction" titles

 3391. A new beginning!
```

RESPONDING TO DISCUSSIONS

The previous two sections illustrated how to find your way around a conference and print things out. This section describes how to participate more fully.   You can enter a response to a discussion with the command

    RESPOND discussion

where "discussion" is the number of the discussion you want to respond to.   Forum will prompt for the text of your response.   Note that Forum does no formatting of your response, so you should enter it as you would like it to appear.   End your response with $ENDFILE or by simply entering a null line.   At this point, Forum will prompt with a question of the form

```
 O.K. to enter this as response in discussion 15?
```

There are several possible responses:

YES or OK	Enter the response
NO	Delay entering the response, but save the text for later access
CANCEL	Cancel the response and discard the text
EDIT	Edit the response by invoking the MTS File Editor

When you reply YES or OK, Forum will give a reply of the form

```
 Entered as response 15/4.
```

Continuing our example:

```
 Command: respond
 ?     1    _Yes! I too am now a member.
 ?     2    _ok
  O.K. to enter this response in discussion 3391?
 ?yes
  Entered as response 3391/2.
```

You can also compose your response in a file.   In this case, enter

    RESPOND discussion INPUT=filename

where "filename" is the name of the file containing your response.   As in the example above, Forum will ask if the response can be entered and you have an opportunity to edit it if you wish.

If, when you have composed a response, the lines are too long to fit on the terminal screen, Forum will issue a warning and give you the option of editing your entry to shorten the lines.   If you choose not to change the text, Forum will wrap the long lines onto multiple screen lines when the entry is printed.

If, after you have composed your response, you find you are responding to the wrong discussion, you can still change your mind.   When Forum asks if it is OK to enter the response, reply NO.   You can then enter

    RESPOND discussion CONTINUE

where "discussion" is the number of the discussion you really wanted to respond to.   Forum will use your previously-composed text as the response (you can still edit it prior to entry).

STARTING DISCUSSIONS

Starting discussions is as simple as replying to them.   Enter the command

   DISCUSS

In multi-conference mode, Forum will respond with

```
Enter name of conference to put discussion in:
```

After being told which conference (or as the first prompt in single-conference mode), Forum replies with

```
Enter one-line title for discussion:
```

Enter a descriptive title for your discussion.   Forum will then prompt for the text of your discussion. Things work exactly as they do for responses.   Again, you can edit your discussion or compose it in a file if you like.   If you have composed it in a file, the command would be

   DISCUSS INPUT=filename

If, when you have composed a discussion, the lines are too long to fit on the terminal screen, Forum will issue a warning and give you the option of editing your entry to shorten the lines.   If you choose not to change the text, Forum will wrap the long lines onto multiple screen lines when the entry is printed.

Setting Keywords

Forum provides a simple keyword mechanism intended to facilitate finding discussions on various topics.

After you have entered a new discussion in Forum, you will be prompted to enter keywords *one per line*.   The list of keywords is terminated, just as for a discussion response, with a null line or end-of-file.   You will then be asked whether to enter the keywords.   You can enter YES, NO, EDIT, etc., just as for entering discussion responses.

The list of keywords can also be prepared in advance as a file containing the desired keys, one per line.   You can then specify this file on the DISCUSS command:

   DISCUSS ... KEYWORDS=FDname

The keywords chosen can actually be phrases rather than just individual words.   Also, Forum does not distinguish between upper and lowercase when searching for keywords.   However, you should try to be consistent when entering keywords.

Setting an Expiration Time

Every discussion may have an associated expiration time; when the discussion has expired, it can no longer be seen or responded to.

This mechanism is intended to reduce the volume of information in a conference by allowing obsolete items to be automatically suppressed.

An expiration time can be specified at the time you start a discussion by using the form

DISCUSS EXPIRE=time

on the DISCUSS command. The expiration time (right-hand side of the EXPIRE keyword) may be given by any of the following:

NONE	the discussion should never expire.
DEFAULT	the discussion's expiration is controlled by an option of the conference, described below.
date	a specific date (or date and time) at which the discussion is to expire. This may be given in more or less any conventional format, for example: EXPIRE=Aug 1/86 EXPIRE=1Aug,1986 EXPIRE=8-1-86 (this form should be avoided due to ambiguity of day/month order) EXPIRE=Aug1 (assumes in the future)
interval	an interval relative to the present time. This is specified as an integer and a unit name, for example: EXPIRE=2 weeks EXPIRE=1 year

If you do not specify an expiration time, the default expiration time as set by the conference manager is used. Usually, this is NONE (no expiration time).

The discussion that comprises our previous example could have been entered in the following manner:

```
Command: discuss expire=apr 1/86
 Enter name of conference to put discussion in:
?project-x
 Enter one-line title for discussion:
?A new beginning!
?    1    _This notice is to introduce you to our new Project-X
?    2    _conference. Please join our conference and respond
?    3    _to this item to indicate that you have successfully
?    4    _joined.  Thank you.
?    5    _
 O.K. to enter this as a new discussion in PROJECT-X?
?ok
 Entered as discussion 3391.
 Enter keywords or phrases for this discussion (ONE PER LINE):
?    1    _Introduction
?    2    _Project-X
?    3    _
 O.K. to enter keywords for discussion 3391?
?ok
```

```
   Discussion 3391 now has 2 keys.
```

The Workspace

When you are composing discussions or responses, Forum uses a workspace in your participant file to store the text until you enter it.   Should you encounter some abnormal interruption while entering something (or if you give an MTS command and then forget to $RESTART), Forum will have stored as much of the information as possible in your workspace, and you can continue where you left off the next time you run Forum.

If there is something in your workspace when you start to compose a new discussion or response, Forum will tell you and ask if you want to keep it.   If you reply in the affirmative, Forum will continue from where you left off.

DISPLAYING VARIOUS THINGS

You can examine a number of items with the DISPLAY command.   For example, your personal information can be displayed with the following commands:

    DISPLAY NAME
    DISPLAY PHONE
    DISPLAY BLURB

You can change these with the SET command (see below).   You can use the DISPLAY command to find out information about other participants in the conference.   The command

    DISPLAY PARTICIPANTS

gives a list of all the participants along with their phone numbers and blurbs.   For example,

```
  Command: display participants
   Marlou Smith                        phone: 313-764-2121
     Systems Research Staff (project director)
     Last FORUM session: 14:45 Mon Mar  3/86
   John Paul Brown                     phone: 313-764-9595
     Systems Research Staff (project liaison)
     Last FORUM session: 15:26 Tue Feb 25/86
   Jack Black                          phone: 313-764-9596
     Systems Research Staff
     Last FORUM session: 12:16 Tue Feb 25/86
```

You can look to see if a particular person is a participant by entering

    DISPLAY PARTICIPANT="string-of-text"

where "string-of-text" is the name you are looking for.   Forum will find everyone who matches the string.   For example,

```
   DISPLAY PARTICIPANT="John"
```

will find all participants named John.   You must include the quotes around the item.   Blanks and case are ignored and you can use a "?" as a pattern to match zero or more characters.   Thus,

```
    DISPLAY PARTICIPANT="Jo?n"
```

would match, for example,

```
    JOHN
    JON
    JOHAN
```

You can also find out what conferences a participant belongs to with the command

DISPLAY PARTICIPANT="string" CONFERENCES

This command will list all the conferences (to which you have access) that the given participant belongs to.

There are a number of other things you can display. See the description of the DISPLAY command for more details.

CHANGING VARIOUS THINGS

Changing Your Personal Information

You can change any of your personal information with one of the following SET commands:

SET NAME="text"
SET PHONE="text"
SET BLURB="text"

Note that you must include the quotes around the items you are changing.

Changing Responses and Discussions

It is possible for the author of a response or discussion to edit the text of the item with the EDIT command. This should only be used for such things as changing typographical errors or fixing up the format of an item. Major changes to an item may result in a change to the context of a discussion, which can be very confusing to the other participants who might not reread the changed item.

If you want to make changes, use the command

EDIT discussion INTRO

or

EDIT discussion/response

where "discussion" and "response" are the actual numbers of discussions and responses. The EDIT command will invoke the MTS File Editor and a colon ":" prompt will appear. You may use any edit command including the VISUAL command to edit the discussion or response.

Each participant can edit only his or her own discussions or responses. The conference manager may edit all discussions and responses.

Changing Keywords, Titles, and Expiration Dates

The EDIT command can also be used to change the keywords for a discussion. Again, this may only be done by the author of the discussion or the manager of the conference. To edit the keywords for a discussion, use the command

    EDIT discussion KEYWORDS

This will produce a "file" containing the current list of keywords for the discussion (possibly none). This file can then be edited to contain the desired replacement keyword list. The keywords should be entered one per line. Note that they can actually be short phrases, rather than single words.

The author of a discussion can change the title of a discussion by using the command

    MODIFY discussion TITLE="new title"

The author of a discussion may also change the expiration time for a discussion with the command

    MODIFY discussion EXPIRE=time

where "time" is as described in the section on setting expiration times.

DELETING RESPONSES AND DISCUSSIONS

The author of a discussion or response can delete that item with the command

    DELETE discussion INTRO

or

    DELETE discussion/response

If you delete a discussion introduction, Forum will only delete the introductory text of the discussion, not the title. Forum will indicate that a response or introduction has been deleted.

CLOSING DISCUSSIONS

The author of a discussion has the ability to close or terminate the responses to that discussion. This might be done, for example, if the author were conducting an informal poll and had collected sufficient responses. The command is

    CLOSE discussion

Although responses are closed, the discussion remains in the conference and the author can still enter responses. The author can issue the command

    OPEN discussion

to allow other conference members to respond to the discussion again.

QUITTING A CONFERENCE

You can quit a conference by entering the command

QUIT conference-name

THE CONFERENCE MANAGER

Each conference has a conference manager, usually the person who has started the conference and under whose userID the conference file exists.   The conference manager is responsible for overseeing the conference and for keeping discussions on track.

The conference manager has the same abilities as the authors of discussions and responses, and can thus edit or delete items (for example, obscene remarks or personal attacks), or change titles.

MISCELLANEOUS ISSUES

FORUMPROFILE

The first time you run Forum, a file named FORUM.PART will be created under your userID.   This file is used to keep track of your participation in Forum, so you should *not* directly tamper with it or destroy it unless you want to permanently quit using Forum.

The file FORUM.PART also contains a set of Forum commands called your Forum profile that are automatically invoked at the beginning of each Forum session.   By default, your Forum profile contains the single command

SELECT CHANGED

that builds a list of new discussions and responses, which may then be printed using PRINT SELECTED or PRINT NEXT.

Commands may be inserted or changed in the Forum profile by issuing the command

EDIT FORUMPROFILE

Note that this is a Forum command, not the MTS $EDIT command.

Using Forum From More Than One UserID

You can use Forum from more than one userID without having to join from each userID.   To do so, you must permit your participant file Read-Write to the other userIDs you wish to use, then specify ID=userID in the PAR field of the $RUN command, where "userID" is the userID containing the participant file.

For example, if your participant file is under the userID WABC, and you wish to use it from the userID WXYZ, then from the userID WABC, issue the command

```
$PERMIT FORUM.PART RW WXYZ
```

(WABC can continue to run Forum as usual) and from WXYZ issue the command

```
$RUN *FORUM PAR=ID=WABC
```

(this will access the participant file under WABC, instead of under WXYZ)

A conference name may also be specified in the PAR field to restrict Forum to a single conference. It may appear either before or after the ID operand, with a separating comma, for example,

```
$RUN *FORUM PAR=FORUM-NOTICES,ID=WABC
```

STARTING AND ADMINISTERING CONFERENCES

Starting a conference is a relatively simple matter. This section gives the procedure for starting a conference and describes the various facilities available to conference managers.

There are a number of things you should bear in mind when starting a conference:

(1)   Remember that the conference file exists under your userID. Depending on the level of activity in the conference, it may consume a large amount of file space.

(2)   You should give the conference a meaningful name and description so that others can decide if it is of interest to them.

(3)   Use the $PERMIT command to permit the conference for use by others.

If you are running a public conference, you have a responsibility to see that the conference is "managed." This means that you should do such things as:

(1)   Make sure that entries are appropriate and are not in questionable taste.

(2)   Offer gentle reminders to keep discussions on topic.

(3)   Use the expiration mechanism to automatically remove out-of-date discussions. You may also occasionally want to manually purge out-of-date or irrelevant discussions.

(4)   Make some effort to check the conference keywords periodically for consistency. There is a facility available that makes the maintenance of the keywords relatively straightforward.

Obviously not all these things are necessary for private or small conferences, but you should bear them in mind.

Starting a Conference

The command

```
CREATE conference-name
```

will elicit the response:

```
    Create new conference "conference-name"?  Please confirm.
```

After you confirm, Forum will proceed to allocate file space for the conference under your userID. The conference file will have a name of the form FORUM.Cxxxxx, where "xxxxx" is an integer number.

You will then be prompted

```
    Enter a one-line descriptive blurb for the conference.
```

You will be reminded to allow other users to become members of the conference. Use the $PERMIT command to allow other users access to the conference. If you later wish to check the access that others have to the conference, you can use the command

> DISPLAY CONFERENCE ACCESS

Conference Manager

The person who starts a conference (or under whose userID the conference file exists or who has UNLIM access to the conference file) becomes the conference manager. The manager can:

(1)   Change the name of the conference.

(2)   Change the description (blurb) of the conference.

(3)   Set the access that other users may have to the conference.

(4)   Do the same things as authors (i.e., edit and delete discussions and responses and close discussions).

(5)   Set an introductory discussion for the conference.

Conference Introduction

You can, if you wish, enter a discussion that will act as an introduction to the conference. Such a discussion might give some comments on the purpose and motivation behind the conference. You can then issue the command

> SET CONFERENCE INTRODUCTION=n

where "n" is the number of the introductory discussion. Then when someone first joins the conference, he or she will get a prompt of the form

```
    Discussion 28 is an introduction to this conference.
    You should enter:
         PRINT 28
    to see it.
```

Manager-Mode

In order to act as manager for a conference, you must go into "manager-mode".   To do this, enter the command

CONFERENCE conference-name MANAGE

While in this mode you have some extra SET options available.   You can enter the commands

SET CONFERENCE NAME=new-conference-name

and

SET CONFERENCE BLURB="new-blurb"

When discussion entries are edited or deleted, the text of the entries is normally left in the conference file to provide an "audit trail" of conference discussions.   This "junk" can be periodically deleted by issuing the command

PURGE CONFERENCE

Expiration Times for Discussions

All discussions entered in Forum will have the expiration time set to DEFAULT if this time is not given explicitly on the DISCUSS command.   The default expiration time may be set by the conference manager.

The default expiration time may be expressed either as a fixed date or as an interval.   To set the default expiration date for a conference (in manager mode), enter the command

SET CONFERENCE EXPIRE=time

Fixed dates are specified in the same manner as they are on the EXPIRE parameter for the DISCUSS command.   For example,

```
SET CONFERENCE EXPIRE=Jun 30/91
```

In this case all discussions in the conference will expire on June 30, 1991.

An interval may be either NONE, or an integer followed by a "unit name".   For example,

```
SET CONFERENCE EXPIRE=6 months
SET CONFERENCE EXPIRE=24hours
```

The default interval causes the discussion to be considered expired if there have been no new RESPONSES for the specified length of time—it applies from the time of the last response, not the time the discussion is started.   For the purposes of this option, "1 month" is the same as "30 days" and "1 year" is the same as "365 days".

If a default expiration time has not been specified for the conference, the interval NONE is used (no expiration time).

EXPIRED discussions cannot be seen, but do not get removed from the conference until the conference manager removes them.   Until then the author or the conference manager can still modify the expiration time to reactivate an expired discussion.

        SELECT EXPIRED

or

        PRINT EXPIRED

when used by the conference manager in manager mode, will select all expired discussions, not just those started by the manager.

        PURGE EXPIRED

will remove all expired discussions from the conference file.   Conference managers should probably review the expired discussions (PRINT EXPIRED TITLES) to see if any should be extended, before using this command.   It might also be good practice for some conferences to print a copy of the expired discussions into a file (PRINT EXPIRED ALL OUTPUT=FDname) and save it on tape before purging them.

Conference Keywords

Keywords provide a very useful tool for finding discussions in a conference.   Since keywords are entered by the individual authors of discussions, it is likely that there will be inconsistencies in the keywords selected.   The conference manager should periodically check the list of keywords for the conference.

Forum provides a facility to assist in maintaining the keyword "database" for the conference.   The command

        EDIT CONFERENCE KEYS

(in manager mode), builds an index of all keywords used in the conference in the workspace.   This index may be edited—adding, deleting, or changing existing entries.   On leaving the editor, the keywords for all discussions are replaced from the current contents of the workspace (after requesting confirmation).

Each line of the keyword index is of the form

        keyword or phrase : discussion# discussion# ...

where the keyword or phrase must begin in the first column.   If there are too many numbers to fit conveniently on one line, the list of numbers may be continued to subsequent lines by beginning the line with one or more blanks.   If a keyword or phrase must contain a colon, the entire key should be surrounded by quotes:

```
    "Keys containing : look like this" : 1000 1056
```

Obviously, this facility has to be used with some care—it has the potential to completely mess up the conference's keywords; but it should make it very easy to edit the keywords for consistency.   A hard copy of the discussion titles from the conference will probably be useful when updating the keyword

index.

For a large conference, using this command could consume quite a bit of processor time and cost a fair amount.

Removing a Discussion

The conference manager may, while in manager-mode, completely remove a discussion and all responses with the command

PURGE DISCUSSION discussion

Note that this removes all traces of a discussion, and so should be used with caution.

Destroying a Conference

The DESTROY command is used to permanently destroy a conference and the associated conference file:

DESTROY conference-name

where "conference-name" is the name of the conference to be destroyed.   Only the conference manager can destroy the conference.

Forum will request confirmation before actually destroying it.

Note that all discussions in the conference being destroyed will be deleted as a result.   For public conferences it is good manners to inform participants if you intend to destroy the conference.

Moving a Conference

A conference manager can change the userID under which the conference file lives.   This is done as follows:

(1)   give manager access to the userID to which the file is to be moved using

PERMIT MANAGE userID

(2)   run Forum from the userID to which it is to be moved.

(3)   enter manager mode using

CONFERENCE conference-name MANAGE

and enter the command

MOVE CONFERENCE

FORUM COMMANDS

The following notation conventions are used in the prototypes for the Forum commands:

lowercase	represents a generic type which is to be replaced by an item supplied by the user.
uppercase	indicates material to be repeated verbatim in the command.
brackets [ ]	indicate that material within the brackets is optional.
braces {	}	indicate that the material within the braces represents choices, from which exactly one must be selected. The choices are separated by vertical bars.
ellipsis ...	indicates that the preceding syntactic unit may be repeated.
underlining	indicates the minimum unambiguous form of the command or parameter. Longer abbreviations are accepted.

CHECK

CHECK can be used by a conference manager to fix up problems with a conference file, such as problems caused by system malfunctions at unfortunate times.

There are two forms of the command.   Both require that the conference manager be in conference-manager mode (see the discussion above on managing conferences).

> CHECK DISCUSSION n

verifies the response chain for discussion "n", and checks that it is consistent with the information in the master file.   If it finds anything wrong, it will prompt for permission to fix it. "Fixing" may mean some responses will be lost.   This command requires that you be in conference-manager mode for the conference containing discussion "n".

> CHECK CONFERENCE

verifies the response chain for each discussion in a conference.   It will request permission to fix any invalid discussions.

CLEAR

The CLEAR command deletes all lines from the workspace.   A clear is done automatically when the STOP command is entered.

CLOSE

The CLOSE command is used to prevent further responses to a discussion.   The format is

> CLOSE [discussion-specifier]

where "discussion-specifier" is a discussion number, or one of the operands CURRENT, *, or NEXT.   If no parameter is given, it defaults to CURRENT.

This command may only be issued by the author who started the discussion or the conference manager.   The author (or manager) may continue to add responses to a closed discussion.

COMMENT

The COMMENT command, or any line beginning with an asterisk "*", is ignored by Forum. The syntax is

COMMENT text

or

* text

CONFERENCES

The CONFERENCES command is used to change to a different conference.

CONFERENCES conference-name
CONFERENCES ALL

The first form causes the specified conference to become the current conference.   It also causes subsequent SELECT commands and print operands to be restricted to items in the specified conference.

The second form does not change the current conference, but allows subsequent commands to refer to items in all conferences the user belongs to.   Forum will switch from one conference to another as necessary.

CREATE

CREATE starts a new conference.   The format is:

CREATE conference-name

where "conference-name" is a 1 to 25-character name for the conference.   Forum's response will be:

```
Create new conference "conference-name"?  Please confirm.
```

After you confirm, Forum will proceed to allocate file space for the conference under your userID. The conference file will have a name of the form FORUM.Cxxxxx, where "xxxxx" is an integer number.

You will then be prompted:

```
Enter a one-line descriptive blurb for the conference.
```

You will be reminded to allow other users to become members of the conference.   Use the Forum PERMIT command to permit the conference to others.

DELETE

The DELETE command is used to delete an entry (either the introduction or a response) in a discussion.   The format is:

DELETE [discussion-specifier]

where "discussion-specifier" may specify a discussion number, a response in the form discussion/response, or one of the operands CURRENT, *, or NEXT. If omitted, CURRENT is assumed.

This command may only be issued by the author of the specified entry or by the conference manager.

DESTROY

The DESTROY command is used to permanently destroy a conference and the associated conference file. The syntax is

DESTROY conference-name

where conference-name is the name of the conference to be destroyed. Only the conference manager can destroy the conference.

Forum will request confirmation before actually destroying it.

Note that all discussions in the conference being destroyed will be deleted as a result.

DISCUSS

The DISCUSS command is used to start a discussion. It has the following format:

DISCUSS [[TITLE=]"title"] [INPUT=FDname] [{EDIT | VISUAL}]
        [CONTINUE] [CONFERENCE=conference-name]
        [KEYWORDS=FDname] [EXPIRE=expiration-time]
        [FORMAT={ON | OFF}] [{AUTHOR | PSEUDONYM}="string"]

"title" is a quoted string specifying a title for the discussion. If it is not specified, Forum will prompt for a title.

If INPUT=FDname is specified, Forum will read the contents of the file specified by "FDname" to obtain the initial entry for the discussion.

If EDIT is specified, Forum will enter edit mode and any edit commands can be used to compose an initial entry for the discussion.

If VISUAL is specified, Forum will enter the editor in VISUAL mode for the composition of an initial entry.

If none of INPUT, EDIT, or VISUAL appears, Forum will prompt for an initial entry to be typed at the terminal.

If CONFERENCE=conference-name is specified, the discussion will be entered in the indicated conference. If it is not specified, it will be entered in the active conference. If there is no active conference, Forum will prompt for the name of the conference to put the discussion in.

If EXPIRE=expiration-time is specified, the discussion will expire at the specified time.   If it is omitted, it will default as determined by the conference manager.

Once the entry has been composed, Forum will prompt for whether to enter it in the conference. The legal replies are:

YES or OK	to enter the text.
NO	to return to Forum command mode, leaving the text in the workspace.
CANCEL or end-of-file	
	to cancel the DISCUSS command and clear the workspace.
EDIT	to edit the text.
VISUAL	to edit the text in visual mode.

CONTINUE is used if the workspace contains an incomplete discussion or response entry whose composition is to be continued to form the new discussion.   If the workspace is not empty, and CONTINUE is not specified, Forum will prompt for whether to clear the workspace or continue it.

If KEYWORDS=FDname is given, "FDname" specifies a file containing a list of keywords and phrases for the new discussion, with each keyword or phrase on a separate line.   If this is not given, Forum will prompt for keywords to be entered from the terminal after the discussion has been composed and entered.

If FORMAT=OFF is specified, Forum will not reformat the discussion.   This is useful when entering text that has been previously formatted by another message or conference.

The AUTHOR or PSEUDONYM option may be given to change the author's name for the discussion.

DISPLAY

The DISPLAY command prints out information about conferences and participants.   It has the form

DISPLAY item [{ON FDname | OUTPUT=FDname}]

where "item" may be:

CONFERENCES	to list the conferences you belong to or may join.
CONFERENCES NEW	to list all conferences that have been created since the last DISPLAY CONFERENCES command.
CONFERENCES JOINED	to list all conferences that the user has joined.
CONFERENCES NOT JOINED	to list all conferences that the user has not joined.
CONFERENCES name-pattern	to list all conferences that satisfy the patterned name, e.g.,

```
CONFERENCES ?MINUTES?
```

CONFERENCE INTRODUCTION

to display the number of the introductory discussion for the current conference (if there is one).

CONFERENCE NAME   to display the name of the current conference.

CONFERENCE BLURB   to display the descriptive blurb for the current conference.

CONFERENCE EXPIRE   to display the default expiration period for discussions in the current conference.

CONFERENCE=conference-name

displays the name, blurb, and the access you have and are permitted to have for the requested conference.

KEYWORDS   to display an index of all the keywords in a conference or conferences.

KEYWORDS="string"   to display an index of all keywords that start with the specified string.   The character "?" may be used in the string as a pattern to match zero or more characters.

PARTICIPANTS   to list the names of all participants in a conference or conferences.

PARTICIPANTS NEW   to list any new participants (since the last time you did a DISPLAY PARTICIPANTS).

PARTICIPANT="string"   to list all participants whose names contain the specified string.   Blanks and case are ignored in comparing the names with the string, and the character "?" may be used in the string as a pattern to match zero or more characters.

PARTICIPANT="string" NAME to display just the participant name(s).

PARTICIPANT="string" CONFERENCES

to list the names of conferences that participants belong to.   The modifier will give the names of those conferences that both you and the requested participants have access to.

STATISTICS   to display a number of usage statistics for Forum.

NAME   to display the current user's name

PHONE   to display the current user's phone number

BLURB   to display the current user's blurb

"item" may also be any of the SET operands.   See the description of the SET command for these operands.

ON FDname or OUTPUT=FDname allows you to direct the output from the command to a file or to *PRINT*, etc.   Forum does no special formatting of the output.   If omitted, it defaults to the MTS unit SERCOM, normally your terminal.

EDIT

The EDIT command is used to edit a previously entered discussion or response, to resume editing a partially composed discussion or response, or to edit the user's Forum profile.

The format is

EDIT operand [VISUAL]

where "operand" may be

discussion	to edit the introduction of the indicated discussion. This may be a discussion number, or one of NEXT, CURRENT, or *.
discussion/response	to edit the specified response. The discussion may be specified as above; response must be given as an integer or FIRST or LAST.
discussion KEYWORDS	to edit the keywords for the indicated discussion.
FORUMPROFILE or FP	to edit the Forum profile.

If the operand VISUAL is given, the editor will be invoked in visual mode.

If no operand is given, Forum will resume editing a discussion or response left in the workspace from a previous command.

EXCLUDE

The EXCLUDE command is used to prevent a specified conference or discussion from being retrieved with SELECT or PRINT commands.

The format is:

EXCLUDE CONFERENCE=conference-name

or

EXCLUDE [discussion-specifier]

where "conference-name" is the name of a conference, and "discussion-specifier" can be a discussion number, *, CURRENT, or NEXT.   It defaults to CURRENT.

The first form excludes the specified conference. Subsequent PRINT or SELECT statements will not normally retrieve discussions from that conference. Discussions in the conference can still be selected by specifying the discussion number or conference name explicitly.

The second form excludes the single discussion from subsequent PRINT or SELECT commands. Again, the discussion can later be printed if the number is used explicitly.

The EXCLUDED operand on the SELECT or PRINT command allows retrieval of all excluded discussions.

This command is normally used to ignore discussions that you are not interested in, or to ignore conferences that you wish to view only occasionally.

EXPLAIN

EXPLAIN is a synonym for HELP. The syntax is

EXPLAIN [topic]

HELP

The HELP command is used to request explanations about Forum. The syntax is

HELP [topic]

where "topic" is a specific topic for which an explanation is wanted. If "topic" is omitted, general help information is provided. Entering HELP is the same as entering "?".

INCLUDE

The INCLUDE command is used to reverse the effect of an EXCLUDE command. The specified conference or discussion will again be accessed by SELECT or PRINT commands. The format is:

INCLUDE CONFERENCE=conference-name

or

INCLUDE [discussion-specifier]

where "conference-name" is the name of a conference, and "discussion-specifier" can be a discussion number, *, CURRENT, or NEXT. It defaults to CURRENT.

JOIN

The JOIN command is used when you want to become an observer or participant in a given conference other than FORUM−NOTICES. It has the following format:

JOIN conference-name [{PARTICIPANT | OBSERVER}]

The first parameter specifies the name of the conference to be joined. The conference manager must have permitted it before you are allowed to join.

PARTICIPANT or OBSERVER specifies whether you wish to be able to enter discussions and responses (PARTICIPANT) or just to print them (OBSERVER). If neither is given, you will become a participant if the conference manager has given you participant access.

LOCK

This command may only be used by conference managers. The command is given as:

LOCK CONFERENCE

This sets a flag in the conference file which causes any subsequent attempts to access the conference to get the message "Conference x is temporarily unavailable." (The conference manager can still access it.) The effect of this command can only be undone with the UNLOCK command.

MCMD

This command can be used to issue an MTS command from Forum. The syntax is

MCMD [mts-command]

MODIFY

The MODIFY command is used to change various attributes of a discussion. The form is:

MODIFY [discussion-specifier] operand=value

where "discussion-specifier" is a discussion number, one of the operands CURRENT, *, or NEXT, or a response number in the form discussion/response.

The operands available are:

TITLE="string"   to change the title of the discussion.

EXPIRE=expiration   to change the expiration time of the discussion. The
                          right-hand side must be a specific date/time, an interval
                          relative to the present, or one of the words NONE or
                          DEFAULT.

AUTHOR="string"   to change the "author's name" that is displayed when the
                          specified discussion or response is printed.

FORMAT={ON | OFF}   to specifiy whether Forum is to format the discussion or
                          response. Setting FORMAT=OFF is useful when entering
                          text that has been previously formatted by another message or
                          conference.

LAST SEEN response-number
                          to remember this as the last response seen for the discussion.
                          This allows the user to attention out of a long response and
                          review it again later as a new response.

The title and expiration time may only be changed by the participant who started the discussion or the conference manager. The author's name can only be changed by the participant who entered the discussion or response or by the conference manager.

Use the EDIT command to change the text of a discussion or response or the keywords for a discussion. See the section on the EDIT command for more details.

MOVE

The MOVE command can be used to move a participant file to another userID. The command has the following syntax:

MOVE PARTICIPANT

and must be issued from the userID to which the file is to be moved.

For example, to move a participant file from userID AAAA to userID BBBB, the following procedure must be followed:

(1)   sign on to userID AAAA

(2)   permit the file FORUM.PART to BBBB with the command

```
$PERMIT FORUM.PART UNLIM BBBB
```

(3)   sign off

(4)   sign on to userID BBBB

(5)   run Forum with the command:

```
$RUN *FORUM PAR=ID=AAAA
```

which will reference the file under userID AAAA

(6)   enter the Forum command:

```
MOVE PARTICIPANT
```

which will move the file to userID BBBB.

After this, Forum can be run from userID BBBB without requiring the parameter PAR=ID=AAAA. It may be used from userID AAAA by specifying the parameter PAR=ID=BBBB

MTS

The MTS command returns control to MTS.

MTS

Program execution may be resumed with $RESTART.

NEXT

NEXT is a synonym for the PRINT NEXT command.   The syntax is

NEXT

See the description of the PRINT command for details.   No operands are allowed.

OPEN

The OPEN command reverses the effect of a previous CLOSE command and allows further responses to a discussion.   The format is

OPEN [discussion-specifier]

where "discussion-specifier" is a discussion number, or one of the operands CURRENT, *, or NEXT.

This command may only be issued by the participant who started the discussion or the conference manager.

PERMIT

This command can be used only by conference managers, and only then after requesting "manager mode" using the command

CONFERENCE conference-name MANAGE

The command has the form

PERMIT how who

where "how" may be one of

MANAGER	to give manager access
PARTICIPATE	to give participant access
OBSERVER	to give observer access
DEFAULT	to remove previously specified access, leaving the default access
NONE	to give no access

and "who" may be one of

userid	a specified userID
PROJECT=projectid	a specified projectID

ALL	everybody (removing any previously permitted specific access)
OTHERS	anybody not otherwise explicitly mentioned

or a parenthesized list of any of the above.

"userid" and "projectid" may be given in an initial substring form, as for MTS $PERMIT specifications.

A series of "how who" pairs may be given in a single PERMIT command.   For example,

```
PERMIT PARTICIPATE XXXX, OBSERVE YYYY
```

Conference managers can tell how the conference is currently permitted by issuing the command:

DISPLAY CONFERENCE ACCESS

when in manager mode.

PRINT

The PRINT command is used to print the entries in a discussion.   It has the following format:

PRINT [which-discussions] [what-to-print] [where-to-print]

"which-discussions" selects discussions for printing, and "what-to-print" specifies the elements of each that are to be printed.

"which-discussions" may be any of the following:

NEXT	The next discussion from the select list.
CURRENT	The current discussion.
*	The current discussion.
n	Discussion number "n", where "n" is an integer.
n FF	Discussion "n" and following.
n–m	Discussions "n" through "m".
LAST	the last (highest numbered) discussion in the conference or conferences.
LAST n	the last "n" discussions where "n" is an integer.
ALL	All discussions.
CHANGED	All discussions changed since last seen by current participant (this consists of new discussions and

discussions with new responses).

NEW   Discussions which have not yet been seen by current
                                participant.

EXCLUDED   Discussions that have been explicitly excluded with the
                                EXCLUDE command.

CONFERENCE=conference-name
                                All items from the specified conference.

SELECTED   All discussions in the select list.

AUTHOR="string"   All discussions which contain any entries by a person
                                whose name contains the specified string.   Blanks and
                                case are ignored in comparing the names with the
                                string, and the character "?" may be used in the string
                                as a pattern to match zero or more characters.   Note
                                that this is quite expensive, particularly in
                                multi-conference mode.

TITLE="string"   All discussions whose title contains the specified string.
                                The comparison is performed as described for
                                AUTHOR.

KEYWORD="string"   All discussions that have associated keywords or
                                phrases that begin with the specified string.   The
                                comparison is as described for AUTHOR except that the
                                string must match the initial characters of the keyword
                                rather than an arbitrary substring.

EXPIRED   Discussions which have expired.   Only those started by
                                the current participant will be retrieved.

BEFORE time   All discussions that have one or more responses entered
                                before the specified time or date.   More or less any
                                conventional format may be used to specify the time.

AFTER time   All discussions that have one or more responses entered
                                after the specified time.

TIME=time-range   All discussions that contain responses entered during
                                the specified range of times.   This may be given in a
                                variety of forms, including:

                                        time–time
                                        time TO time
                                        time (an interval based on the
                                        precision specified, e.g., Feb 24 means anytime
                                        during Feb 24)

DATE=time-range   a synonym for TIME=...

If none of these is specified, the default is CURRENT.

"what-to-print" may be one of the following:

NEW	All new entries (not yet seen by current participant)
/n	Response "n" (where "n" is an integer).
/n–m	Responses "n" to "m".
/n–LAST	Response "n" and following.
/n–END	Response "n" and following.
/n FF	Response "n" and following.
LAST	The last response.
LAST n	The last "n" responses.
INTRODUCTION	The introductory entry.
FIRST	The introductory entry.
FIRST n	The first "n" entries.
TITLE	The title.
KEYWORDS	The keywords for the discussion.
ALL	All entries.
AUTHOR="string"	All responses by a person whose name contains the specified string. The comparison is performed as described above.
EXPIRE	The expiration time.
BEFORE time	All responses entered before the specified time/date.
AFTER time	All responses entered after the specified time/date.
TIME=time-range	All responses entered during the specified period.
DATE=time-range	The same as TIME=...
HEADERS	The headers for the discussion and its responses.

If none of these are specified, the default is determined from the "which discussions" expression.

"where-to-print" may be one of the following:

> OUTPUT=FDname

or

> ON FDname

to allow redirecting the output to a file, *PRINT*, etc.

The commands do not do special formatting for the printer at present, except that:

(1) If entire discussions are being printed (PRINT discussions ALL), then each discussion will start a new page.

(2) If discussions from more than one conference are printed with a single PRINT command, then each conference will start a new page (e.g., PRINT ALL TITLES will print the titles for each conference on a new page).

(3) The output operand may appear either before or after other command operands.

PURGE

The PURGE command is used to completely remove various items from the conference file. It can be used only by the conference manager and only in "manager mode."

There are three forms of the PURGE command:

> PURGE CONFERENCE
> PURGE DISCUSSION [discussion-specifier]
> PURGE EXPIRED

When discussion entries are edited or deleted, the text of the entries is normally left in the conference file to provide an "audit trail" of conference discussions. This "junk" can be periodically deleted by issuing the first format indicated above, i.e., PURGE CONFERENCE.

The second form is used to remove (irreversibly) a complete discussion. In this form, "discussion-specifier" is a discussion number or one of the operands CURRENT, *, or NEXT.

Expired discussions are normally left in the conference file, but will not be displayed except for the conference manager or the author. The conference manager can purge all expired discussions with the third form, PURGE EXPIRED.

QUIT

The QUIT command is used if you no longer wish to be a member of a conference. The format is

> QUIT conference-name

REPLY

REPLY is a synonym for RESPOND.   The syntax is

        REPLY [discussion-specifier] [INPUT=FDname] [{EDIT | VISUAL}]
              [CONTINUE]

RESPOND

The RESPOND command is used to enter a response to a previous discussion.   It has the
following format:

        RESPOND [discussion-specifier] [INPUT=FDname] [{EDIT | VISUAL}]
                [FORMAT={ON | OFF}] [{AUTHOR | PSEUDONYM}="string"]
                [CONTINUE]

where "discussion-specifier" is a discussion number, or one of the operands CURRENT, *, or
NEXT.   If it is not specified, the current discussion will be assumed.

If INPUT=FDname is specified, Forum will read the contents of the file specified by "FDname" to
obtain the text for the response.

If EDIT is specified, Forum will enter edit mode and any edit commands can be used to compose
the response.

If VISUAL is specified, Forum will enter the editor in VISUAL mode for the composition of the
response.

If none of INPUT, EDIT, or VISUAL appears, Forum will prompt for the text of the response to
be typed at the terminal.

If FORMAT=OFF is specified, Forum will not reformat the response.   This is useful when
entering text that has been previously formatted by another message or conference.

The AUTHOR or PSEUDONYM option may be given to change the author's name for the
response.

CONTINUE is used if the workspace contains an incomplete discussion or response entry whose
composition is to be continued to form the response.   If the workspace is not empty, and
CONTINUE is not specified, Forum will prompt for whether to clear the workspace or continue
it.

RETRIEVE

RETRIEVE is a synonym for SELECT.   The syntax is

        RETRIEVE which-discussions

RETURN

RETURN is a synonym for MTS.   The syntax is

        RETURN

SELECT

> The SELECT command builds a list of discussions as specified by its parameters.
>
> The selected discussions form the "select list".   The operand NEXT used with the PRINT, RESPOND, etc., command or the NEXT command removes the first element of this list.
>
> The operand SELECTed for the PRINT command refers to all elements of the list.
>
> The command has the form:
>
>> SELECT which-discussions
>
> where "which-discussions" is one of the following:

CURRENT	The current discussion.
*	The current discussion.
n	Discussion number "n", where "n" is an integer.
n FF	Discussion "n" and following.
n−m	Discussions "n" through "m".
LAST	the last (highest numbered) discussion in the conference or conferences.
LAST n	the last "n" discussions, where "n" is an integer.
ALL	All discussions.
CHANGED	All discussions changed since last seen by current participant (this consists of new discussions and discussions with new responses).
NEW	Discussions which have not yet been seen by current participant.
EXCLUDED	Discussions that have been explicitly excluded with the EXCLUDE command.
CONFERENCE=conference-name	
	All items from the specified conference.
AUTHOR="string"	All discussions which contain any entries by a person whose name contains the specified string. Blanks and case are ignored in comparing the names with the string, and the character "?" may be used in the string as a pattern to match zero or more characters. Note that this is quite expensive, particularly in multi-conference mode.

TITLE="string"   All discussions whose title contains the specified string. The comparison is performed as described for AUTHOR.

KEYWORD="string"   All discussions that have associated keywords or phrases that begin with the specified string.   The comparison is as described for AUTHOR except that the string must match the initial characters of the keyword rather than an arbitrary substring.

EXPIRED   Discussions which have expired.   Only those started by the current participant will be retrieved.

BEFORE time   All discussions that have one or more responses entered before the specified time or date.   More-or-less any conventional format may be used to specify the time.

AFTER time   All discussions that have one or more responses entered after the specified time.

TIME=time-range   All discussions that contain responses entered during the specified range of times.   This may be given in a variety of forms, including:

                                    time–time
                                    time TO time
                                    time (an interval based on the precision
                                    specified)

DATE=time-range   a synonym for TIME=...

FROM SELECTED selection   All discussions from the previous selection that satisfy the criteria of "selection".   For example, if the command

                                    SELECT AFTER 4/20/88

                            is given, then the command

                                    SELECT FROM SELECTED AUTHOR="JONES"

                            will build as a list only those discussions after April 20, 1988 for which Jones was the author.

ALSO selection   All discussions from the previous selection plus those that satisfy the criteria of "selection".   For example, if the command

                                    SELECT AFTER 4/20/88

                            is given, then the command

                                    SELECT ALSO AUTHOR="JONES"

will build as a list all discussions after April 20, 1988 and all discussions for which Jones was the author.

SET

The SET command is used to set various options. It has the form:

SET operand=value

where "operand" may be:

EDIT={ON | OFF}
If set ON, then any subsequent DISCUSSION or RESPONSE commands will begin in edit mode (as if the EDIT operand had been given). The default is OFF.

VISUAL={ON | OFF}
If set ON, then any subsequent entries into the editor (from DISCUSS, RESPOND, or EDIT commands) will begin in VISUAL mode, as if the VISUAL operand had been given with the command. The default is OFF.

FSHELP={ON | OFF}
If set ON, the full-screen help facility is enabled and any HELP commands will use this facility.

WIDTH=n   This determines the width at which the text of the items being printed will wrap. "n" must be greater than 20. By default, the text is wrapped at the terminal width.

The preceding operands take effect only for the current Forum session. Note that the SET command may be used in a Forum profile to cause the options to be set for each session.

NAME="text"
The value must be a quoted character string, which redefines the name of the participant.

PHONE="text"
The value must be a quoted string, which redefines the participant's telephone number.

BLURB="text"
The value must be a quoted string, which redefines the "brief description" of the participant.

The above operands have permanent effect, until changed by a subsequent SET command.

STOP

STOP causes the program to stop and unload. If any text remains in the workspace, it will be deleted.

UNDELETE

The UNDELETE command may be used to restore an entry (either the introduction or a response) that was accidently deleted. It is possible to restore a deleted item only for a limited time after the DELETE command has been issued. It cannot be restored once the conference manager has purged the deleted text from the conference file.

The syntax of the command is:

UNDELETE [discussion-specifier]

where "discussion-specifier" may specify a discussion number or a response in the form discussion/response.

This command may only be issued by the author of the specified entry or the conference manager.

UNLOCK

This command may only be used by conference managers and has the form

UNLOCK CONFERENCE

It undoes the effect of a previously given LOCK CONFERENCE command.

$mtscommand

Any command line beginning with "$" is passed to MTS as a command to be executed.

*

This command is a synonym for COMMENT.

? [topic]

Any line beginning with "?" is a request for help with Forum. A parameter may be given to request help on a particular topic.

A QUICK SUMMARY OF FORUM COMMANDS

```
†CHECK ⎡CONFERENCE  ⎤
       ⎣DISCUSSION n⎦


CLEAR

CLOSE [{discussion|*|CURRENT|NEXT}]

COMMENT text


            ⎡ALL                    ⎤
CONFERENCE  ⎢conference-name        ⎥
            ⎣†conference-name MANAGE⎦


CREATE conference-name

DELETE [{discussion|*|CURRENT|NEXT|discussion/response}]

†DESTROY conference-name

DISCUSS [[TITLE=]"title"] [INPUT=FDname] [{EDIT|VISUAL}]
        [CONTINUE] [CONFERENCE=conference-name]
        [KEYWORDS=FDname] [EXPIRE=expiration-time] [FORMAT={ON|OFF}]
        [{AUTHOR|PSEUDONYM}="string"]


        ⎡CONFERENCES [NEW]                   ⎤
        ⎢CONFERENCES [NOT] JOINED            ⎥
        ⎢CONFERENCES name-pattern            ⎥
        ⎢CONFERENCE conference-name          ⎥
        ⎢CONFERENCE [{NAME|BLURB|INTRODUCTION}]⎥
        ⎢†CONFERENCE ACCESS                  ⎥
        ⎢KEYWORDS                            ⎥
        ⎢KEYWORDS="string"                   ⎥   ⎡ON FDname    ⎤
DISPLAY ⎢PARTICIPANTS [{NAME|NEW}]           ⎥   ⎣OUTPUT=FDname⎦
        ⎢PARTICIPANT="string" [CONFERENCES]  ⎥
        ⎢NAME                                ⎥
        ⎢PHONE                               ⎥
        ⎢BLURB                               ⎥
        ⎢set-option                          ⎥
        ⎣STATISTICS                          ⎦


     ⎡discussion          ⎤
     ⎢CURRENT             ⎥
     ⎢*                   ⎥
EDIT ⎢NEXT                ⎥   [VISUAL]
     ⎢discussion/response ⎥
     ⎢discussion KEYWORDS ⎥
     ⎢FORUMPROFILE        ⎥
     ⎣†CONFERENCE KEYWORDS⎦


        ⎡discussion     ⎤
        ⎢CURRENT        ⎥
EXCLUDE ⎢*              ⎥
        ⎢NEXT           ⎥
        ⎣CONFERENCE=name⎦
```

```
EXPLAIN [topic]

HELP [topic]

          ┌                 ┐
          │discussion       │
          │CURRENT          │
INCLUDE   │*                │
          │NEXT             │
          │CONFERENCE=name  │
          └                 ┘

JOIN conference-name [{PARTICIPANT|OBSERVER}]

†LOCK CONFERENCE

MCMD mts-command

          ┌                  ┐  ┌                          ┐
          │discussion        │  │TITLE="string of text"    │
          │CURRENT           │  │EXPIRE="expiration-time"  │
MODIFY    │*                 │  │AUTHOR="string"           │
          │NEXT              │  │[FORMAT={ON|OFF}]         │
          │discussion/response│ │LAST SEEN response-number │
          └                  ┘  └                          ┘

      ┌             ┐
MOVE  │PARTICIPANT  │
      │†CONFERENCE  │
      └             ┘

MTS

NEXT (synonym for PRINT NEXT)

OPEN [{discussion|*|CURRENT|NEXT}]

          ┌            ┐
          │MANAGE      │  ┌                  ┐
          │PARTICIPATE │  │userid            │
†PERMIT   │OBSERVE     │  │PROJECT=projectid │
          │DEFAULT     │  │ALL               │
          │NONE        │  │OTHERS            │
          └            ┘  └                  ┘

       ┌                 ┐  ┌              ┐
       │NEXT             │  │NEW           │
       │CURRENT          │  │/n            │
       │*                │  │/n-m          │
       │n                │  │/n-LAST       │
       │n-m              │  │/n-END        │
       │n FF             │  │/n FF         │
       │LAST             │  │LAST          │
       │LAST n           │  │LAST n        │
       │ALL              │  │INTRODUCTION  │  ┌              ┐
PRINT  │CHANGED          │  │FIRST         │  │ON FDname     │
       │EXCLUDED         │  │FIRST n       │  │OUTPUT=FDname │
       │NEW              │  │TITLE         │  └              ┘
       │SELECTED         │  │KEYWORDS      │
       │AUTHOR="name"    │  │ALL           │
       │TITLE="string"   │  │AUTHOR="name" │
       │CONFERENCE=name  │  │EXPIRY        │
       │EXPIRED          │  │BEFORE time   │
       │BEFORE time      │  │AFTER time    │
       │AFTER  time      │  │TIME=interval │
       │TIME=interval    │  │DATE=interval │
       │DATE=interval    │  │HEADERS       │
       └                 ┘  └              ┘
```

```
        ┌                    ┐
        │CONFERENCE          │
†PURGE  │DISCUSSION discussion│
        │EXPIRED             │
        └                    ┘

QUIT conference-name

REPLY (synonym for RESPOND)

RESPOND [discussion] [INPUT=FDname] [{EDIT|VISUAL}] [FORMAT={ON|OFF}]
        [{AUTHOR|PSEUDONYM}="string"] [CONTINUE]

RETURN

        ┌                           ┐
        │CURRENT                    │
        │*                          │
        │n                          │
        │n-m                        │
        │n FF                       │
        │LAST                       │
        │LAST n                     │
        │ALL                        │
SELECT  │CHANGED                    │
        │EXCLUDED                   │
        │NEW                        │
        │AUTHOR="name"              │
        │TITLE="string"             │
        │CONFERENCE=name            │
        │EXPIRED                    │
        │BEFORE time                │
        │AFTER time                 │
        │TIME=interval              │
        │DATE=interval              │
        │FROM SELECTED selection    │
        │ALSO selection             │
        └                           ┘

        ┌                            ┐
        │NAME="text"                 │
        │PHONE="text"                │
        │BLURB="text"                │
        │EDIT={ON|OFF}               │
        │VISUAL={ON|OFF}             │
SET     │FSHELP={ON|OFF}             │
        │WIDTH=n                     │
        │†CONFERENCE INTRODUCTION=n  │
        │†CONFERENCE NAME=new-name   │
        │†CONFERENCE BLURB="new blurb"│
        │†CONFERENCE EXPIRE=interval │
        └                            ┘

STOP

UNDELETE [{discussion|*|CURRENT|NEXT}]

†UNLOCK CONFERENCE

$mts-command

* comment text

? [topic]


† Note: May only be used by a conference manager.
```

INTRODUCTION TO CONFER II

Confer II™ is a program for conducting computer conferences. Computer conferencing provides a facility for online discussion of topics of general interest. People can access a conference using terminals from various locations, and can discuss a topic without having to meet physically or participate at the same time. The Confer program was written by Robert Parnes and is a proprietary program of Advertel Communication Systems, Inc.

Confer manages *items* (or discussions). One person starts an item by entering the item text and giving it a title, called a header. Other people can then make their own *responses* to the initial entry. The item text and each response are signed with the name of the person making them. People can make as many responses to an item as they like.

To participate in a conference you must first register in it. You can register in a conference as a permanent *participant* or *auditor*, or as a temporary *observer*. A participant may contribute to items, while an auditor or observer just views them. You need register only once per conference. Once you have joined a conference, Confer keeps track of what you have seen if you are a participant or auditor. Each time you enter the conference, Confer will tell you what is new since the last time you looked. Of course you can always go back and look at previous entries if you want to.

GETTING STARTED

To get started in Confer, enter the following command at your terminal:

> $SOURCE conference-name

The very first time you enter a conference, Confer will ask for some information about you (your name, phone number, and a short introduction). Confer will then create two files under your userID, a conference participation file named 'xxxx.CONFER' and a message file named MF which is used by all the conferences that you belong to. These files are used to keep track of your participation in Confer, so you should *not* change them or destroy them unless you want to permanently quit using Confer.

```
#source wabc:project-x
#$Run CNFR:Confer t=5 par=WABC:PROJECT-X
#Execution begins

 Confer II (08/89) - designed by Robert Parnes
 Copyright & Trademark: Advertel Communication Systems

 CONFERence for WABC:PROJECT-X
  Marlou Smith, organizer


Welcome to WABC:PROJECT-X
You are about to be taken through a short registration process.

Please select the appropriate option from the following and enter
the letter preceding it when prompted.
  P -  I want to join the conference as a PARTICIPANT.
  O -  I want to OBSERVE what's happening without becoming a
       participant.
  C -  I am already a participant but I want to CONVERT my Confer
```

```
            files for this conference over to this signon ID.
      A -   I want to ASSUME the identity of another participant in
            this conference who has given me permission to do so.
      AU-   I want to AUDIT what's happening (become a permanent observer).
      ? -   I'm not sure yet, and would like a little more explanation.
      Q -   I don't like any of the above and want to QUIT now.
      S -   I don't like any of the above and prefer to STOP now and
            return to MTS command mode.

   Remember to press the <RETURN> key to send the entry.

   OPTION?  p
   PLEASE ENTER YOUR FIRST NAME(S) ONLY:  Jack
   NOW ENTER YOUR LAST NAME:  Black
   ENTER YOUR PHONE NUMBER. (E.G. 313-665-2612)  313-764-9596
   OK? TO USE "MF" FOR YOUR MESSAGEFILE:
   Enter YES if you're not sure: yes

   Confirm the following.
   NAME:  Jack Black
   PHONE:  313-764-9596
   MESSAGEFILE:  MF
   IS THIS INFORMATION CORRECT?  yes
   One moment please...

    Remember to use <BREAK> to interrupt output and to
       say HELP at DO NEXT? to get help with Confer.


         2 participants.
   WOULD YOU LIKE TO SEE THE PARTICIPANT LIST?  yes


    Participants and their brief introductions

   John Brown                   313-764-9595    WDEF:MF
    Systesm Research Staff (project liaison)
   - - - - -
   Marlou Smith                 313-764-9595    WABC:MF
     Systems Research Staff (project director)
   - - - - -


    PLEASE ENTER A BRIEF INTRODUCTION
   -Systems Research Staff
   -{return}
    EDIT, VIEW, CANCEL, MORE, OR DONE:  done
    Use CHANGE INTRO at DO NEXT? to change your introduction.

    New items:   1
    DO NEXT?
```

The prompt "DO NEXT?" is printed each time Confer is requesting a new command.   The commands that you may give are discussed throughout this section.

Joining Other Conferences

There are other conferences that you can join if you are interested.   To find out what other conferences are available, enter the MTS command

$COPY CNFR:CONFERENCES

You will get a listing of the names and descriptions of the conferences that you can join.   For example,

```
#$copy cnfr:conferences
>This file contains a list with a brief description of many of
>the computer conferences using CONFER that are open to general
>participation.  To join one of them enter the MTS command
>$SOURCE followed by the name of the conference.  E.g.,
>   $SOURCE CRLT:ORGANIZER
>There are many other computer conferences using CONFER that
>are restricted in their membership.
>
>For more information call Bob Parnes, (313) 665-2612
>
>
>CRLT:ORGANIZER  -  Bob Parnes, organizer
> To share ideas about the organization of conferences and
> the design of CONFER.  To answer questions from organizers
> abut their roles in CONFER use.
>
>USER:Forum  -  Al Anderson and Laurie Burns, organizers
> For discussing matters of interest to the UM-MTS user
> community,including the ins and outs of MTS and its
> resident applications; Computing Center operations;
> UMnet; Merit; and computers in general. A good place to
> get answers to your MTS questions.
>
>USER:OpenForum  -  John Dorsey, organizer
> A general-purpose conference in which the participants kick
> around broad-ranging topics such as music, books, war,
> religion, death; even computers if it's interesting.
> Think of it as a cocktail party, only with more intelligent
> discourse and no drunks.
>
>CRLT:MICROS  -  Karl Zinn and Gordon Leacock, organizers
> For a statewide discussion of the role of microprocessor
> based computer systems in education.  To link up various
> people interested in the future of microcomputers.
>
>  ...
>
```

The first line of each entry gives the name of the conference and the conference organizers.   The remaining lines give a short summary of the purpose of the conference.

When a conference is initially organized, the conference organizer decides who is allowed to participate and who is allowed to observe.   Some conferences are private conferences, hence you will be neither allowed to participate in them nor to observe them.   The file CNFR:CONFERENCES does not list the names of those conferences for you.

Looking at New Items and Responses

Each time you enter a conference, Confer will inform you of all new items, responses to existing items, and Confer messages with a message of the form

```
New responses on items:
    1   2    4

New items:   5-6
New messages:   3
```

You can look at these by entering the command

        NEW

For example,

```
#source wabc:project-x
#$Run CNFR:Confer t=5 par=WABC:PROJECT-X
#Execution begins

 Confer II (08/89) - designed by Robert Parnes
 Copyright & Trademark: Advertel Communication Systems

 CONFERence for WABC:PROJECT-X
  Marlou Smith, organizer


 New item:   1
 No new responses
 No new messages
 DO NEXT?  new

 Item 1   14:38 Nov10/90    4 lines    1 response
 Marlou Smith
 A new beginning!

 This notice is to introduce you to our new Project-X
 conference. Please join our conference and respond
 to this item to indicate that you have successfully
 joined.  Thank you.

    1 response
 Nov10/90 14:42
 1:1) John Brown: Thank you for the invitation. I am
  now a member.

 RESPOND, FORGET, OR PASS:  pass
```

In the above example, the command NEW was given to display item 1 (a new item). The first line gives the number of the item, the date the item was entered, the length of the item, and the number of responses to date. The item number is assigned by Confer and provides a quick and easy way of referring to the discussion. The next lines give the author of the item and the title of the item. Following this is the text of the item.

The responses follow the text of the item. The first line of each response gives the date the response was entered. The second line has a number consisting of the item number and the response number followed by the name of the responder. The response itself follows on this and subsequent lines.

After all responses have been displayed, you are prompted with the line

        RESPOND, FORGET, OR PASS:

which offers you the option of responding to the item, forgetting the item, or passing on the item. Entering PASS means that you do not want to make a response at this time but want to be informed about responses by other participants that occur in the future. Entering a null line (pressing the Return key on your terminal) is the same as passing. Entering FORGET means that you do not want to make a response and that you do not want to be informed of future responses. Entering RESPOND

means that you want to respond; this is discussed later in this section.

Once you have completed your response or have decided not to respond, Confer will then print the next new entry.   If you have already seen the text of an item, only the new responses are displayed.

This process will continue until all new items have been displayed.   You may stop this process at any time by entering STOP in response to the prompting message.   Everything that you have not seen will remain "new" for the next time you sign on.

The NEW command displays the new entries in sequential order, which means that items with new responses will be displayed before new items are displayed.

Switching Conferences

You may switch from one conference to another without returning to MTS by entering the command

    JOIN conference-name

If you are not a member of the new conference, Confer will automatically begin the conference registration process as described above.   When switching conferences, Confer will inform you of any new items, responses, and Confer messages as well as any new participants that have joined since you last entered that conference.   For example,

```
#source wabc:project-x
#$Run CNFR:Confer t=5 par=WABC:PROJECT-X
#Execution begins

 Confer II (08/89) - designed by Robert Parnes
 Copyright & Trademark: Advertel Communication Systems

 CONFERence for WABC:PROJECT-X
  Marlou Smith, organizer


 DO NEXT?  new

  ...

 DO NEXT?  join crlt:micros
 You are leaving WABC:PROJECT-X

 CONFERence for CRLT:Micros  (volume VII)
 organizers: Karl Zinn, 313/763-4410
             Gordon Leacock, 313/763-6184

  2 new participants

 Sue Blue                    313-764-9598   WGHI:MF
  University Micro User
 - - - - -
 Dean Green                  313-764-9599   WJKL:MF
  University Minicomputer User
 - - - - -

 New responses on items:
   21   22   23   24
```

```
     New items:   25-31
     No new messages
     DO NEXT?
```

Getting Help

Confer has an extensive Help facility.   Any time you are unsure of what to do, you can enter HELP or a question mark

     ?

and Confer will give you assistance.   If you want help with a particular command, enter

     command ?

where "command" is the particular command you want help with.

DISPLAYING ITEMS

The previous section showed you how to use the NEW command to look at new items, responses, and messages in a conference.   Often you may join a conference that has been in progress for some time and contains lots of material.

You can use the ITEM command to see all or part of any item or set of items.   The ITEM command is given in the form

     ITEM [item-list] [modifiers]

The parameter "item-list" selects the items to print.   Some of the choices include:

n	item "n"
n1,n2,n3,...	items "n1", "n2", and "n3" (a list of items)
n1–n2	items "n1" through "n2" (a range of items)
n:m	item "n" with response "m"
n:m1,m2,m3,...	item "n" with responses "m1", "m2", and "m3" (a list of responses)
n:m1–m2	item "n" with responses "m1" through "m2" of item "n" (a range of responses)
NEXT	the next item
PREVIOUS	the previous item
LAST	the last (highest numbered) item
ALL	all items
NEW	all new items (not yet seen)

If the item list is omitted, you will see only new items.

Items may be specified either singly, in a list, as a range, or any combination thereof.   Elements in the list are separated by commas (intervening spaces are allowed), e.g.,

```
     ITEM 1,3,5-6,10:2-6
```

Note that you may only specify a specific response for an item (using one of the "n:m" formats) on the

last entry of an item-list. This restriction is needed to avoid ambiguous item-lists. If you do specify a response, Confer will also print the text of the item before it prints the response.

Several modifiers may be appended to the ITEM command to control the parts of the item that are to be printed. Some of the choices are as follows:

BROWSE	print only the first two lines of each response
FORGET	stop showing this item and its responses
HEADER	print the 1-line title instead of 3-line descriptor
LIFO	print the responses in reverse chronological order
NODescriptor	do not print the 3-line descriptor
NOResponse	do not print the responses
NOText	do not print the text of the item
PASS	automatically pass each item
REVERSE	print the items in reverse order (highest numbered item first)
DUMMY	discard the output of the item and mark it as "seen"

Some examples of the ITEM command are as follows:

ITEM 4	print the text and all responses for item 4
ITEM 3-6	print the text and all responses for item 3 through 6
ITEM 6:15	print the text and the 15th response for item 6
ITEM 5:4–5	print the text and the 4th and 5th responses for item 5
ITEM ALL	print all items and all responses
ITEM ALL BROWSE	print the text and only the first two lines of each response for all items
ITEM NEW PASS	pass on each new item (do not pause to respond)

If you wish to interrupt the printing of a very long item, issue an attention interrupt. You will be prompted with the message

```
MORE TEXT?
```

If your response is NO, the remainder of the item text will be skipped and the responses will then be printed. If you respond YES or press the Return key, the printing of the item text will resume. Either way, you are still given an opportunity to respond or to pass on the item.

When you first join a conference, you might want to print all the descriptors to see which items interest you. Do this by entering the command

DESCRIPTOR NEW

which will print out only the 3-line descriptors, or by entering the command

DESCRIPTOR NEW HEADER

which will print out only a 1-line title for each item.

You can print only the responses to existing items (not new items) by entering the command

RESPONSES NEW

The DESCRIPTOR and RESPONSE commands take many of the same parameters as the ITEM command, e.g., an item number, an item number list or range, ALL, NEW, NEXT, PREVIOUS, or LAST.

You might also want to get a printed copy of all or some of the items. If you do want a printed copy, you can have Confer direct output to a file or to *PRINT*. To do this just append the parameter

   FILE=filename

or

   PRINT

For example:

   ITEM 115 *PRINT*   Copy all of item 115 to *PRINT*
   DESCRIPTOR ALL *FILE*=−TITLES
                             Copy all of the item descriptors into the file −TITLES
   ITEM ALL *FILE*=−CONFER   Copy all items and responses into the file −CONFER (use this
                             particular example with caution, since there may be a very
                             large amount of information involved)
   RESPONSES NEW *FILE*=−RES
                             Copy all new responses to old items into the file −RES (new
                             items and their responses are not copied)

If more than one item is printed, Confer will start printing each item on a new page. Also, you will not be prompted for a response if the output is being directed to a file or *PRINT*.

If you want to remove items quickly from the "new-item" list, you can enter the command

   ITEM NEW *DUMMY*

This is a good method to enter into the mainstream of an existing conference without viewing its past history. As participants respond to active items, the responses will appear on the new response list and you can begin participating in the current discussions immediately. You can always go back and read individual items as time allows.

RESPONDING TO ITEMS

The previous two sections illustrated how to find your way around a conference and print things out. This section describes how to participate more fully.

There are two methods that you may use to enter a response to an item. If you are displaying the text of an item or previous responses, you will be prompted with the message

        RESPOND, FORGET, OR PASS:

If you reply with RESPOND, you will be prompted to enter the text of your response. Note that Confer will format your response, so you need not worry about entering very long lines. End your response by entering a null line. At this point, Confer will prompt with a question of the form

```
EDIT, VIEW, CANCEL, MORE, OR DONE:
```

There are several possible responses:

DONE	Enter the response (the default)
EDIT	Edit the response by invoking the MTS File Editor
VIEW	Display the current text of the response
MORE	Add more text to the response
CANCEL	Cancel the response and discard the text
?	Ask for assistance

You also may end your response with an end-of-file, in which case Confer will automatically assume you are DONE.   When you are done, Confer will give a reply of the form

```
This is response 1:2
```

Continuing our example:

```
DO NEXT?  item new

Item 1    14:38 Nov10/90    4 lines    1 response
Marlou Smith
A new beginning!

This notice is to introduce you to our new Project-X
conference. Please join our conference and respond
to this item to indicate that you have successfully
joined.  Thank you.

   1 response
Nov10/90 14:42
1:1) John Brown: Thank you for the invitation. I am
 now a member.

RESPOND, FORGET, OR PASS:  respond

GIVE YOUR RESPONSE
> Yes! I too am now a member.
> {return}
 EDIT, VIEW, CANCEL, MORE, OR DONE:  done
 This is response 1:2

 DO NEXT?
```

Alternatively, you can enter a response to an item with the command

ITEM n RESPOND

where "n" is the number of the item you want to respond to.   Confer then will prompt for the text of your response in the same manner as above.

You can also compose your response in a file and then enter it as an item.   In this case, enter

LOAD filename
ITEM n RESPOND

where "filename" is the name of the file containing your response. In this case, Confer will directly enter your response without prompting you for editing, adding more text, etc.

ENTERING ITEMS

Entering items is as simple as replying to them. Give the command

ENTER

Confer will respond with a series of questions, the first being

```
ENTER NUMBER OF ITEM THAT MOST INSPIRED THIS ITEM:
```

You may enter the number of a related item or just press the Return key if there is no related item. Confer will then prompt for the text of your item.

```
ENTER YOUR TEXT
```

Things work much as they do for responses. Again, you can edit your item, add more text, etc. After you finally have completed your text and have responded with DONE, Confer replies with

```
ENTER THE HEADER FOR YOUR ITEM ON ONE LINE
```

Enter a descriptive title for your discussion. Next, you will be asked what kind of responses to allow to your item:

```
OK TO USE DISCUSSION RESPONSES?
```

Normally, your answer is YES. If you respond NO, you will be given a choice of allowing other types of responses such as voting responses, numeric responses, etc. These are described more fully in the Confer reference documentation. Finally, you will be asked if it is all right to enter your item into the conference.

The discussion that comprises our previous example could have been entered in the following manner:

```
 DO NEXT?  enter
 ENTER NUMBER OF ITEM THAT MOST INSPIRED THIS ITEM: {return}
  ENTER YOUR TEXT
> This notice is to introduce you to our new Project-X
> conference. Please join our conference and respond
> to this item to indicate that you have successfully
> joined.  Thank you.
> {return}
 EDIT, VIEW, CANCEL, MORE, OR DONE:  done
  ENTER THE HEADER FOR YOUR ITEM ON ONE LINE
  A new beginning!
 OK TO USE DISCUSSION RESPONSES?  ok
  Your item preparation is now complete.
 OK TO ENTER THIS INTO WABC:Project-X?  ok
  Your entry is now ITEM 1

 DO NEXT?
```

You may also compose your item in a file if you like.   If you have composed it in a file, the item would be entered with the following commands:

        LOAD filename
        ENTER

You will be prompted for the other information as shown previously.

Changing Items and Responses

It is possible for the author of an item or response to edit the text of an entry with the CHANGE command.   This should only be used for such things as changing typographical errors or fixing up the format of an item.   Major changes to an item may result in a change to the context of a discussion, which can be very confusing to the other participants who might not reread the changed item.

If you want to make changes to the text of an item, use the command

        CHANGE TEXT n

where "n" is the number of the item.   If you want to make changes to a response, use the command

        CHANGE RESPONSE n:m

where "n" is the item number and "m" is the response number.   You will be prompted with the following message:

         REPLACE, EDIT, VIEW, RETIRE, DELETE, OR IGNORE:

There are several possible responses:

        REPLACE   Replace the entire text of the entry
        EDIT   Edit the entry by invoking the MTS File Editor
        VIEW   Display the current text of the entry
        RETIRE   Retire the entry (can be recovered later)
        DELETE   Delete the entry (cannot be recovered later)
        IGNORE   Do not change the entry
        ?   Ask for assistance

If you respond with EDIT, the MTS File Editor will be invoked and a colon ":" prompt will appear.   You may use any edit command to edit the text of the item or response.

Each participant can edit only his or her own items or responses.   The conference organizer may edit all items or responses.

The author of an item can change the header of the item by using the command

        CHANGE HEADER n

Freezing Items

The author of an item has the ability to freeze (terminate) responses to that item.   This might be done, for example, if the author were conducting an informal poll and had collected sufficient responses.   The command is

        CHANGE FREEZE n

The author will be prompted with the message

        FREEZE DATE?

The possible responses are:

mm-dd-yy	Freeze on a specific date
+n	Freeze "n" days from today
{return}	Freeze immediately
CANCEL	Cancel the freeze date (re-open the item)

Although the item is frozen as far as entering responses, participants may still view the text and previous responses.

Retiring Items

The author of an item has the ability to retire an item so that the item and its responses are not normally accessible for viewing.   The command is

        CHANGE RETIRE n

The item may be unretired by entering the command

        CHANGE RESTORE n

A retired item still may be viewed by all participants by entering the command

        ITEM n NOFORGET

Only the conference organizer can delete an item.

DISPLAYING AND CHANGING PARTICIPANT INFORMATION

You can use the PARTICIPANT command to find out information about other participants in the conference.   If the command is given as just

        PARTICIPANT

a list of all the participants will be printed.   You will then be prompted for the participant of your choice.   If you respond with a RETURN, Confer will return to command mode.   If you respond with a name, Confer will print out information about the participant and the time when that participant last entered the conference.   Confer will then offer you the opportunity to inquire about that participant's first and most recent activity on a particular item.   You may enter an item number or a RETURN to

pass on this request.   For example,

```
DO NEXT?  participant
        3 participants.
 Jack Black                John Brown                Marlou Smith

 WHICH PARTICIPANT?  jack black

 Jack Black               313-763-9596  WXYZ:MF
 Last conference signon was: 16:27:45 Nov17/90   Off at: 16:43:46 Nov17/90
 Systems Research Staff
CHECK ON WHICH ITEM?  1
 Item displayed Nov10/90 14:31:00
 Last displayed Nov17/90 16:41:00
CHECK ON WHICH ITEM?  {return}

 DO NEXT?
```

You can display the information about all participants by entering

> PARTICIPANT ALL

You can display the information about a particular participant by entering

> PARTICIPANT name

You can change any of your personal information with the command

> CHANGE {INTRODUCTION | NAME | PHONE}

Confer will respond with

```
REPLACE OR EDIT?
```

After responding, you may then enter replacement information directly or use the MTS File Editor to change your current information.

SENDING BULLETINS

Confer allows participants in a conference to send bulletins to the other members of the conference. A bulletin is a public message that is presented to all the conference members.

A bulletin consists of up to 1500 characters of text, an effective starting date, an expiration date, and an author.

Each time you join a conference, Confer will check the list of bulletins it has stored, looking for any new bulletins that have become effective. It will present all newly effective bulletins to you automatically. Thereafter, while you are in the conference it will check for any effective bulletins which might have been entered since you joined and present them to you just before the DO NEXT? prompt.

To send a bulletin to the other participants, enter the command

> BULLETIN

Confer will prompt you for the text of the bulletin and then for the effective starting date and the expiration date.   For example,

```
 DO NEXT?  bulletin
 YOU MAY POST A SHORT BULLETIN
- There will be a short meeting tomorrow for all members of Project-X
- in West Conference room at 2 pm.
- {return}
 EDIT, VIEW, CANCEL, MORE, OR DONE: {return}

 EFFECTIVE DATE: {return}

 EXPIRATION DATE: {return}

 Bulletin has been posted.

 Marlou Smith                 Effective: Nov19/90   Expires: Nov26/90

 There will be a short meeting tomorrow for all members of Project-X
 in West Conference room at 2 pm.

 DO NEXT?
```

Confer prompts you for each line of text by printing the "−" prompt.   When you are done with the text of your bulletin, enter a null line by pressing Return.   As with entering items, you will be prompted with the line

```
 EDIT, VIEW, CANCEL, MORE, OR DONE:
```

at which point you may edit your bulletin, view the current text, etc.   Entering DONE or pressing the Return key will post your bulletin.

When you post a bulletin, Confer will ask you for the effective date on or after which it should display the bulletin and the expiration date on which it should destroy the bulletin.   The expiration date must be later than the effective date.   No bulletin can remain in effect for longer than 60 days. By pressing the Return key for each of these prompts, your bulletin will take effect immediately and terminate after 7 days.   You may enter a question mark "?" for further information on acceptable ways of specifying the date.

You may use the command

CHANGE BULLETIN

to subsequently change or delete your bulletins.

Two commands allow you to review bulletins in a conference.   The command

BULLETIN ALL

prints out all bulletins that have not reached their expiration dates.   The command

BULLETIN REVERSE

is similar except that the bulletins are printed in reverse (last-in first-out) order.

SENDING PRIVATE MESSAGES

Confer allows participants in a conference to send private messages to each other.   The message facility works similarly to the MTS Message System, e.g., you can send messages, reply to messages, archive messages, etc.

To send a message to another participant, enter the command

TRANSMIT

Confer will prompt you first for the text of the message and then for the recipient(s).   For example,

```
 DO NEXT?  transmit
 ENTER YOUR MESSAGE
> I am sending you a test message. Do you read me?
> {return}
 EDIT, VIEW, CANCEL, MORE, OR DONE: {return}
 ENTER RECIPIENT:  john brown
 OK TO SEND TO JOHN BROWN?  ok
 Message sent at 13:11 Nov18/90
 ENTER ANOTHER RECIPIENT (or press RETURN):
 {return}
 DO NEXT?
```

You are automatically informed of new messages to you either when you enter a conference or while you are in a conference.   A message of the form

```
New message:   2
```

is printed where the number is the message number (the message number is useful if you later want to delete or reply to a particular message).

You may print the text of all new messages by giving either the command

MESSAGE

or the command

NEW

The NEW command also prints all new responses and items.   After each message is printed, you will be prompted with the following message:

```
  REPLY, DELETE, OR IGNORE:
```

Some of the possible responses are:

REPLY	Reply to the message
DELETE	Delete the message
ARCHIVE	Archive the message
IGNORE	Take no action on this message and print the next message
STOP	Return to Confer command mode
?	Ask for assistance

If you respond with REPLY, you will be prompted for the text of your reply.   If you respond with DELETE, the message will be deleted and you will no longer be able to access it.   If you respond with ARCHIVE, the message will be archived (you will be prompted for the name of the archive file and a header for the message).   The following example illustrates how a message might be received and replied to.

```
    New message:    2

    DO NEXT?   message

 -  Message 2          3 lines         13:12:41 Nov18/90
    MESSAGE from: Jack Black                   13:11 Nov18/90 WXYZ:MF
    I am sending you a test message. Do you read me?
        Jack

    REPLY, DELETE, OR IGNORE:   reply
    ENTER YOUR REPLY
  > I read you loud and clear!
  >    John
  > {return}
    EDIT, VIEW, CANCEL, MORE, OR DONE:   done
    OK TO SEND TO JACK BLACK?   ok
    Message sent at 13:12 Nov18/90
    ENTER ANOTHER RECIPIENT (or press RETURN):
    {return}
    Continuing with message 2 from Jack Black
    DELETE OR SAVE:   delete
    Deleted
```

You may print a particular message at any time by giving the command

        MESSAGE n

where "n" is the number of the message.   You will be prompted for a reply and for saving or deleting the message as above.

RESIGNING FROM A CONFERENCE

You can resign from a conference by entering the command

        CHANGE RESIGN

If you do so, Confer will give you the warning

```
        CAUTION! This will permanently remove you from the conference
        DO YOU REALLY WISH TO RESIGN?
```

If you respond YES, Confer removes you and destroys your participation file.   This does not affect your participation in other conferences.

LEAVING CONFER

You can leave the Confer session by entering the command

STOP

which terminates the session and returns you to MTS, or the command

QUIT

which terminates the session and signs you off of MTS.

THE CONFERENCE ORGANIZER

Each conference has a conference organizer, usually the person who has started the conference. The conference organizer is responsible for overseeing the conference and for keeping discussions on track.

The conference organizer has the same abilities as the authors of items, responses, and bulletins, and can thus edit or delete items (for example, obscene remarks or personal attacks) or change the headers of items.

If you are a new organizer or would like to set up a conference, the *Confer II Support Packet*, a step-by-step guide to leading you through the process, is available from the MTS administrator in your department or unit or by sending electronic mail to confer_support@um.cc.umich.edu.

ADDITIONAL DOCUMENTATION

There is much more documentation available about the use of Confer. Most of this material is online in files under the userID CNFR. Some of the more pertinent files are as follows:

CNFR:QUICK.CARD	*The Quick Reference Card for Confer II* (2 pages)
CNFR:BEGIN.GUIDE	*The Beginner's Guide to Confer II* (approximately 40 pages)
CNFR:ORGAN.GUIDE	*The Organizer's Guide to Confer II* (approximately 75 pages)
CNFR:REF.GUIDE	*The Reference Guide to Confer II* (approximately 100 pages)
CNFR:INTRO	*An Intro Guide to Using Confer II* (approximately 15 pages)
CNFR:COMMANDS.W	A summary of Confer commands (2 pages)
CNFR:MULTI.W	A guide for using Confer with multiple userIDs (3 pages)
CNFR:CHECK.W	A guide for the program CNFR:CHECK which monitors conference activity (3 pages)

All of these documents may be printed on the Xerox 9700 page printer by giving the command

        $COPY filename *PRINT*

A COMPARISON OF FORUM AND CONFER II SYNTAX

The table below compares the command syntaxes of Forum and Confer II.   It is intended to assist users who are familiar with one conferencing system to easily use the other conferencing system.

Forum Command	Confer II Command

Entering the Conferencing System

| $RUN *FORUM | $SOURCE conference-name |
| CONFERENCE conference-name | |

Displaying the Available Conferences

| DISPLAY CONFERENCES | $COPY CNFR:CONFERENCES |

Switching Conferences

| CONFERENCE conference-name | JOIN conference-name |
| CONFERENCE ALL | |

Initially Registering in a Conference

| JOIN conference-name | Automatic prompting upon initial entry |

Resigning From a Conference

| QUIT conference-name | CHANGE RESIGN |

Viewing Items (Discussions)

• Viewing All Items and Responses

| PRINT ALL | ITEM ALL |

• Viewing One Item and All Its Responses

| PRINT n | ITEM n |

• Viewing One Item and Selected Responses

PRINT n /m	RESPONSES n:m
PRINT n /m1−m2	RESPONSES n:m1−m2
PRINT n /m−END	

• Viewing Several Items and Their Responses

PRINT n1−n2   ITEM n1−n2

• Viewing New Items and New Responses

PRINT CHANGED   NEW

• Viewing Titles Only

PRINT {ALL | NEW} TITLES   DESCRIPTOR {ALL | NEW} HEADER

PRINT n1−n2 TITLES   DESCRIPTOR n1−n2 HEADER

• Making a Hard Copy of an Item

PRINT n OUTPUT=FDname   ITEM n {*PRINT* | *FILE*=filename}

Responding to an Item

Prompt after PRINT command   Prompt at end of item

RESPOND n   ITEM n RESPOND

Entering a New Item

• Direct Text Entry

DISCUSS   ENTER

• Text from a File

DISCUSS INPUT=filename   LOAD filename
                                        ENTER

Editing an Item

• Editing the Text of an Item

EDIT n   CHANGE TEXT n

• Editing the Text of a Response

During initial entry   During initial entry

EDIT n/m   CHANGE RESPONSE n:m

Deleting an Item

 • Deleting an Entire Item

    DELETE n   Only by organizer

 • Deleting a Response

    DELETE n/m   CHANGE RESPONSE n:m

Closing an Item

    CLOSE n   CHANGE RETIRE n

Help Facility

    HELP   or   ?   HELP   or   ?

    HELP command   command ?

Leaving the Conference

    RETURN or STOP   STOP (return to MTS)

                                    QUIT (sign-off MTS)

INTRODUCTION TO INFOX

The Information Technology Division has developed a software program that gives Mac users the best of two worlds—the popular Macintosh interface, and access to some mainframe services available on MTS.   InfoX (pronounced "info-ex") lets you use menus, icons, windows, and buttons to check your electronic mail, participate in Confer II conferences, access the MTS User Directory, and create, edit, and manipulate MTS files.

InfoX adds Macintosh-style word processing features to editing functions on MTS.   You can use the standard Cut, Copy, and Paste commands under the Macintosh Edit menu to move text from any Macintosh file to an MTS message, conference entry or file.   InfoX wraps text automatically in messages and conference entries.

You can use InfoX to edit, copy, destroy, permit read or write, and rename files on MTS.   InfoX also allows you to check your MTS funds and change your password.

InfoX is not a terminal emulation program, and is not intended to replace communications programs such as VersaTerm.   You cannot run programs, enter commands from the MTS "command line" interface (at an MTS "#" prompt), or access hosts other than UM-MTS or UB-MTS.   As explained below, InfoX currently provides only a subset of Confer II commands.

InfoX began life in 1988 as InfoDisk, an ITD project designed to take advantage of the capabilities of MacWorkstation, Apple Computer's then-new toolkit for developing Macintosh user interfaces to mainframe hosts.   InfoDisk continued to evolve, profiting from the input of University users.

In 1989, InfoDisk was redesigned and rewritten to serve as part of the InfoNet system for the EDUCOM'89 conference, held in Ann Arbor.   The EDUCOM version included electronic mail, limited conferencing and user directory services, and a listing of EDUCOM events.

Although the EDUCOM version served conference attendees well, MTS users in the University community required greater capabilities.   The InfoX development team has worked hard to incorporate user feedback in InfoX's continuing development.   Since its EDUCOM release, InfoX has been improved and expanded to include more complete services for e-mail, conferencing, the user directory, and the MTS File Editor.   It has also undergone extensive testing at the hands of a variety of users across campus.   Some of its new features are described below.

You can use InfoX with electronic mail to:

(1)   send and retrieve messages

(2)   view history messages

(3)   reply to, forward, and delete messages

(4)   modify and archive messages

(5)   check a message's status

When you display new messages in InfoX, you will see the sender, subject, date, and time of each message simultaneously.   This means that you can read messages in any order you want, not just the

order in which they were received.   This makes reading electronic mail much easier and faster.

Although the MTS User Directory is a powerful database with a wide range of features, it can be difficult to use.   InfoX simplifies many user directory functions, making it easier to search the database, create group and individual entries, and modify existing entries.

You can use InfoX to join a conference, enter or respond to an item, read a particular item or response, forget an item, or mark all items as seen.   Unseen conference items are displayed in much the same way messages are displayed, so you can select an item by title, not just by item number.

Some Confer II functions are not available through InfoX.   You cannot use the program to enter organizer-defined commands, post or read bulletins, hold meetings, use polled or numeric responses, enter pseudonymous or anonymous responses, change entries, access the index or summaries, or send or receive Confer messages.   Because InfoX does not yet allow for many conference management features, organizers and advanced users may want to access MTS conferences through the traditional Confer II command-line interface.

If you have questions about conferencing with InfoX, send e-mail to: confer_support@um.cc.umich.edu

InfoX Mail displays folders for new, old, sent, and deleted messages.   The open New Messages folder shows the sender's name, the subject, the date sent, and the length of each message.   The OPEN button at the top of the screen allows the user to read and reply to messages in any folder.

You can use the buttons at the top of this InfoX User Directory window to search for, add, update, or delete a User Directory entry.   There is also a button to access online help.

When a conference folder, such as CRLT:MAC.NOTES, is opened, InfoX displays a variety of information about new items and new responses.   The buttons at the top of the screen allow the user to join a conference, read any item, enter a new item, forget an item, and mark all items as seen.

A useful feature of InfoX is its Bug Reporter, which you can use to send problem reports, comments, and suggestions to the InfoX developers.   Your feedback will play an important role in continuing InfoX development, and we encourage you to give us your input.

To use InfoX you will need a Macintosh with at least 512K RAM and System Version 4.1 or above. InfoX can run under MultiFinder.

A complete description of InfoX is given in *Using InfoX*, Tutorial T7019.

INDEX

Reader's Comment Form

Messaging and Conferencing in MTS

February 1991

Errors noted in publication:

Suggestions for improvement:

Date   _____

Name   _____

Address   _____

Your comments will be greatly appreciated.   Please fold the completed form as shown on the reverse side, seal or staple, and drop in Campus Mail or in the Suggestion Box at any Campus Computing Site.

fold here

Documentation Group
ITD Consulting and Support Services
The University of Michigan
611 Church, 2nd Floor
Ann Arbor, Michigan 48104-3056
USA

----
fold here