

Message Master

v2.03

by

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Sysop of FidoNet(tm) node 1:350/59

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Acknowledgments

I wish to thank the Message Master Alpha-Beta Test Team for their enthusiastic and tireless efforts. Their time, hard work, and suggestions have made Message Master an outstanding, solid product that I'm sure you will enjoy.

I wish to give special thanks to Hubert Lai for his never-ending bashing of my programming efforts which kept me glued to the screen for a solid week (my wife would like to get her hands on him too). His help in the design of many of the user features has contributed much to the overall feel of Message Master. Straight, and to the point:-), Allan Bazinet's fine work deserves high praise and I wish to express my sincere thanks for the extra effort. Without his insight, point addressing in Message Master would be virtually non-existent.

Both of these gentlemen are, without a doubt, two of the kind we need more of in FidoNet.

Introduction

Message Master (MsgMstr) was developed out of the need for a good, clean FidoNet message reader for Microsoft's Windows(tm) environment, and also to provide experience in Windows(tm) programming for your's truly. I think you will agree that (at least the first point) the objectives have been attained.

MsgMstr is a *.MSG format message editor in the traditional sense in that there are two main modes of operation -- Read Message and Edit Message modes. *To edit messages, you must be in the edit mode.* Trying to edit text without entering the edit mode is not allowed and you will not be able to edit the displayed message. You will know when you are in the edit message mode by the display of the Quick-Access buttons and the ability to access the message body. While in the edit mode, only three of the buttons are active -- namely the Cancel, Save, and Merge buttons, which are explained below.

MsgMstr is not only a message reader and editor, it is a message maintenance system in itself. Some features include Quick-Access editing buttons; reply and quoting features; easy, one-step access to **file requests with easy file selection**, update requests and file attach options; versatile **text search** feature; convenient and flexible default attributes feature; *quick, easy installation* (esp. if you use BinkleyTerm); **'standard' keyboard action keys** remanent of Msged and OpMed; fast-action, single stroke access to most message menu functions; manually 'launch' your favorite mail scanner; **automatic** netmail address retrieval; unique Copy Machine feature; powerful *Mass Message Operations*, and much more. Features will continually be added to future versions and the system refined, as your needs become more apparent.

What MsgMstr is not is a DOS program. This has a couple of aspects worth mentioning. First, Windows(tm) applications are notoriously slower than DOS applications. I believe most of us understand why, so I will not dwell on that problem. Every attempt has been made to make MsgMstr as responsive as possible. Certain routines were written in such a manner as to prevent unwarranted delays in placing information on the screen. I believe you will be happy with the implementations to date.

Secondly, DOS has (normally) one way of showing text -- 80x25. Windows(tm) is different. It is graphical and has a much varied user interface. Because of this difference, the character sets between normal DOS message editors and MsgMstr's are not the same. To compensate, a button and default option menu item are provided to allow switching between the character sets. Information on these features are provided below.

MsgMstr was developed on a system with SVGA and using a 800x600 video driver, with testing accomplished in standard VGA mode. SVGA a wonderful mode and one that affords access to large amounts of information onto the screen. Unfortunately, it is not the 'standard' mode installed with Windows(tm), if there is a 'standard' mode. Usually, a lower resolution is installed which, to my way of thinking, limits a user in this graphical world of ours. MsgMstr is written to accommodate all video drivers as it should be, but, if you do have higher display capabilities than VGA, I recommend you investigate them. They may be worth it. (Don't let it scare you when you first try it. The information will seem soooo tiny at first, but after you get accustomed to the look, you'll wonder how you got along without it.)

Shareware Notice

This software is not free and is not released into the public domain. This is shareware, a 'try before you buy' marketing method. The software you are now using, MsgMstr, must be purchased after a short evaluation period - that period being 30 days from the time you begin using it. If you feel this product benefits you,

and you intend to use it past the 30 day trial period or have used it past the time limit, you must send \$35.00 to:

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This fee entitles you to continued usage of the version purchased and one free upgrade to the version of your choice. What this means is you do not have to upgrade to the next consecutive version to obtain a free copy of a later version. You may skip any number of versions before you send for an upgrade. For example, say you registered under v1.10 then shortly thereafter, v1.20, v1.30 and v1.40 were released. You may opt to defer your upgrade until v1.40 and still receive your free upgrade. This does not entitle you to use v1.20 or v1.30 though, until you have received your upgraded v1.40.

Any further upgrades after your initial free upgrade costs only \$5.00 and is to help pay for shipping and handling.

If you do not intend to use this product, you must erase it from your storage media. If you are a System Operator (SYSOP) of a form of electronic bulletin board system and intend to help distribute MsgMstr, you may make MsgMstr available in your download area but may not use it unless purchased as per the above registration information. If you are a SYSOP and place this file 'online' for download, it must be in its complete form and include all files in the original distribution package. Namely:

MsgMstr.Exe	The program
MsgMstr.Wri	The docs, now in Write format
MsgMstr.New	New features with this release, in Write format
MMScan.Exe	Index building utility
BetaNote	Notes to Beta-Testers of MsgMstr (included in Beta-versions only)

Please adhere to these guidelines as this product is the result of MANY hours of work and the author is poor, needs the income, has teenage children who have not eaten in 2 months, and needs money for the brain tumor that has been running rampant for 9 months. Note that MsgMstr is not crippled in any way and does not insist on registration by annoying the user with useless displays. The author is a trusting soul and feels most users are honest and will register programs they feel are worthwhile. Please help reenforce his trust in humankind and register MsgMstr.

Distribution

MsgMstr is distributed through CompuServe (CIS), WINNET and/or SDS, and the author's Fidonet address (1:350/59.0) when new releases are thought to be needed. Announcements will be made as to its availability in the WINDOWS and WINDOWS.PROG echo areas on Fidonet and in the IBMPRO Forum on CIS. Other means may be included as time passes and the author's interests change.

To contact the author, send Netmail to 1:350/59.0 or leave mail on CIS to 70363,362.

Setup

Installation of MsgMstr is simple. Place the MsgMstr.Exe file into any directory. If you are using BinkleyTerm, then ensure the 'BINKLEY' environment variable is set to Bink's directory and a copy of AREAS.BBS is in the same directory (if you have one). Install MsgMstr into a group window of your choice. Double click the MsgMstr icon and away you go.

MsgMstr will search for the environment variable 'BINKLEY' first to establish the default path for the files it uses for automatic setup. If not found, it will search for the file 'BINKLEY.CFG' in the directories listed in your PATH statement. If still not found, then the current directory is used as a default for the files needed.

MsgMstr will also locate and utilize the 'Application' parameter if placed in the Binkley.Cfg file. MsgMstr currently supports only one variation of the Application parameter. The format necessary is:

```
Application MsgMstr Area <type>,<title>,<path>
```

where <type> is either 'L', 'E', or 'P' for Local, Echo or PassThru area respectively. <title> is used in the same manner as an Echo name but may be more than one word if the line is flagged a type 'L'. The <path> indicates the full pathname to the message area. Here is an example:

```
Application MsgMstr Area L,Opus Meadow,E:\Msgs\Meadow  
Application MsgMstr Area E,CHAFF,E:\Msgs\Net\
```

MsgMstr is pretty forgiving in the format of these lines. Case is not important although I usually use caps for echo areas and a mix for local areas in the <title> parameter; the paths may or may not end with a backslash, depending on your preference; and there may be leading spaces in each field which will be removed. See BinkleyTerm's documentation for a complete description of the Application parameter.

MsgMstr will also find and utilize Areas.Bbs. You may use the normal format that most mailers require using a mix of echo, passthru, and local entries. Refer to your mailer documentation for further information on these entries.

One note of interest. You should not list your echos in both the Areas.Bbs file and Binkley.Cfg. Although no problems should occur, both would be listed as separate areas when using the editor.

For those not running BinkleyTerm, or if MsgMstr can't find anything it's looking for during the previously stated procedure, you will need to fill in the setup windows upon start up. Once completed, all necessary files will be created in the appropriate directory. Note that only Echo areas should be filled in during the setup routine when asked. This is because these files are added to Areas.Bbs, not Binkley.Cfg. You will need to add local areas to Areas.Bbs or Binkley.Cfg file manually using the formats above.

Be aware that a file called 'MSGMSTR.INI' will be created in your Windows(tm) directory and contains some system setup and default information. You should be

able to determine each line's purpose by inspection but Appendix B of this document describes each entry in its entirety. Make changes to 'MSGMSTR.INI' manually only if you are sure what you are doing. The paths to necessary files for start up are placed in this file, and flag information is encoded.

Another file is required to be created to operate the List Message Header function in the Services menu in a reasonable amount of time. This file can take quite a while to create because it holds information for each message in the system but its use becomes transparent after it has been created. The file is created in the same directory as the nodelist. More information is contained below under Build Index and MMScan.

A temporary file is also created during start up. This file, created in the directory set by the Windows(tm) TEMP environment variable, will be named ~MSGxxxx.TMP and is a zero length file. It acts as an indicator to other running processes that MsgMstr is active. You can check for it's existence using the following logic:

If the TEMP variable is set, check in the named directory.
If the variable is not set, or the indicated directory does not exist, then the file will be created in the root directory of the first hard drive present.

As you can see, MsgMstr is quite flexible in it's requirements for configuration information and should provide you with enough latitude to get your system just the way you want it.

The Message Display

Message display is broken into three major areas in MsgMstr -- the Header Window, the Message Window and the Control Interface. Normal scroll-bars and title-bars accompany these areas as necessary and belong to the Control Interface. The title-bar displays the program name followed by the area name and type of area it is, such as local, echo, etc. Nearly all displayed information is self-evident but a few features are worth mentioning and may need clarification.

Items in the Header Window are displayed in a manner to best fit the screen display. In echo, local, and the storage message areas the information should be quite clean and presentable. In the Matrix, or NetMail, area there may be some loss of characters when displaying system names. MsgMstr tries to ensure text on the right of the screen, such as the date and tag information, is displayed in as little area as necessary to ensure no loss of vital information. In the Matrix area, system names are displayed if found in the nodelist. These names follow the From/To fields and may be so long, they overlap some of the info on the right of the display. To remedy the clash, the name info is simply overwritten by the info to the right. This is done considering the info on the right is more important to a user than the system names. On small-scale video displays such as SVGA in 800x600 mode, this problem is less apparent but may still pop up once in awhile. This is not a bug in MsgMstr, but a design implementation to afford the most information to the user and still retain a pleasant display.

Another item of interest is the color scheme presented to the user. Header information comes in two variations -- information that has been seen and information that has not. To help the user distinguish which messages have been read and which have not, the information displayed will be one of two default colors; either Green for messages that have already been read, and Magenta for messages that

have not. This scheme allows the user to quickly determine if a message has been read or not. These are default colors and may be changed with the 'Adjust Text Color' option on the Services Menu.

MsgMstr uses a combination of tagging and the LASTREAD message information to determine if it has been read or not which is quicker and safer than using the times-read field of the message.

Operation

MsgMstr operates as most other Windows(tm) programs -- using a combination of keyboard, mouse, and menu commands. Buttons and simple keystrokes are provided for common actions. Below is a list of options activated either by menu-selection or by the Quick-Access buttons on MsgMstr's main display, or both. Note also that most menu selections are provided with fast-action keystrokes, single stroke key presses that avoid clicking through the menus.

The format of the section titles provided below is to list the main menu selection first, followed by the sub-menu title. Means of access is indicated in parenthesis following the section names. 'M' indicates it may be accessed from the menu's, 'Q' means a Quick-Access button is provided, and 'K' states a keystroke is provided. Note that normal Windows(tm) keystrokes (such as the Edit Menu shortcuts and access to the menu) are not listed below, only those that are of special significance. For standard Windows(tm) keystrokes, refer to your Windows(tm) manual.

A special note pertaining to button operation of the main reader display: The 'Enter' key will operate the last button selected. If you have just used the 'Next' button, pressing the 'Enter' key will operate the 'Next' button again.

Files - Save MSG Text (MK)

This menu item saves the current message body as a formatted ASCII text file. No header information is stored.

This option provides the user a way to transport messages to other, less-capable (non-Windows, non-FidoNet) machines.

If the file you select to save the message to exists, you will be given the opportunity to overwrite the file, change the specification or abort the operation. Press 'Shift+F4' to activate this option from the keyboard.

Files - Save MSG (MK)

This menu item saves the current message as a formatted ASCII text file. All header and message text is written to the selected file using the current default options concerning EID's and SEEN-BY lines.

This option provides the user a way to transport messages to other, less-capable (non-Windows, non-FidoNet) machines.

If the file you select to save the message to exists, you will be given the opportunity to overwrite the file, change the specification or abort the operation. Press 'F4' to

activate this option from the keyboard.

Files - File Request (MK)

This menu item will create a file request message in the Matrix area, no matter which message area the user is currently in. This permits the user to request a file on the fly while browsing through messages and upon finding something of interest without having to change to the Matrix area. The request may be either placed on Hold, as Crash mail, or if neither of these options are selected, as Normal mail. Press 'F5' to activate this option from the keyboard.

Files - Rescan Message Areas (MK)

Allows the user to rescan all message areas and update the list of messages that have new mail in them. MsgMstr automatically rescans all message areas every two hours from system startup and when entering a new area, so this option is not normally necessary but is provided for your convenience. Press 'Shift+F2' to activate this option from the keyboard.

Files - Set Water Marks (MK)

Allows the mail processor to rescan message areas by resetting the so-called water marks, marks that are identified by most mailers as to whether messages have been scanned or not. This allows for faster processing by the mailer and affords you the opportunity to select messages to be rescanned, and mailed again. MsgMstr affords access to both high and low water marks and displays pertinent information about current settings. Press 'W' to activate this option from the keyboard.

Files - Print Message (MK)

Sends the current message to the printer. This selection uses the Windows'(tm) interface so you must have Print Manager available. Press 'P' to activate this option from the keyboard.

Files - Exit (MK)

Allows you to exit MsgMstr. You will not be prompted before exiting using this option from the menu, but if you use the ALT+F4 key command, you have a second chance before exiting MsgMstr. Press the ALT+F4 key to activate this option from the keyboard.

Files - About (M)

Displays sysop/system specific data, MsgMstr's version number, and copyright information.

Edit - Undo (MK)

Reverses the previous editing command.

Edit - Cut (MK)

Removes the selected text and places it into the Clipboard.

Edit - Copy (MK)

Places a copy of the selected text into the Clipboard.

Edit - Paste (MK)

Places the contents of the Clipboard at the current cursor location.

Edit - Clear (MK)

Deletes the selected text without placing it into the Clipboard.

Edit - Save (MQK)

Saves the message currently being edited and returns to the previous message in the message read mode. Press CONTROL+S to activate this option from the keyboard.

Edit - Cancel (MQK)

Cancels the edit session without saving the edited message and returns to the previous message in the message read mode. Press CONTROL+C or ESCAPE to activate this option from the keyboard.

Edit - Merge Text File (MQK)

This is a quick way to merge an ASCII text file into a message. The merged file is placed at the current caret location of the message being edited. If text is selected via standard Windows(tm) selection methods, the text is **replaced** by the imported file. This command is unavailable unless in the edit mode. Press CONTROL+M to activate this option from the keyboard.

Note that the message edit window is only capable of holding about 32,000 characters. If an attempt is made to merge a file that would exceed this limitation, an indication of the problem is displayed and the user is returned to the current message being edited.

Edit - Select All (MK)

Selects all text in the body of the message.

Edit - Edit Header (MK)

Allows the user to change the current message header information. You may activate this option by double-clicking on the header information window. This is an extremely powerful feature in that all flags in a message header may be edited, whether it makes sense or not. Be careful in how you manipulate these flags. For information on flag settings, see FSC-0036.TXT or the FidoNet Standards series.

Press 'H' to activate this option from the keyboard or double-click anywhere in the header window to activate this option.

Edit - Edit MSG Text (MK)

Allows the current message text to be edited and saved. The user is placed in a mode similar to the Enter Message mode, but the message, if saved, will overwrite the current message. No header info is changed. Press 'E' to activate this option from the keyboard or double-click the right mouse button in the header window.

View - Jump to Message (MK)

Prompts the user for a message number, then locates and displays the message or the message nearest the location desired. If the desired message is not found and if the desired message is lower than the current message, the next lowest message is displayed. The reverse is true for a selection high than the current message. Press 'J' to activate this option from the keyboard.

View - Next Message (MQK)

Selects the next message number higher than the current message. If the current message is the highest message in the area, then nothing happens. The 'Right Arrow' key may be used to select this option from the keyboard.

View - Previous Message (MQK)

Selects the next message number lower than the current message. If the current message is the lowest message in the area, then nothing happens. The 'Left Arrow' key may be used to select this option from the keyboard.

View - Thread Forward (MQK)

Selects the next message in the current thread. To determine if there are other messages in a thread, an indicator will be displayed in the header information. The 'F' key may be used to select this option from the keyboard.

View - Thread Back (MQK)

Selects the previous message in the current thread. The 'B' key may be used to select this option from the keyboard.

View - Next Message To You (MK)

Selects the next message that is addressed to the Sysop. The 'Shift+Right Arrow' keys may be used to select this option from the keyboard.

View - Previous Message To You (MK)

Selects the previous message from the current one that is addressed to the Sysop. The 'Shift+Left Arrow' keys may be used to select this option from the keyboard.

View - Next Message From You (MK)

Selects the next message that has been sent by the Sysop. The 'Control+Right Arrow' keys may be used to select this option from the keyboard.

View - Previous Message From You (MK)

Selects the previous message from the current one that has been sent by the Sysop. The 'Control+Left Arrow' keys may be used to select this option from the keyboard.

View - Default Message (MK)

Jumps to the message that was current when the session started. Eg., if message #45 was the first message you saw when you entered the C_ECHO area then you read 35 messages, using this option will jump back to message #45. This number is valid throughout the session. Areas without messages or areas that started without messages cannot use this option. The 'G' key may be used to select this option from the keyboard.

Message - New Message (MQK)

Allows the user to enter a new message. The current user's name and address will be filled in automatically. Default message attribute settings will be selected. Message attributes may be changed as necessary. Once all required header information is supplied, the user is prompted to enter the message body. The Quick-Access buttons will change to allow saving the message or aborting the session. Other buttons and menu items become non-functional until the session ends. All editing functions are activated as available until the session ends.

If a FIDouser.LST type of file (described below) exists and the 'User List' path points to this file, a couple of advantages become apparent. First and foremost, automatic address retrieval for addressees is activated. What this means is, if a name is typed into the To field MsgMstr will attempt to locate a matching name in the FIDouser.LST file and if one is found, the address field will be filled in and selected. Similarly, if an address is filled into the address field, the To field will be filled in with the matching name. This will only happen if either the To field is empty when the address field is filled in or when the address field is empty when the To field is filled in. The action takes place when the user tries to move from the appropriate field. Try it. The author finds it to be an excellent improvement.

The button marked "Sysop Name Lookup" opens a list-box of names from the file pointed to by the User List Path, mentioned above. Note that this button is not displayed unless the 'User List' pathname is pointing to a file that exists. The 'User List' file is an ASCII text file of sorted names and addresses as produced by most nodelist compilers. The format of the text lines are:

Lastname, Firstname Init. [address]@[domain]

where [address] is a full FidoNet address and [domain] is the network associated with the address. The fields are separated by an '@' symbol and none are optional. The braces are not included in the files. Example:

Select the name by normal list-box manipulation or press the key of the initial of the last name you are searching for to quickly access the area you are looking for. Example: If I wished to search for William Schlichtman, I could press 'S' or 's' and MsgMstr would place the selection bar on the first person with a last name that begins with 'S'. I could then use the scroll-bar to locate and select the desired item. This method works from anywhere in the list-box. Once a name is selected, it will fill in the To field and attach the correct address to the address field.

The list-box will be filled with as many names as are present in the User List file or until memory is expended, whichever comes first. Currently, there seems to be room for about 4500 names as run under the author's system. Your system's capabilities may vary this statistic.

You may attach files to a message if you wish. A normal file selection display is presented and selecting files may be accomplished by point and shoot methods. More than one file may be selected but a total of 72 characters may not be exceeded in the selection window. Press 'N' to activate this option from the keyboard.

Message - Quote (MQK)

Allows the user to reply to the current message and inserts the text from the current message into the new message, formatted with current FidoNet standards. The current user's name and address will be filled in automatically along with the addressee's name and address information. Default message attribute settings will be selected. Message attributes may be changed as necessary. Once all required header information is supplied, the user is prompted to enter the message body. Quoted material should be edited to include only pertinent information relevant to the response. ALL OTHER QUOTED MATERIAL SHOULD BE DELETED. The Quick-Access buttons will change to allow saving the message or aborting the session. Other buttons become non-functional until the session ends. All editing functions are activated as available until the session ends. Press 'Q' to activate this option from the keyboard.

See 'Message - New' for a description of the 'User Retrieval' button and file attaches.

Message - Reply (MQK)

Allows the user to reply to the current message. The current user's name and address will be filled in automatically along with the addressee's name and address information. Default message attribute settings will be selected. Message attributes may be changed as necessary. Once all required header information is supplied, the user is prompted to enter the message body. The Quick-Access buttons will change to allow saving the message or aborting the session. Other buttons become non-functional until the session ends. All editing functions are activated as available until the session ends. Press 'R' to activate this option from the keyboard.

The difference between this option and the 'Another' option is that this option places the current message 'From' data in the 'To' field of the message being created. The 'Another' option places the 'To' data from the current message into the 'To' field of the

message being created.

See 'Message - New' for a description of the 'User Retrieval' button and file attaches.

Message - Another (MK)

Allows the user to create a new message using the current message's 'To' and 'Subj' field data. The current user's name and address will be filled in automatically along with the addressee's name and address information, and the subject matter of the current message. Default message attribute settings will be selected. Message attributes may be changed as necessary. Once all required header information is supplied, the user is prompted to enter the message body. The Quick-Access buttons will change to allow saving the message or aborting the session. Other buttons become non-functional until the session ends. All editing functions are activated as available until the session ends. Press 'R' to activate this option from the keyboard.

The difference between this option and the 'Reply' option is that this option places the current message 'To' data in the 'To' field of the message being created. The 'Reply' option places the 'From' data from the current message into the 'To' field of the message being created.

See 'Message - New' for a description of the 'User Retrieval' button and file attaches.

Message - Store (MQK)

Saves a duplicate copy of the current message to a special, user-selected storage area that should not be scanned by mailer software. This area is to afford the user with a safe place for those messages that are felt to be too important to lose. Press 'S' to activate this option from the keyboard.

Message - Delete (MQK)

Deletes the current message. A warning message is displayed prior to deletion for that last-chance some of us need at 02:00. Press 'D' to activate this option from the keyboard.

Message - Move (MK)

Allows the user to move the current message to another message area. This option is a great way to make an instant copy of the current message. Just select the Move option, indicate moving it to the same area and you have an instant duplicate. Press 'M' to activate this option from the keyboard.

Message - Forward (M)

Provides a method to readdress, make a copy, or post to another message area the current message. Full flag edit capabilities are available as when editing a new message. The capabilities of this option have increased since v1.10.

Message - Quick Tag MSG (MK)

Marks the current message with the Quick-Tag -- or 'K' -- tag. Press 'T' to toggle the tag of the current message. Press 'T' to activate this option from the keyboard.

Message - Copy Machine (MK)

A powerful feature provided to allow carbon copies of the current message to be sent to other individuals. The selection brings up a dialog-box that contains two list-boxes, two edit-windows, and four option buttons. The left list-box contains the contents of the file pointed to by the User List parameter in the Default Settings. This list is provided to make selections of the users you wish to send the current message to. Make selections either by double-clicking the name you wish, or by highlighting the selection and clicking on the 'Select' button or typing 'S'. If the list-box is selected, you may press the initial character key of the desired recipient's last name to access that name more quickly. An example would be if you were looking for Rob Reed. Pressing 'R' while in the left list-box would take the selection cursor to the beginning of the entries whose last names begin with 'R'. If the User List is not present, the list-box on the left is left blank and disabled. If it is present, about 4500 names can be held in this list-box. This statistic is taken from the author's system capabilities. Your setup may differ the results.

The list-box on the right is initially blank but is filled as you make your selections. You may fill this box with up to 100 addressees and may delete users from the list by either double-clicking on the item to remove, or by highlighting your selection and clicking the 'Remove' button or typing 'R'.

The edit-boxes are for manual entry into the Copy Machine list-box and allow only one entry at a time. This may be used at any time, but is normally used only for entries not in the User List or if a User List is not present. Both boxes scroll horizontally so there should be no problem with the length of entry you need. Press 'C' to activate this option from the keyboard.

Message - Group Operations (MK)

This power-house option affords many of the features described above -- but on a mass-message basis. The options provided allow groups of messages to be Moved, Copied, Deleted, Printed, and Stored. These options may be performed on messages that have been tagged, selected, and/or specified within a range. The versatility this option provides should meet any user's needs and should allow for very efficient system operation. Due to this option's power, it may be necessary for users to practice using the features to fully appreciate its functionality.

The user is presented with a dialog box containing numerous edit-boxes, check-boxes, push-buttons, a list-box, and other miscellaneous information. The list-box is filled with information provided by either MsgMstr.Idx, the index file, or by information directly obtained from messages in the current message area. The dialog-box caption displays the current message area and the type of area -- either Matrix, Echo, or Local. Current message number information is displayed in the lower section of the display on the right of the dialog-box.

In the lower-left of the display is a group-box of tag switches and edit-boxes to specify message range information. How the tag-switches operate depend on the option selected. To tag messages, select the appropriate tag, select the messages in

the list-box you wish to tag, then select the SET push-button. All high-lighted messages will have the selected tag set to on. To reset a flag, select the flag you wish to turn off, high-light the messages you wish to have MsgMstr operate on, the select RESET. Each selected item will have the selected flag turned off.

To perform one of the group-operation functions other than tagging, you may select the messages to be operated on, use the tags set by the previous operation described above, set a range of messages, or a combination of the three. An example would be the easiest way to describe these operations.

Suppose you wish to copy a group of messages from your C_ECHO area to your C_PLUSPLUS area. Let's further suppose no tags are set at this time. Now suppose you wish to copy messages 35 thru 47. To perform this operation, you can either high-light the appropriate messages, specify a range in the RANGE group-box, or tag the messages with a desired tag, then select the COPY button. You could also high-light messages 35-40, tag messages 41-43 with tag 'C', then specify 44-47 in the range boxes. Once you select the COPY option, all of the messages would be copied to C_PLUSPLUS.

One thing about tagging should be mentioned. Just because a message is tagged does not mean an operation will be performed on that message. The tag must be accompanied by the corralating tag-switch to be acted upon. If you have a message tagged with the 'B' tag and only the 'G' and 'H' tag switches are selected, nothing will happen to that message until the 'B' tag switch is selected. Tags are used mainly for complex operations during search operations and afford maximum flexibility. Press 'O' to activate this option from the keyboard.

Message - Search (MK)

Searches messages for user selected string text. Options to allow whole word recognition, ignore upper/lower case differences, search all messages in the area or search from the current message, search all messages in all areas, and quick-tag are provided.

The quick-tag option allows the search to take place without displaying individual messages. The messages that are found to contain the search pattern will be marked as follows:

Match found in message header From field	-- Tag 'P'
Match found in message header To field	-- Tag 'O'
Match found in message header Subject field	-- Tag 'N'
Match found in message body	-- Tag 'M'

If the quick-tag option is selected and an individual tag is also selected, the individual tag is set along with the appropriate tag described above.

If the quick-tag option is not selected, each message containing the search pattern will be displayed as it is found. If individual tags are selected, each message will be tagged appropriately. When a message is found and displayed, three options will be displayed -- Search, Cancel, and Done. The following gives a rundown for each selection:

Option	Action	Disposition
Search	Continues the search until the next match is found	Returned to

message that was
or until the the end of the messages have been current prior to
search
reached

Done Search is discontinued immediately Message
displayed at the time this

option is selected remains current

Cancel Search is discontinued immediately Returned to
message that was current prior to
search

The whole-word option searches only for those patterns with spaces on either side. Example, if the search pattern were 'Testing' then MsgMstr would search for ' Testing '.

If the "Search from beginning" option is not selected then the search will start at the current message and continue until the last message in the area is reached. (No wrap-around is performed as in many search routines I have seen in Windows(tm) applications. I find this an annoyance rather than helpful, so MsgMstr does not provide the 'feature').

You may perform the search on all message areas if the Search all areas option is checked, and you may perform either case-sensitive or case-insensitive searches by selecting the ignore case option.

Press 'F2' to activate this option from the keyboard.

Message - Scan To/From Sysop (MK)

Scans the current area for messages to or from the Sysop. This option is not normally needed as MsgMstr attempts to maintain this tag current at all times, but is provided for use when new messages arrive on the system during MsgMstr operation. The TO flag is indicated by Tag O while Tag P indicates a message from the Sysop. (See APPENDIX D for tag indicators)

Press 'Control+F2' to activate this option from the keyboard.

Change Area (MK)

Pops up a list of message areas to choose from. These areas are all areas listed in the AREAS.BBS file obtained during start up and all areas found in 'Application' parameters in the Binkley.Cfg file. Another called 'MATRIX' is listed, which is the system's netfile area. MATRIX is the area that MsgMstr always starts up in and is listed first. Also, an area called 'STORAGE' is listed. This area holds messages you 'Store' with the 'store' option. See Message - Store.

Any item preceded by an asterisk '*' is an area with new, unread messages. 'New'

messages are determined by the last message pointer maintained in each message area. Press 'A' to activate this option from the keyboard.

Note: Due to tagging features allowing fast access for certain features, the first time an area is entered the initialization may take slightly longer to process. You will notice the cursor remains an hour-glass shape for some time after the area is entered. This is due to the fact that the index file is being processed for tags. This procedure only happens during the first access to the area. MsgMstr is smart enough to know that the information it needs is already available if the area has been accessed before.

List Messages (MK)

Pops up a list of header information concerning messages currently on the system (see the discussion below under Build Index). Controls to move about throughout the messages in the area are placed at the bottom of the screen and allow the user to jump to the end, beginning, or in the middle, select a message, or abort selection along with standard list-box controls. Highlight the desired item and select the OK button, hit the return key, or double-click on the item to display that message. Press 'L' to activate this option from the keyboard.

Services - Default Attributes (MK)

Pops up a screen affording a myriad of options available to the user. Current defaults are checked. Clicking on any item toggles its state, with an 'x' indicating the value will be attributed to the message or system, as appropriate. Any selection is possible except where options would be mutually exclusive, such as crash/hold mail. The user may abort settings or write them to MSGMSTR.INI by selection of the appropriate OK/CANCEL button. The changes will be written to MSGMSTR.INI and the options will take effect upon selecting 'OK'. Press 'Shift+F1' to activate this option from the keyboard.

See APPENDIX C for explanations of attribute settings and APPENDIX D for message flag settings.

Services - Paths and Files (MK)

Provides the user with a display of the various system default file paths and pathnames. Mostly, the information is provided as a courtesy to the sysop, but all information is configurable just in case your system requirements are unique.

Note that paths in the Files group box require a complete pathname. This allows the user to change the name of particular files that are known to run under different mailing utilities, but require or desire a different name. An example is the .OUT file which I call ConfMail.Out, but one of my beta testers runs as Areas.Out.

At the bottom of the dialog box is a Quote Information Line. This is a special, formatted line that is used along with the Quote Info checkbox for each of the message types located in the Service - Default Attributes menu. If the checkbox is selected, the text in the Quote Information Line will be placed prior to quoted text when saving a quoted message. An ending separator line is also attached at the end of the quoted material.

See APPENDIX E for a complete description of the Quote Information Line.

An Origin Line may be added to your messages. MsgMstr defaults to an Origin Line that displays your system name and address. A special file named ORIGIN may be placed in any or all message directories to over-ride this default. This file may contain any ASCII text on a single line. If this file is found in the current message area when the message is saved, and if the Origin Info checkbox is selected, then the line contained in the file will be used as the Origin Line vice the default.

NOTE: Changing the default path names can place the system in an unknown state. Ensure you are correct in your settings when changing these options.

See APPENDIX C for explanations of attribute settings.

Press 'Control+F1' to activate this option from the keyboard.

Services - Video Toggle (MQK)

Normally Windows(tm) displays characters in what is called the ANSI character mode. Other text-based message editors use a similar, but slightly different mode called OEM mode. The differences are significant normally only when characters above 7F hexadecimal are used. At other times, when proportional characters are being displayed for instance, certain displays may also be affected. If you believe something is amiss on the display, try switching to the OEM mode to see if that may be the problem. To switch, you may use the Default Attributes dialog box, which will be recorded to the default data file, or you may use the 'V' toggle key or OEM/ANSI Quick-Access button, which only affects the current session.

Services - Adjust Text Colors (MK)

MsgMstr displays message header information with a default color of green when a message has already been read. If a message has not been read, that information is displayed in magenta. Some people may not like these defaults so MsgMstr allows the user to change the defaults.

To use the adjust option, select which type of message you wish to adjust the color on -- either new, unread messages or old messages that have been read previously -- move the thumb buttons on the scroll bars until the desired color is presented on the test text, then select the OK button. The defaults will be saved until changed again.

Both text colors may be adjusted in one session just by pressing the appropriate radio button.

Press 'Control+F3' to activate this option from the keyboard.

Services - Mail Scanner (MK)

Starts up you favorite mail processor, such as QMail, to allow instant mail handling. The command line option presented defaults, of course, to the command the author uses. Notice that a batch file is used. This allows for maximum flexibility when calling you procedure, but is not required. Ensure the command line you enter can be performed from your directory location. Otherwise

the system will return to MsgMstr without performing the desired operation.

If you intend to run a DOS application such as QMail from this command, you may wish to run it using a .PIF file. This will allow the routine to run in the background if you choose to do so.

The Default Attributes dialog box contains an edit window that allows you to reset the default setting. You must set a full pathname, including filespec and extension, along with any parameters you may wish to pass. If using a .PIF to run this option, no parameters are passed to the program. Press 'F9' to activate this option from the keyboard.

NOTE: This option has the capability of doing more than launching your mailer. Use it as you deem necessary.

Services - Build Index (MK)

MsgMstr's ability to list message header information depends on a file called MsgMstr.idx, an index file created by this menu option. It was decided an index file containing pertinent header information was needed to increase performance of the message selection process. Anyone that has ever accessed a message area containing more than about 300 messages knows the process can be excruciatingly slow, especially if Windows(tm) is involved. v1.00 and v1.10 used a round about way of reducing the pain in this area by only loading and manipulating 20 messages at a time. This was a satisfactory solution for early development but I felt a better solution was at hand. The outcome is the index file created by this function, and seems to be another satisfactory solution. The file holds indexing, CRC, from, to and subject data and is written to the directory pointing to the NodeList.

Be aware that this option may take quite some time to build the index, depending upon the number of messages on your system. For this reason, MsgMstr will allow continued usage of most options to allow the user to continue using the program while the index is being built. The 'List Messages' and 'Build Index' options will be disabled while the index is being built, but most other operations will be available.

Press 'Control+F9' to activate this option from the keyboard.

See APPENDIX B for information about keeping the index up-to-date dynamically.

Services - Edit Origin Line (MK)

If a file named ORIGIN exists in a message area and the Origin Line default switch is set, the text of the Origin Line will be set to the contents of the file ORIGIN. For this reason, there seemed a need for an Origin Line editor. This option fulfills that service.

Selecting this option allows the user to edit an existing Origin Line, add a new line, or erase the current file ORIGIN so that the system default Origin Line may be used again. It is a simple edit box and holds up to 63 characters, the usual maximum for an Origin Line. To use the editor, simply fill in the desired text, select the OK button and the file ORIGIN will be created or rewritten, depending on the current state of the file. To ignore all changes, use the Cancel button. To erase the file so that the system default Origin Line is used, select the Erase button. Press 'Alt+F9' to activate this option from the keyboard.

Services - Renum Msgs (MK)

Because the Storage message area does not get processed by a mailer, renumbering is not accomplished externally. MsgMstr permits the user to clean up after message maintenance when this option is selected. The messages in the Storage area will be renumbered consecutively and rescanned. This option is only displayed while in the Storage message area. Press 'R' to activate this option from the keyboard.

APPENDIX A

Reader Main Display Keystrokes

Right Arrow.....	.....	Displays the next message
Left Arrow.....	.....	Displays the previous message
Up Arrow.....	.....	Scrolls the message body up one line
Down Arrow.....	.....	Scrolls the message body down one line
Shift+Right Arrow.....	.....	Next message to sysop
Shift+Left Arrow.....	.....	Previous message to sysop
Control+Right Arrow.....	.....	Next message from sysop
Control+Left Arrow.....	.....	Previous message from sysop
PageUp.....	.....	Scrolls the message body up a page
PageDown.....	.....	Scrolls the message body down a page
Home.....	.....	Jumps to first message in an area
End.....	.....	Jumps to last message in an area
Shift+F1.....	.....	Default attributes
Control+F1.....	.....	Paths and files
F2.....	.....	Search option
Shift+F2.....	.....	Scan To/From sysop
Control+F3.....	.....	Adjust header text color
F4.....	.....	Save current message to a text file
Shift+F4.....	.....	Save current message body to a text file
Alt+F4.....	.....	Exits MsgMstr (prompted)
F9.....	.....	Mail scanner
Shift+F9.....	.....	Edit origin line
Control+F9.....	.....	Build message index
A or a.....	.....	Creates a message using 'To' and 'Subj' data from the current message
B or b.....	.....	Displays the previous thread message
C or c.....	.....	Copies the current message
D or d.....	.....	Deletes the current message
E or e.....	.....	Edit the current message
F or f.....	.....	Displays the next message in a thread
G or g.....	.....	Goto the session default message
H or h.....	.....	Edit the header of the current message
J or j.....	.....	Jump to any message number
L or l.....	.....	List header information for the messages
M or m.....	.....	Move the current message
N or n.....	.....	Enter a new message
O or o.....	.....	Execute the group operation dialog box
P or p.....	.....	Print the current message
Q or q.....	.....	Enter a quoted reply to the current msg
R or r.....	.....	Enter a reply to the current msg
S or s.....	.....	Stores the current message

T or t.....	Toggle the general purpose (K) tag on the current message
V or v.....	Toggles OEM/System Font video modes
W or w.....	Set water marks
Z or z.....	Zips you back to the last message viewed

Special Key/Mouse Combinations

Double-click Right Mouse Button.....	Edit the current message text
Double-click Left Mouse Button.....	Edit the current message header

All Double-click operations listed must be performed while the cursor is in the header-information window and while in the read mode.

Quick-Access Keys

OEM/ANSI.....	Toggles OEM/System Font video modes
Delete.....	Deletes the current message
Store.....	Stores the current message
TBack.....	Displays the previous thread message
TFwd.....	Displays the next thread message
New.....	Enter a new message
Reply.....	Enter a reply to the current msg
Quote.....	Enter a quoted reply to the current msg
Previous.....	Displays the previous message
Next.....	Displays the next message

Edit Mode Control / Quick-Access Keys

Control+C.....	Cancel the edit mode
Control+M.....	Merges a file into the message being edited
Control+S.....	Saves the message being edited
Escape.....	Cancel the edit mode (same as Ctrl+C)

NOTE: The Alt-keys function normally to operate the main menu in both Normal Mode. editing function selections in the Edit Menu operate only during Edit Mode.

APPENDIX B

MMScan

MMScan is a utility that supplements MsgMstr's 'Services - Build Index' menu option. This utility allows batch file processing of the index MsgMstr uses in looking up message header information. It builds the same file that would be built if the user selected the 'Services - Build Index' option.

Two things are necessary to use MMScan:

- 1) Your PATH environment variable must point to Windows'(tm) home directory and WIN.INI must be located in this directory, i.e., F:\Win. This should be no problem as this is the standard setup.

2) MsgMstr must have already created its .INI file in Windows'(tm) home directory. The configuration information there provides MMScan the necessary tools to work with.

The best time to run MMScan is at packet-processing time. I use MMScan after each call to my mail scanner, QMail. This can be modified to run only after Import's by the processor, but be cautioned that if you have messages marked as Kill When Sent, the index will not reflect the missing messages if MMScan is not run after the scan.

A new feature included in v2.00 of MsgMstr may make the use of MMScan fairly useless. MsgMstr now uses a timed function to see if the index is up-to-date. This function checks the timestamp of the index file to ensure it contains the same date/time that it contained when MsgMstr was first started. If not, MsgMstr.Idx is rebuilt automatically. This allows a user to leave MsgMstr on-screen at all times with the index remaining valid. (The nodelist is checked for validity at the same time using similar logic and will also remain correct.)

APPENDIX C

Message Master Configuration Variables

The items listed below in hexadecimal numbers are bit positions in each variable.

MESSAGE DISPLAY FLAGS

NetAreaDefaults

Contains an integer that represents the current default of the following options for the Matrix Message Area.

- 0x8000 - Add a Tear line to the message
- 0x4000 - Add an Origin line to a message
- 0x0800 - Add a Quote information line to a message
- 0x0400 - Add the Sysop's initials when quoting
- 0x2000 - Display EID lines

EchoAreaDefaults

Contains an integer that represents the current default of the following options for the EchoMail Message Areas.

- 0x8000 - Add a Tear line to the message
- 0x4000 - Add an Origin line to a message
- 0x0800 - Add a Quote information line to a message
- 0x0400 - Add the Sysop's initials when quoting
- 0x2000 - Display EID lines
- 0x1000 - Display PATH lines
- 0x0200 - Display SEEN-BY lines
- 0x0100 - Display other control lines

LocalAreaDefaults

Contains an integer that represents the current default of

the following options for the Local BBS Message Areas.

- 0x8000 - Add a Tear line to the message
- 0x4000 - Add an Origin line to a message
- 0x0800 - Add a Quote information line to a message
- 0x0400 - Add the Sysop's initials when quoting

MESSAGE ATTRIBUTE FLAGS

NetMsgDefaults

Contains an integer that defines the current flags used to mark messages in the Matrix Message Area.

EchoMsgDefaults

Contains an integer that represents the current default message flags for the EchoMail Message Areas.

LocalMsgDefaults

Contains an integer that represents the current default message flags for the Local BBS Message Areas.

Each variable in this category is of the following structure:

- 0x0001 - Private
- 0x0002 - Crash
- 0x0004 - Read
- 0x0008 - Sent
- 0x0010 - File Attach
- 0x0020 - Forward
- 0x0040 - Orphan
- 0x0080 - Kill When Sent
- 0x0100 - Local
- 0x0200 - Hold
- 0x0400 - XX2 (reserved)
- 0x0800 - File Request
- 0x1000 - Receipt Request
- 0x2000 - Reply to Receipt Request
- 0x4000 - Audit Trail Request
- 0x8000 - Update Request

FILE PATHS AND PATHNAMES

NetMailPath

Path to the Netmail (MATRIX) directory, the directory that holds all netmail.

NodeListPath

Path to the Nodelist directory which must contain a version 6 nodelist.

EchoOutPath

Pathname to the Echomail Outbound file. The full path and filespec is contained here.

AreasBBSPath

Path to Areas.Bbs, the echomail configuration file.

BinkleyPath

Path to Binkley.Cfg, the BinkleyTerm configuration file.

NetFilesPath

Path to the Network Files directory, where incoming files are stored until processed by the system mail processor.

FileStoragePath

Path to the Storage Area directory, where messages that are 'STORED' are placed. This area is normally not, and not recommended to be, processed by mailers.

ScannerPath

Contains a full pathname to a file the SYSOP chooses to run a mail scanner. Parameters to be passed to the scanner may follow the pathname.

UserListPath

Full pathname to an ASCII text file in the format of FIDouser.LST which is created by most NodeList managers.

SYSTEM CONFIGURATION PARAMETERS

SystemOperator

Sysops name

SystemName

Name of the System

SystemAddress

Full address of the system including zone, net, node and point number. The format is standard:

zone:net/node.point

BossAddress

Full address of the boss node including zone, net, node and point number. This is only present when the system is identified as a point. The format is standard:

zone:net/node.point

SystemDefaults

Contains an integer that represents the following current system defaults for the application.

- Use OEM character set
- Keep the LASTREAD file updated continuously
- Show passthru message areas
- Return to message area that last session ended in

DefaultArea

Contains an integer that represents the message area that the last session ended in. MsgMstr will start up in this area if the appropriate flag is set in SystemDefaults above.

QuoteLine

Contains the Quote Information Line (QIL) format string. See MsgMstr User's Manual APPENDIX E for correct formatting.

MsgMstrX

Contains the main window's upper left x-axis coordinate.

MsgMstrY

Contains the main window's upper left y-axis coordinate.

MsgMstrH

Contains the main window's width.

MsgMstrW

Contains the main window's height.

ColorRead

Default color for header information on messages that have been read. Uses the format RED GREEN BLUE. (NEW v1.21a)

ColorUnread

Default color for header information on message that have not been read. Uses the format RED GREEN BLUE. (NEW v1.21a)

Notes

Paths must contain a trailing backslash

QuoteLine must contain four formatting characters, namely:

%s %d %d %s

in that order. They may be anywhere in the Quote Info line, but they must be present and in the order presented.

Not all parameters listed here will necessarily appear in MsgMstr.Ini.

APPENDIX D

Message Header Flags

The following explains the meaning of each flag that can be associated with a message. Most only apply to Matrix (or NetMail) messages but all are listed for information purposes. Names are given as used by the author and as displayed in the header information section of the screen.

Private

The message may be read by the sender, receiver and sysop of any system.

Crash

The message will be sent by the originating system during a continuous mail event. This usually allows mail to be sent at times other than during normal mail hours.

Hold

The message will stay on the sender's system until the appropriate caller picks it up. The system will not transmit this message even if the destination system is called while the message is awaiting pickup.

Local

Informs the sending system that this message was created locally on the sender's system. This normally informs the mail processor how to handle the piece of mail.

Freq

This message is a file request and the subject field contains the file specification desired for transfer.

Update

This is similar to Freq although a determination will be made if the requested file is newer than the file in the requesting system's file directory. If so, the transfer takes place, otherwise it is cancelled.

File

This message has a file attached to it and initiates a file transfer session.

RecReq

This is a request that confirmation be sent to ensure a message was received correctly.

RetReq

This is a confirmation message and is sent in reply to a RecReq.

Sent

Informs the sysop that the message has been processed by the mail processor.

Read

Indicates the intended recipient has read the message.

Kill

Indicates the message will be deleted after the message has been processed by the mail processor.

Audit

Requests an audit trail be sent to determine a message's route.

Forward

Indicates the message is in-route and should be sent forward to its destination.

XX2

Is a reserved field and is not used.

Message Header Tags

- P - Message FROM Sysop
- O - Message TO Sysop
- N - Search pattern found in Subject
- M - Search pattern found in message body
- L - Message date matches search date
- K - Message tagged with Quick-Tag

APPENDIX E

A new, more flexible format has been established since v1.21. The new format allows virtually any format for the Quote Information Line and provides a greater selection of text-replacement variables to work with. You should be able to configure your Quote line just about any way you want it now. The following variables are allowed anywhere in the Quote Information string

The following group is dependent on the current system clock

- DAY Displays the current system day
- MONTH Displays the current system month (full month name)
- MTH Displays the current system month (first three characters only)
- MTHNUM Displays the current system month number (two digits)
- YEAR Displays the current system year (full year display)
- YR Displays the current system year (last two digits only)

The following group uses the date-written stamp on the message being replied to if it is set, otherwise it uses the ASCII field of the header.

- MSGDAY Displays the current message day
- MSGMONTH Displays the current message month (full month name)
- MSGMTH Displays the current message month (first three characters only)
- MSGMTHNUM Displays the current message month number (two digits)

MSGYEAR	Displays the current message year (full year display)
MSGYR only)	Displays the current message year (last two digits only)

The following group is dependent on the current system clock

HOUR	Displays the current system hour
MINUTE	Displays the current system minutes
SECOND	Displays the current system seconds

The following group uses the date-written stamp on the message being replied to if it is set, otherwise it uses the ASCII field of the header.

MSGHOUR	Displays the current message hour
MSGMINUTE	Displays the current message minutes
MSGSECOND	Displays the current message seconds

The following group is dependent on the current system settings or message being replied to, as appropriate.

DAYOFWEEK	Displays the day of the week (Sunday - Saturday)
DAYOFYEAR	Displays the day of the year (1-366)
SYSOP	Displays the current sysop's name
DESTSYSOP message	Displays the destination sysop's name of the current message
SYSTEM	Displays the current system's name

Each variable must be enclosed in a unique set of brackets -- '(' and '*' -- without the single-quote characters.

Example: On (*DAY*) (*MTH*) (*YR*) you wrote to (*DESTSYSOP*):

would display as (according to the authors current setup)

On 9 Jun 91 you wrote to Jim Barth:

This option allows for a lot flexibility in what can be placed on the line without too much complexity. A default string will be placed in the Quote Information Line edit box as an example and is the standard by which most message editors go.

APPENDIX F

Known Problems:

- 1) None

Planned Features:

- 1) Obtain more use from FIDouser.LST and NODELIST.*
- 2) Support for Nodelist v7.x.
- 3) Spell-checking.
- 4) More Win 3.x support through common dialog functions.
- 5) Foreign language support.

Special Notes:

- 1) There is a feature, and has been since v1.10, that allows you to select a different icon than the one presented on startup. To select a different icon, use the 'Properties' option in the 'Files' menu in the Program Manager.
- 2) This version of MsgMstr is released without some planned features so that support for Windows(tm) v3.1 can begin. Not as much testing has been accomplished as I would have liked so I am asking for your help in reporting errors you find. I will support v2.x vigorously through your input so please netmail me if you find a problem. Thanks.

APPENDIX G

Error Messages

The following information is to aid the author in debugging MsgMstr if the need arises. The error codes shown are displayed as system run-time errors and indicate a particular problem encountered. A number in parentheses is shown with an error message, and is a location code for use by the author. Should you encounter one of these errors, the error message and code should be sent to the author to help track down the problem.

MSGE1001 - Memory Object Lost

A handle to a memory location is invalid. Usually indicates an initialization problem.

MSGE1002 - Memory Allocation Error

Couldn't allocate the required memory. Usually indicates all memory has been used or not enough memory in the user's system to satisfy requirements.