

METAL Sysop Manual

Introduction

METAL is an electronic mail and message handling Bulletin Board System (BBS). When used in a remote system, it allows callers to enter and receive messages, news items, want-ads, and other text material. For remote use, communication programs such as BYE5xx and the Digital Research CP/M operating system (OS) are required. User interface is a series of convenient and easy to understand menus and command line prompts.

Hardware System Operation Requirements:

- * 58k or greater RAM under CP/M 2.2 system.
- * 300k or greater disk space and two drives.
- * TERM3 with proper Input/Output Package (IOP), or public domain BYE program required for remote access.

Distribution Files:

The following files are supplied on the METAL distribution disk:

- MENTR .COM -- This program loads METAL, and has it perform the initial login sequence overlay.
- METAL .COM -- The main message system. Handles message entry and retrieval, Sysop utilities, and all other message system functions.
- MEOVR .MOV -- This file contains overlays for most of the METAL commands. METAL will not work without this file.
- MECONFIG.COM -- Configuration program sets various system options into disk files.
- MECLKHDR.ASM -- Clock routine installation header. For use with BYE clock inserts.
- * .CLK -- Configured clock files ready for installation.
- MEINITBS.ASM -- Optional user initialization routine for BYE5xx.
- MEXIT .ASM -- Optional routine to update BYE/KMD counters.
- NEWUSER .MET -- Sample text file shown to first-time users of system.
- NOTES .IND -- A sample "NOTES" command index file (see the chapter describing special Sysop options).
- ARTICLES.IND -- A sample "ARTICLES" command index file (see the chapter describing special Sysop options).
- CPMINFO .MET -- Sample file displayed when entering operating system if user is a novice.
- APPINFO .MET -- Information for the APPLY command.
- HELP .MET -- Short help file.
- HELP .NOT -- Longer Description of all public message system commands. The most appropriate place for this file is in articles or notes menu (see section describing special Sysop options).
- USERS .LOG -- Starter user file with user #1 blank for sysop and #2, 3, and #4 taken by the FOG representatives Gale Rhoades, Jack Brown, and Roy Robinson.

Also included are several example text files useful as guides in

setting up your system. All have either the extension of .HLP, .NOT, or .ART. Modify them to suit your system and your philosophy.

Supplementary Programs:

- ZCPR or } CONSOLE COMMAND PROCESSOR REPLACEMENT: This adds
ZCPR2 or } various security features to your system. It also
ZCPR3 or } takes care of changing user areas or directories.
ZCMD }
- BYE5xx** REMOTE ACCESS COMMUNICATION PROGRAM: This program is used to answer the telephone and load METAL.
- KMDxx** REMOTE CP/M FILE TRANSFER UTILITY: This program handles the uploading/down-loading to your system automatically. This file is not required for message only systems.
- SD** SUPER DIRECTORY: This is an upgraded "DIR" command and is usually renamed to DIR.COM. The SD used should be checked to see that ZCPR is supported. Use SD97 or later.

The need for security in your system is highly stressed. If someone is able to download the USERS.LOG file, or perform certain standard operating system commands like ERA, REN, and SAVE, or manipulate the USER command, harm could be done to the files on your system, and possibly to other users (such as when a USERS.LOG file is compromised)! **Make sure any new program you use on your system checks for MAXDRIVE and MAXUSER bytes!** This allows METAL to set limits for these programs (TYPE, DIR, FIND, etc) If you are not sure how to set up a new program, please let us configure a copy for you here in the office.

Special Note for Trantor Owners:

Trantor hard disks use a transient CCP that is loaded from the hard disk with each 'warm boot' (^C). At the present time, ZCPR will not function with this type of CCP properly.

To provide security on your remote system, you will have to eliminate the dangerous commands in the TRANTCCP.SYS file using EDFILE or DDT. Just find the location in the TRANTCCP.SYS file where the commands are listed (at about 04CC). You will see:

CLS DFU DIR DIRAERA GET GO HELPPF JUMPLISTLF PAGEREN SAVESAVSTYPEUSER

You will want to replace all these commands with **lower case letters**. That eliminates the dangerous commands like SAVE and REN and lets you use your own command files for DIR, TYPE and HELP. Putting them in lower case will disable the commands, and make it easy to find them again in the future if you need to.

Installation:

Before running METAL, it must be configured for each system. A program called MECONFIG is supplied to make this job easy. Follow the steps below to setup each system.

Files and Disk Space:

The first thing that must be decided is where to put the files required by the message system. METAL comes pre-configured with suggested locations for best security. Refer to the following chapter for a lengthy description of each file. For now, use the following table as a guide to appropriate file locations. There are many files which should be private and out of public reach. Such files should be kept in the higher user areas of the system, and protected from remote access with BYE5xx.

Example Placement of System Files:

Location	File(s)
A: User 0	METAL.COM must be here!
B: User 0	User information text files BULLETIN.MET, CPMINFO.MET, HELP.MET, NEWUSER.MET, SYSTEM.INF, and WELCOME.MET can be placed here so that a user may read or download them from the Operating System.

(The *: in the listings which follow indicates all drives.)

- *: User 0-12 Public upload and download areas. Message system files are rarely kept here.
- *: User 13 Often reserved for special user uploads/downloads.

****** ONLY the SysOp should have access to the following areas!!! ******

- A: User 14-15 Confidential/Private files area. The vulnerable message system files should go in these areas. These files include MENTR.COM, MECONFIG.COM, CALLERS.LOG, COUNTERS, LASTCALR, MESSAGES, SUMMARY, NOTES.IND, FEATURE.IND, COMMANDS, USERS.LOG and MEOVR.MOV.
- *: User 15 Usually reserved for private uploads to SYSOP, or sysop executable files. If this area is used as a private upload/download area, the file transfer program (Usually XMODEM or KMD) must be configured to allow this.

METAL Sysop Manual

Other considerations must be made when there is only a small amount of disk space available. The REQUIRED files for use of the message system take up approximately 100k. This figure does not include the MECONFIG program, since it is only used to setup the system. Do not assume that if 100K is set aside on a disk, that the system requirements for a Bulletin Board System have been met. There are other things to consider. Unlike the executable files (METAL.COM, MEQVR.MOV, etc.), there are several files which increase rapidly in size as more callers enter the system, and leave messages.

For each entry in the users file 128 bytes are used. For example, if 300 users are anticipated, then about 40K should be set aside (300 X 128 = 38400, a little under 40k) for the users file.

Each message on the system takes anywhere from 384 to 8000 bytes, depending on the length of the message. Message files have been known to get as large as 450k, but don't panic. With proper maintenance the message and summary files can be kept under 150k (or even smaller).

With 100k for the executable files, 40k for the users file, and approximately 150k for the message files, a total of 290k is obtained. This suggests that at least 300k is required to use METAL.

If not enough space is available on one drive, some of the files may be placed on separate drives. Always keep the summary, counters, and messages files in the same location (drive/user). Separate the other files as desired.

The format for all filenames is the same: uu/d:ufn.typ

uu is the Operating System user number

d: is the drive

ufn.typ is the unambiguous file name

For example, a file called MYFILE.TXT in user area 15, on the A: drive would be specified as: 15/A:MYFILE.TXT

*** All filenames in METAL MUST be specified in their entirety. If this is not done, unpredictable results may occur.

Running MECONFIG

The main configuration program is called MECONFIG. With it user classifications, file locations, Operating System type, and many other parameters may be specified.

When the program is run, the first prompt asks for a configuration file name. This applies to a file that might have been saved during previous executions of MECONFIG. If a configuration file has not been saved before, simply press the RETURN key. A menu of available options will be displayed. The order in which menu items are selected can make a difference. Always setup the operating system item FIRST, followed by each of the other options. Failure to do so will make certain features unavailable.

*** Typing RETURN to configuration prompts retains current value.

Once each of the menu items has been gone through, save a configuration file for later use. This will make it possible to quickly reconfigure the system at a later time. Configuration files generally only work under the version they were created by so updated versions must be reconfigured. Once a configuration file has been saved, select the permanent save option to save everything into METAL. A sample configuration menu is shown on the next page.

Configuration Menu

1. Return to Operating System (optionally save configuration file)
2. Operating System Setup (ZCPR)
3. Edit User Types
4. Private/Public System Setup
5. Files: Names and locations
6. Maximum Login Tries user is allowed before disconnect
7. Real Time Clock Installation
8. BYE parameters
9. Location of System (Sign-on Message)
10. Printer log option
11. 25th Status Line setup
12. Sysop Name and Password
13. Message base options (Maximum # of msgs, etc.)
14. Save current settings in configuration file.
15. Recall previously saved configuration file
16. Permanently save current configuration in METAL or MECONFIG

*** Remember, the first menu item selected should ALWAYS be item #2 to set the correct operating system, and to assure availability of special OS features!

Each of the menu items are individually described in the Configuration Commands section.

Use ^P to route output to the printer while in MECONFIG to save a hardcopy of the configuration.

After the system is configured, it is ready for the first user to login. The **SYSOP** must be the first one to enter the system, so that extra system security will be in effect for the Sysop. He must use the same name specified in the MECONFIG Sysop name and password menu. For more information on logging on as the Sysop, refer to the chapter on special Sysop commands and features.

BYE Setup

BYE should be configured to automatically load a COM file when a call is received. The file loaded and executed must be MENTR.COM. An equate is found near beginning of the BYE source listing permitting auto program loading. The filename to be loaded is usually found in a DB pseudo-op about a fifth way from END of program listing. In the FOG software release versions, this has already been configured.

METAL Sysop Manual

Configuration Commands

When configuring options with the following commands, a RETURN character will retain the current value of that option. The current value is always shown to the left of the prompt, surrounded in [brackets].

Menu Item 1 -- Return to Operating System

Use this option when finished configuring the system, or when you want to cancel the configuration session and return to CP/M. The program will prompt with:

Save current configuration?

If the reply is YES to this prompt, the program will ask for a configuration filename and where to place it. If RETURN is pressed, a re-prompt occurs. If response is not YES, the operating system is entered.

*** It is strongly advised to save a configuration file for later use. Time is saved in reconfiguration if this is done.

*** If by accident the configuration is not saved, or unintentionally this menu command is typed, configuration may still be continued from where it was left off if another program has not been run.

If using ZCPR and the GO command is enabled, simply type "GO" to continue. If not using ZCPR, create a GO command by doing this:

type "SAVE 0 GO.COM"
then type "GO"

Menu Item 2 - Operating System (with ZCPR) Setup

If using ZCPR (the public domain Console Command Processor Replacement), METAL may be used to turn on or off the secure mode WHEEL byte according to the user type (see earlier configuration option). If ZCPR is used, be sure the WHEEL location is correctly set. This location may also be used with newer versions of KMD or XMODEM to toggle the STATUS location if ZCPR is not used.

There are three major versions of ZCPR. Versions 1 and 2 do not contain many of the advanced features that are in version 3. If using ZCPR version 3, several new options are available. For the system to work correctly with ZCPR3, the environment descriptor for the system MUST BE installed (with Z3INS) after using MECONFIG!

Defaults are: use ZCPR 1 or 2, and WHEEL at location 003EH.

Menu Item 3 - Edit User Types

The first question asked is for a default user type. The following tables describe each user type, and their default settings. Enter the character of the user type that a brand new caller should default to. On registration type systems, the default user type is usually set to NOOS (x), so that the person may not enter the operating system.

METAL Sysop Manual

NOTE: When using the special Sysop ADD user command, the default type no longer applies. This command currently always sets the user type to (n) or non-FOG member.

There are 8 different user types, 5 of which have predetermined (default) parameters. The user types are as follows:

Type	Char	User Types Access Allowed
SYSOP	+	is allowed complete system access and control.
SPECIAL	s	is other FOG sysops or other person in whom the sysop has absolute confidence.
non-FOG (NORMAL)	n	is the person who registered by mail but who is not a current FOG member.
unregistered (NOOS)	x	is the same as a NORMAL user, except they can't get to the Operating System. (New user default)
TWIT	X	is someone who has proven his disregard for rights of others and is not allowed on system under previously entered name or "handle". Such status is given to users who, after repeated warnings, do not meet standards for respectability. As SYSOP you are the judge!
FOG member	c	is a FOG member who has registered using the METAL APPLY command and has been confirmed by the FOG office as a FOG member.

Possible designations for other categories:

AMO officer	b	is a FOG member and also the officer of an A.M.O. group who has registered using the METAL APPLY command and has been confirmed by the FOG office as a FOG member. Sysops may alternatively use this code to designate all members of their local group.
FOG member	a	is a FOG member who has registered using the METAL APPLY command (and has been confirmed by the FOG office as a FOG member). This person is also of special assistance to the sysop.

METAL Sysop Manual

User Parameters

Parameters which may be defined for each user type follow:

<u>Parm</u>	<u>Description</u>
Maxuser	Maximum CP/M user area available to the user when in the OS. When set to ZERO, the user has no operating system access. (BYE option)
Maxdrive	Maximum drive available to the user while in the OS. (BYE option)
General Timeout	Number of minutes the user may be logged in during one session. If this value is 0, then unlimited time is allowed. This value cannot exceed 255 minutes. (Clock must be installed to use this option)
Inactivity Timeout	Number of minutes allowed before logout if the user does not type anything. If this value is set to ZERO, then the user has no access to the system. (BYE option)
Kill Msg	Flag allowing users to kill or modify messages that were not sent to or from them. This is useful if there are trusted users, who could help 'police' the BBS when twits end up leaving foul messages.
Wheel	ZCPR wheel byte status is setup with this parameter. This may also be used with newer versions of XMODEM to toggle the STATUS if ZCPR is not used. Also, if using ZCPR and the newer XMODEM, it is suggested STATUS equate be set to point to same address as ZCPR WHEEL byte address.

NOTE: The 'Master OS Privileges' prompt refers to this!! Do NOT confuse the ZCPR wheel with OS access which is defined using the MAXUSER parameter above.

Read Priv	The ability to read private messages not addressed to user is function of this option.
Enter Msg	Ability to enter a public message is controlled by this option. The user may, however, still use APPLY or COMMENTS commands to enter a private message to the Sysop. Comments are accepted when leaving the system, as well as when entering operating system (CP/M).

ZCPR3 ONLY PARAMETERS:

-
- Commands File Mask** A 'mask' value to use for sysop added alias commands (see chapter on Sysop Features and Commands).
- System File #** Defines the 'system file name' area to place a partial user name in. This must be a number from 1 to 4. The area is within the ZCPR3 Environment descriptor.
- System Segs** Each user type may have a different set of system segments to load. These may be ZCPR3 compatible files with an extension of ENV, NDR, RCP, FCP, or IOP. If any user type has a segment loaded, then the same segment TYPE should be loaded for each user. This is to prevent loose ends left behind from previous user types.
- System Registers** The ZCPR3 registers may be set or left unchanged.
- Path** The ZCPR3 path may be set (in DU form) as desired for each user type.

Be sure to first set the correct Operating System type (menu item #2) before editing user types. Failing to do so may cause unexpected results for certain user types.

METAL Sysop Manual

Default User Types

Each user type is displayed and the question asked if to edit that user. If so, answer YES and the prompts will appear for each parameter for that user. If it is desired to return to the main menu, enter Q. If anything else is entered, the next user type will be shown. The table below shows the default settings for each user type.

Char	Name	Default settings
+	SYSOP	Max User=15 Max Drive=P: Wheel=ON Timeouts: General=(none) Inactivity=30 Kill Msg=YES Post Msg=YES Read Priv=YES ZCPR3) Commands file mask=0FFFFH) Path: A\$ A0
s	SPECIAL	Max User=12 Max Drive=P: Wheel=OFF Timeouts: General=90 Inactivity=15 Kill Msg=YES Post Msg=YES Read Priv=NO ZCPR3) Commands file mask=00FFFH) Path: A\$ A0
n	NORMAL (non-FOG)	Max User=10 Max Drive=P: Wheel=OFF Timeouts: General=60 Inactivity=5 Kill Msg=NO Post Msg=YES Read Priv=NO ZCPR3) Commands file mask=000FFH) Path: A\$ A0
x	NOOS (unregistered)	Max User=0 Max Drive=xx Wheel=OFF Timeouts: General=60 Inactivity=5 Kill Msg=NO Post Msg=YES Read Priv=NO ZCPR3) Commands file mask=000FH) Path: A\$ A0
X	TWIT	Max User=0 Max Drive=xx Wheel=OFF Timeouts: General=0 (no access at all) Other values are not used.
a	USERA	These types are setup by the SYSOP.
b	USERB	
c	USERC	

The ZCPR3 Environment descriptor System file number where the user name is placed is set to #1 for all users.

METAL Sysop Manual

Menu Item 4 - Private / Public System Setup

A private system may be setup. This type of system will not allow users to automatically be added if their name is not found in the users file. An 8 character password will be required by everyone that wishes access.

The question will be asked if the system is to be private, and if so, the question asking for an access password will follow.

The default is a NON-PRIVATE system.

A special file called SYSTEM.INF is displayed if the user is refused access to a private system. Access may be refused if the system password or the user's own password is not given correctly. The file might state how to gain access to the system, or how to go about finding out his forgotten password. Once the file is displayed, the system will disconnect the caller.

Do not confuse the term "private system" with what is really a "secure public access system". The difference is that a private system disallows new callers from logging on without them giving a general system password. Secure public systems usually let people leave their name and often give the person entire access to messages.

Menu Item 5 - Files, Names and Locations

Several files are used by the message system. These files are either created by Sysop or automatically by METAL. This menu item allows changing file names. Current settings are shown of each file and prompts for new filenames occur. If a change is not desired, simply press RETURN key.

The following table lists default filenames and locations in the order MECONFIG presents them. Full descriptions of files appear in a later chapter. For information on file placement, refer to the beginning of this chapter.

File Order and Locations

u 1) 14/a:bulletin.met	u 14) 14/a:othersys.met
u 2) 14/a:welcome.met	su 15) 14/a:notes.ind
* 3) 15/a:users.log	u 16) 14/a:feature.ind
* 4) 14/a:callers.log	s 17) 15/a:meovr.mov
* 5) 15/a:counters	su 18) 14/a:commands
* 6) 15/a:messages.log	u 19) NONE.BYE
* 7) 15/a:summary	u 20) NONE.OS
su 8) 14/a:newuser.met	
* 9) 15/a:lastcalr	
su 10) 14/a:help.met	
u 11) 14/a:cpminfo.met	
u 12) 14/a:system.inf	
u 13) 14/a:appinfo.met	

* = File created automatically by METAL

s = File supplied with METAL

su = Supplied example file which the Sysop may modify or create

u = User (Sysop) created file (not supplied)

The FULL filename must be specified using following format:

uu/d:ufn.typ

where uu = the user number, d = the drive, and ufn.typ is the un-ambiguous file name.

Menu Item 6 - Maximum Tries Before Logout

This value is simply how many chances a person gets when trying to logon to the system. If they use all of their chances, they get logged off. The SYSTEM.INF file is displayed before logoff. Default is 5 attempts.

If an attempt to login as the sysop is made, it counts as two tries instead of just one. This will make it harder for those who are trying to break into the system as the sysop.

Menu Item 7 - Real Time Clock Installation

If the system has a clock which can read the time and date, the routines may be incorporated into METAL. Many common clocks have routines which can be inserted into METAL without much difficulty. Some of the more common clocks are included as .CLK files. Otherwise the routines must be created. This isn't as difficult as it sounds, since a routine called MECLKHDR.ASM is included with the message system. Its purpose is to convert any BYE version 3 or 5 clock insert into a format which METAL can use. The following are the procedures which must be followed to install a new clock.

- * Customize (port addresses, etc...) the B3C-xxxx.INS or BYE version 5 clock routine so that it's setup to work on the system.
- * Make a copy of this file and give it a name that has something to do with the type of clock the routine will be for with .ASM type (eg. PIP MET-SS1.ASM=MECLKHDR.ASM).
- * Edit the newly created file (eg. VDD MET-SS1.ASM).
- * Put the name (clock type name, such as 'System Support 1') of the clock where indicated in the comments of the file.
- * Insert the B5C-xxxx.INS routine where indicated in MECLKHDR. There are plenty of comments to help out in this file.
- * Save this file, and exit the editor.
- * Assemble the new version of this file using ASM or MAC (eg. ASM MET-SS1.AAZ or MAC MET-SS1 \$PZ SZ).
- * Use DDT, DCON or other debugger to load the file as follows:

```
DDT ; run ddt
IMET-SS1.HEX ; set file to read
R ; Read file to 204h
M204,384,100 ; move it to 100h for save
^C ; exit
SAVE 2 MET-SS1.CLK ; save new clock file
```

NOTE: This routine must NOT be over 384 bytes. The CP/M load command may NOT be used to create the .CLK file because it would pad the bytes from 100h to 203h and the file would then be unusable by MECONFIG.

This produces a file which MECONFIG may read and save permanently within METAL.

Any .CLK file will work with version 1.31 (and usually higher) of the

METAL Sysop Manual

message system, so other clock routines from other systems may be used. The clock routines (and ONLY the clock routines) are in the public domain, so use/abuse MECLKHDR.ASM as desired.

If the system has either a standard clock that was supplied, or one that was just created, simply run MECONFIG and select the clock installation item from the menu. It will ask for the name of the clock file (MET-SS1.CLK in this example) to use. When the current configuration is permanently saved the within METAL, the clock routine will also be saved.

Menu Item 8 - Bye Parameters

The BYE program may be setup to ask for the number of nulls. If BYE is setup up to do this, it must be known to METAL, or the number of nulls may be reset. By default, METAL assumes that BYE is setup NOT asking for the number of nulls.

NULLS are 'do nothing' characters sent after a return character is sent. They are used primarily for the older (and slower) printing terminals that required time for the print head to return to the first column on a line, and for newer 2400 baud modems or OZROM users. A NULL character has a value of zero.

Menu Item 9 - Location of System Sign-on Message

This is a short (80 character maximum) text string which is displayed as the system identification. It is shown to the person logging on to the system. The message may be anything desired, however it must NOT contain the string "Zilch!!!".

Menu Item 10 - Printer Log Option

If it is desired to send the callers log to the system list device, (LST:), then modify this option. Normally a callers file is generated instead of the output going to the printer. This file will no longer be created if printer log is on.

*** Remember to leave the printer on if this option is used.***

Menu Item 11 - 25th Status Line Setup

If the system console has a 25th status line, it may be used to display the current users name, status, location and time of log on.

First, the following must be known:

- o The character sequence to move cursor to the 25th line. The setup expects the sequences to be in HEX byte values.
- o The character sequence to return the cursor to continue from its prior location.

There are two methods for using the status line. The first requires the following:

- o The console DATA OUTPUT port.

- o The console OUTPUT STATUS port.
- o The bit-mask that checks for TXRDY (the mask gets ANDed with what is read from the output status port, and if it's not 0, then a character is sent to the terminal).

For this method, simply enter the information above when asked.

The second method requires a little more work. It may be used when the above information is not available, or when the computer uses a memory mapped display (and still allows a character sequence to be sent to its video driver, to use the 25th line). There are distinct disadvantages to this method, since the following steps must be performed after booting up on the system disk. No other system disk may be used to run the message system (it will work on any disks that are sysgen/gensys, etc., with the same operating system on it).

Bootup on the disk with the CP/M system that is to be used when the BBS is setup. Then using DDT, follow the steps below (Bold face indicates what to type):

```

A)DDT                ; run ddt or similar program
  DDT VERSION X.X
-L0                  ; list code at address 0000
0000 JMP E803        ; this is a sample.. the address found
0003...              ; in the first jump instruction should
                      ; be noted (it's underlined here).
-LE80C               ; Now, list code at the address
                      ; created by taking the first two digits
                      ; of JMP instruction above, and append
                      ; the digits 0C to them (E8 + 0C=E80C).
E80C JMP F554        ; Write down the address found in this
E80F...              ; jump instruction (F554 in this example).
~C                   ; Exit DDT, the hard part is over.
  
```

Now, with the number just written down, run MECONFIG, and select the 25th line menu option. When asked for the status port and status mask values, set them to 0 (zero). For the data port, enter the address written down from the above sequence.

*** Remember, this sequence needs to be followed every time CP/M system is changed (i.e change ZCPR, BIOS, MOVCPM, etc..)!

Kaypro users may use the last method to gain 25th line access, follow the steps above, and use the following undocumented sequences to get to the 25th line:

1B 42 36 1B 42 37 1B 3D 38 20 (ALL IN HEX)

And the sequence to return is:

0D 0A 1B 43 36 0D 0A (ALL IN HEX)

Older Kaypro systems may not support these features, and they are given here as an example. They have been tested, but no guarantee is made as to the function of the sequences on these systems.

METAL Sysop Manual

Menu Item 12 - Sysop Name and Password

As System Operator, you have a special 'built-in' password, just in case someone gets to the users file and finds out your other password. This is strictly a backup security measure. You must set the SYSOP name to your name, then set a new password, of up to 8 characters, that is different from your USERS.LOG file password. Your name will be capitalized if it is entered in all lower case.

Menu Item 13 - Message Base Options Setup

Several limits are placed on the number of active messages, the number of combined active and deleted messages, line length, and maximum number of lines allowed in a message. Current defaults of each variable are displayed and changes requested.

Defaults:

Maximum active messages is 200 (value must be ≤ 2000).

* This limits the number of messages that are 'active' on the system (active=haven't been deleted). Usually the value is a safety measure to avoid filling up the disk entirely.

Maximum combined active and deleted messages is 300 (value must be ≤ 3000 and greater than the maximum active messages).

* This limits the total active and deleted messages allowed. This is a better method to limit disk storage problems, since it includes all messages that are currently on disk in its value. The primary purpose of this is to allow METAL to purge messages, and not run out of memory in doing it.

Maximum length of a message line default is 52 (must be ≤ 128)

Maximum number of lines a message may contain default is 50 (must be ≤ 250). Message text space is allocated dynamically (while the lines of text are being entered), and as such, the system may run out of memory before the person is allowed to enter the maximum # of lines specified here.

Each message will take approximately $384 + (\text{chars in msg text})$ bytes of disk storage. Additionally a block of memory is allocated which is equal to $8 * (\text{max total msgs})$ bytes.

Menu Item 14 - Save Current Settings in Configuration File

The changes may be saved to a file at any time. This allows you to resume after the save or keep several different configurations on-hand for different purposes. When saving, the system will prompt for a filename, and it will default to the last drive and user area accessed if none is given, so be sure to specify uu/d:filename. To restore the file at a later date, use the recall configuration file command (see the next Item).

Menu Item 15 - Recall Configuration File

If MECONFIG has been run before, and the configuration saved in a file (either thru a menu option, or when exiting to CP/M) that configuration may recalled with this command. Specify the filename in which the configuration was saved.

Note: Currently different versions of METAL contain different formats of configuration files. When a new version of METAL is received, the configuration process will have to be repeated from the beginning. The old configuration file will not work correctly. MECONFIG will not load a configuration file which will not work under the version of the message system for which MECONFIG is supplied.

Menu Item 16 - Make Configuration Permanent

An area is set aside in METAL and MECONFIG which contains only options. This area is the same in both files. MECONFIG is used to setup the appropriate configuration. The configuration may be saved in a file that can be loaded by MECONFIG later. To make any of the changed options permanent, the new configuration must saved in METAL. The string "Zilch!!!" must not be added anywhere in METAL or MECONFIG; it is the string used to find the location of the configuration area.

The program will prompt for a file name where the current configuration, should be saved. This should be either METAL or MECONFIG. Specify the full file location within the name, but the file type is assumed to be .COM if the type is left unspecified.

****** Once the program METAL.COM has been configured, run MENTR and login under your name. The Sysop must be the first person to login to the message system. (See Special Features and Commands section in Sysop Maintenance chapter for details.)

**** Note - THIS COMMAND MUST BE USED TO COMPLETE THE SETUP PROCESS. NONE OF THE CONFIGURATION CHANGES WILL BE PUT INTO OPERATION UNTIL THE APPROPRIATE FILES (USUALLY JUST METAL) HAVE BEEN "PERMANENTLY" SETUP WITH THIS COMMAND *****

If running ZCPR3, be sure to use the Z3INS utility to install ZCPR3 specific addresses within METAL. If this is not done, certain features will be unavailable. You will receive a warning message when running METAL that Z3INS has not been used. (an example: Z3INS SYS METAL.COM).

Custom Initialization

It is often desirable to initialize sections of the system after someone logs in. Even more important is the ability to change system defaults, and messages based upon the user's status. The public domain file MEINIT.ASM is the basis for such a routine. Read the instructions in this file for installation procedures. A listing is shown below.

An excellent example of a custom initialization routine is the public domain MEINITB5.ASM routine which is included on the distribution disk (special thanks to Kevin Murphy for allowing us to include it). It is for use with BYE version 5xx, and sets the amount of time allowed on the system based upon the user type. It will also setup a special function of BYE 5 which allows the Sysop to type a ^W at any point, to see the name and status of the currently logged on user.

The following is the bare MEINIT file to be used as a basis for your custom routines.

Listing of MEINIT.ASM

```

;
; File: MEINIT.ASM
;
; This file can be used as a starting point for an
; initialization routine file Metal/METAL versions 1.31 and
; later...
;
; This is an entirely optional insert file.
;
; An initialization routine is handy for setting up other remote
; access system programs (eg. bye). The following information is
; passed to this routine from the message system:
;
; . Whether or not BYE is active
; . a pointer to the 'user structure' which contains the
;   user name, where they are from, etc..
; . a pointer to the 'user status' parameter block of the
;   current user. This will give things like the
;   max amount of time allowed on the system, max user,
;   max drive, etc..
; The init routine is called after the user name and password
; have been verified by the system.
;
; *** This routine must not exceed 251 bytes in length !! ***
;                                     ===
;
; org      384h          ; fixed location to put it at..
;
; db       0ffh         ; flag to tell message system
;                                     ; init routine is installed...
bye: db       00         ; passed flag if bye is active..
user: dw    0000        ; pointer to user structure
status: dw  0000        ; pointer to user status info
; db       00,00,00,00,00,00 ; reserved for later..

; The following are offsets from 'user' above

```

METAL Sysop Manual

```

unumber equ 0 ; user number (also seek pos into users file)
           ; (2 bytes)
ufirst  equ 2 ; first name of user      (0 terminated string)
ulast   equ 17; last name of user       (0 terminated string)
upass   equ 38; password                 (0 terminated string)
update  equ 47; date last logged on     (0 terminated string)
utime   equ 56; time last logged on     (0 terminated string)
ucity   equ 65; city of user            (0 terminated string)
ulastrd equ 94; message at last login   (2 bytes)
ustatus equ 96; user status character (+snXxabc) (1 byte)
ujmpos  equ 99; auto jump to OS on login? ('1'=yes) (1 byte)
ubell   equ 101; bell enabled? ('1'=yes) (1 byte)
urp     equ 102; auto read on login? ('1'=yes) (1 byte)
unulls  equ 104; nulls                  (1 byte)
uheight equ 105; terminal height        (1 byte)
uwidth  equ 106; terminal width         (1 byte)
uupload equ 109; upload file count      (2 byte) --not used yet-
udnload equ 111; download file count    (2 byte) --not used yet-
umins   equ 113; minutes on today       (1 byte) --not used yet-
ucalls  equ 117; unsigned number of calls (2 byte)
udef    equ 124; You can actually use these locs.. (124-127)

```

; The following offsets are from 'status' above...

```

sstatus equ 0 ; status char (+snXxabc)
smaxdrv equ 1 ; max drive
smaxusr equ 2 ; max user
sacttout equ 3 ; activity timeout in mins (timeout if
                ; not typing)
skillflg equ 4 ; kill messages flag..
szcprflg equ 5 ; wheel privs?
sreadprv equ 6 ; read private msgs?
spostmsg equ 7 ; allowed to post messages?
stimeout equ 8 ; logoff timeout in minutes
sz3flags equ 9 ; 2 byte zcpr3 commands file mask

```

```

; *****
; * Insert your routine here.. IT MUST PRESERVE REGISTERS *
;   V V V V V V V V V V V

```

```

;
;

```

```

ret ; simple return ends routine
; Last byte in routine must not be at an address over 047FH...
; END OF THIS ROUTINE

```

Files Used by Message Program

Several files are created and used by the system. None of them are REQUIRED to be created in advance; however, there are several files that you may wish to create, or edit to your suit your needs.

In the descriptions that follow, the type of file is one of the following:

- Sysop Created** . Unsupplied, may be created as desired
- System** Supplied with, or created by system
- Customization** . Used as basis for customizing the system

The Status is either private for files which should NOT be available to the public, or public for files which the public may access.

File: WELCOME.MET Type: Sysop Created Status: Public

This file is displayed when the user logs onto the system and before he enters his password. Sometimes BYE is used to display this file, but putting it here lets BYE take up less room in your TPA. It may contain any login message you choose. File is created with a standard text editor.

File: BULLETIN.MET Type: Sysop Created Status: Public

This file is displayed when the user logs onto the system but after he enters his password. Usually bulletins concerning the system are found in this file; however, it may contain any login message you choose. File is created with a standard text editor.

File: CALLERS.LOG Type: System (text) Status: Public

This file contains System Callers Log if not being sent to the printer. The 'Callers' and 'Z' commands will show this file to registered users. Information contained in the file include the user name, city, and the time/date the person logged on.

File: COMMANDS Type: Sysop Created Status: *Private*

This file is used in ZCPR3 systems to add commands to the message system. Multiple commands on a line, and the message buffer area MUST be installed in order for commands in the commands file to work. The file is a standard text file with the following format: <Z3 cmd mask> <cmd name> <parm #> <.COM file>

- <Z3 cmd mask> is a hex number tested against that of the current user. If the test fails, the user can't issue this command.
- <cmd name> is the name of the command (up to 9 character long).
- <parm #> is the number of parms passed to the program.
- <.COM file> is the file which gets run if the user issues this command. The .COM extension MUST be left OFF!!

For more information, see the Sysop features and commands section.

METAL Sysop Manual

File: APPINFO.MET Type: System (text) Status: *Private*

This file contains instructions for leaving the correct information for the APPLY command. It is displayed after the APPLY command is typed, and before the user can leave a **** New User Application **** message. File is created with a standard text editor.

File: COUNTERS Type: System (text) Status: *Private*

This file is created by the message system automatically. It contains next system message number, number of active messages, and number of previous calls. If a clock is not being used, the date will be kept here for convenient updating.

File: FEATURE.IND Type: Sysop Created Status: *Private*

This is an index file for featured articles (displayed with either the 'features' or 'articles' command). The file has the following format:

```
Columns:            19            End of line....
1...v....v....v...V.....
Line 1            ;MENU name
Rest of           uu/d:filename.typ <description>
lines            uu/d:filename.typ <description>
...            ....

uu/d:filename.typ is the file to display if selected
<description> is a one line decription of the file

';' at begining of line for comments
'*' at begining of lines for extra text to display
```

For example:

```
* General Interest Features
*
12/b:mytext.txt    My text file, oh boy!
11/a:generalt.ext   Just some text.
*
* Special Interest Features
*
14/c:newstuff.c    News on new C stuff!
```

For more information, see the chapter on Sysop features and commands.

*** SPECIAL NOTE ***

Make sure you actually have a file in the user area and drive specified in the .ind file, or unpredictable results may occur! If you delete a file from your disk, make sure you delete the name in the .ind file as well.

*** *** *** ***

METAL Sysop Manual

File: HELP.MET **Type: Sysop Created** **Status: Public**

This is the system command help file. It is displayed in response to the HELP (or ?) command. Several sample help files are included on the distribution disk. You may use any of them instead of starting from scratch.

File: LASTCALR **Type: System** **Status: *Private***

The LASTCALR file contains information about the current, or last logged in caller. It includes the name, time and date of login, and a pointer to further information contained in the USERS file. The MENTER overlay creates this file when somebody first enters the system and METAL reads the file thereafter.

File: MECLKHDR.ASM **Type: Customization** **Status: Public**

This is a public domain header file for installing a clock in the message system. If a clock routine for you clock is not supplied, you must use this file as a basis for your own clock routine. If there is a BYE clock insert for your clock, it may be inserted into this file to expediate clock setup. For more information read the configuration section of this document (under clock installation).

File: MEINIT.ASM **Type: Customization** **Status: Public**

This bare initialization routine may be installed within METAL to allow for custom setup routines. It is called immediately after the person has logged on (after the name and password have been entered). A common use of this routine is to setup BYE parameters based upon the user type (for an example of this, check appendix C). More information on the use of this file can be found at the end of the configuration chapter.

File: MEOVR.MOV **Type: System** **Status: *Private***

This is the main overlay file containing most of the METAL commands. It MUST be present for METAL to do anything. An error message is printed if the file can not be found.

File: MESSAGES.LOG **Type: System** **Status: *Private***

This is the message file itself. It contains all messages handled including header and text for each message entered. The message text itself is stored in text editor-like format, with each line ending in a Carriage Return/Linefeed sequence. The message header always starts on a 128-byte record boundary, thus up to 127 bytes of disk storage may be wasted in one message. This is not a large problem however, since typically no more than 64 bytes are not used. Most other message systems make similar trade-offs, such as allocating 64 characters for every line, regardless of how long it actually is.

Note, when messages are 'killed', the message remains in this file

METAL Sysop Manual

until you use PURGE to remove them.

See SUMMARY file for information on the format of the message header.

File: NEWUSER.MET Type: Sysop Created Status: Public

This file is shown to the user the first time he logs onto the system. You can put anything you like into it. As before, this is a standard text file. A sample of this file is distributed with METAL.

File: NONE.OS Type: Customization Status: *Private*

If the name of this file is changed, then the file which it is changed to is loaded and executed when the person exits to the Operating System. It MUST contain a valid com file name and full file type (eg. 0/a:sd.com). If you do not wish to run a com file on exit, make sure that this file is named EXACTLY as it was to begin with (NONE.OS upper case, no drive spec).

File: NONE.BYE Type: Customization Status: *Private*

This is the same as NONE.OS except the file is loaded and run when the user exits the system entirely (a 'BYE' or 'G' command was entered from the message system). This may in fact load BYE if you wish. Since BYE86 works differently on 16 bit CP/M 8/16 systems, it is necessary to exit in this manner on them.

File: NOTES.IND Type: Sysop Created Status: *Private*

This is the index file for the 'notes' command. Its contents are like the FEATURE.IND file in every way. See description of FEATURE.IND for more info.

File: CPMINFO.MET Type: Sysop Created Status: Public

This file is displayed when a novice enters the Operating System. Usually it contains a few OS hints and system dependent notes. A sample OS Info file is included on the distribution disk.

File: SUMMARY Type: System Status: *Private*

This is a message summary file. It contains one record per message, which contains a message header that is identical to the message header used in the message file.

File: APPINFO.MET Type: Sysop Created Status: Public

This is a file that contains information for the caller using the APPLY command. It is displayed just before the user gets a chance to enter a message to the sysop with his APPLY information.

Format of the message header

Bytes	Function
0-1	Contain the message number.
2-3	Contains the CP/M record of the message header in the message file.
4-5	Contain the messages' 'parent' if this is a reply to a message. If this is not a reply to another message then this is 0.
6-7	Message number of the first reply to this message. Zero if there are none.
8-43	This is the receiver of the message. Both first and last names together with a space in-between them.
44-57	This is the first name of who sent the message.
58-77	This is the last name of the person who sent the message.
78	This is a message status character. It will be 'n' for a normal message, 'p' for a private message, and 'x' for a killed message.
79-80	Number of lines in the message.
81-88	Date the message was entered.
89-96	Time message was entered.
97-127	Message topic.

Note: 16-bit numbers are stored in standard low byte/high byte sequence. Character values are NULL terminated.

File: SYSTEM.INF Type: Sysop Created Status: Public

A text file containing anything you would like displayed to someone who unsuccessfully tried to gain access to your system. This file is used in a PRIVATE system for callers who don't know the system password, and in a PUBLIC system for callers who can't log on after numerous tries (set with MECONFIG) at their password.

METAL Sysop Manual

File: USERS.LOG Type: System Status: *Private*

This is the users file. It contains users names, locations, passwords, and parameters. Each user takes one CP/M record (128 bytes). The format is as follows:

Bytes	Purpose
0-1	User number.
2-16	Users first name.
17-37	Users last name.
38-46	Users password.
47-55	Date last logged on.
56-64	Time last logged on.
65-93	City user is calling from.
94-95	Last read message (high message at the last logon)
96	User status: '+'=Sysop, 's'=Special, 'n'=non-FOG, 'x'=new user, 'X'=Twit, 'c'=FOG member, 'b' and 'c'=sysop defined types.
97	Internal user type flag, derived from user status above.
98	Upper/Lower case flag '1'=upper only, '0'=upper/lower.
99	Auto jump to OS instead of BBS. '1'=go to the BBS.
100	Expert user? '1'=yes.
101	Bell on? '1'=yes.
102	Auto msg read at logon? '1'=yes.
103	Reserved.
104	Number of nulls.
105	Terminal height. 0=no pause.
106	Terminal width.
107-108	Future TCAP (Z-System) pointer entry.
109-110	Upload count.
111-112	Download count.
113-114	Future time on system count (total minutes for the day).

METAL Sysop Manual

- 115-116 Reserved.
- 117-118 Number of calls user has made.
- 119-123 Reserved.
- 124-127 User available area, you may use this in your own programs.

Note: 16-bit numbers are stored in standard low byte-high byte sequence. Character values are NULL terminated.

File: WELCOME.MET Type: Sysop Created Status: Public

This file is displayed by METAL when entering the system. The message system may also print this at the users request. It should be system introductory text.

Sysop Maintenance

Several Commands are added to METAL for people with Sysop status. Those relating to message or users file maintenance are described below.

The only Sysop maintenance necessary is purging of old messages (those which have been 'Killed'). This should be done a few times a month, or as often as required by your system, since old messages will still take up space on the disk until after you have done so. Please refer to the "purge" command below. Your message base must never exceed 300 (default and changed with MECONFIG.COM) total active and 'killed' messages; METAL is not able to purge messages if this limit is exceeded.

Maintenance Commands

The following commands may only be used by someone with Sysop status on the system. Accepted abbreviations of commands are underlined.

Add command

This command allows the sysop to add new users to the system. Its most common use is for private or registered access systems where the Sysop wishes complete control over who may use the system. Functionally this command works like a stripped down initial login sequence, where the name, city, and password are asked for.

NOTE: The new user created with this command ALWAYS is given a user status of NORMAL, regardless of the default user status as described in the configuration section of the manual. Use the EDit command to change the status of a user added with this command. (see next item)

Edit user file command

This command places you into a mode by which you may edit the user file. Once entering, you are shown the first user in the users file, this should be you! It will display your user number, name, status, date last called and the number of times you've called. From this point, you may issue one of the following commands:

- ? Display quick help information on commands.

- (space) or
(return) Advance to next user in the users file.

- (backspace) or
b or - Backup one user in users file. You may NOT backup past the first user. Use the 'Z' command to quickly get to the last user.

- (number) Advance to specified user number. A return or space character will perform the operation. If another character is typed, the operation will be aborted.

METAL Sysop Manual

- a All users display. This option switches between displaying all possible users of the system (including recoverable deleted users), and displaying only the currently active users. To use the 'U' command to undelete a user, this mode has to be set to display all users.
- d Delete the current user. The user may be restored with the 'U' command below.
- e Edit user. This command allows you to change the user name, city, password, and status. You are prompted with the old values of each, and may enter new ones, or leave them as they are.
- f Find user by name. You are prompted for a search string which may be the full or partial name of the user.
- i More Information. This command displays the city and password of the current user. They are not shown in the edit mode current user prompt.
- m Mass user function (delete). This command deletes users that fall under a selected criteria. To make use of this command, you must first use the 'T' command to Tag a set of users. This function begins with the current user, NOT from the first user in the file. You may select an automatic deletion of all selected users, or a prompted mode where you will be asked for verification before each user to be deleted.
- t Tag users. This command selects users you wish to delete with the 'M'ass user delete function.

Selections are made by:

Date: You may choose users who last called on, before or after a specified date. The date entered should be in mm/dd/yy format. If it is preceeded with a '<' (less than) character, selection will be made of users last calling before that date. A '>' (greater than) character preceeding the date will select those calling after the date. Otherwise any user calling on the specified date will be selected. Note: before and after operators are EXCLUSIVE.

Examples: 10/31/85 this date
>01/01/85 after this date
<08/15/85 before this date

Status: Selection may also be done based on the user's status on the system. You enter the status character(s) of all user types you wish to be selected. If the status character(s) is preceded by an '!' (exclamation) character, all user types except those listed are selected.

Examples: snx special, non-FOG and new user
!xX all but no user and TWIT
abc a, b, and c (FOG member) users

calls: You may select users based upon how many calls they have made to the system. A '<' (less than) character preceding the number indicates users who've called less than that many times. Similarly, a '>' (greater than) character preceding the number selects users calling more than that many times. A number alone selects users calling exactly that many times.

Examples: <4 less than four calls
>100 more than one hundred calls
1 one time callers

- u** Undelete this user. The 'All users display' toggle MUST be ON for this to work ('A' command).
- x** Exit user edit mode. This returns you to the main Message system command prompt.
- z** Go to the last user in the users file.

Purge messages command

This is the most important Sysop command in METAL. It is used to free up disk space currently being occupied by 'killed' messages.

When a message is deleted, only a few pointers and flags are changed within the message and summary files indicating that the message is no longer active. The message still uses up file space in the message and summary files. This command creates new summary and message files without the 'killed' messages, from the old summary/message files.

You should use this command fairly frequently to keep the message and summary files from getting too large. Most people find that purging messages every week or so is enough. Before doing the purge be sure that you have enough disk space to save new copies of the message, summary and counters files. The reason for this is that a backup is made of the current files before creating new ones. You will be warned if you do not have at least double the amount of disk space the message/summary and counters files take up. The new files will never take up more space than the original files, and often are quite a bit smaller. Therefore, a warning does not necessarily mean that you will not have space for a purge, it is just a reminder that you may be cutting things close (you might want to purge the messages to another disk that you are sure has the room, if you are unsure).

The files may be purged with results on either the same drive (and user area) as the originals, or on another. You will be given a chance, both

before and after the purge, to swap disks.

If you specify a drive/user area for the new files, there must be enough room for them in that area of your system. The new files will be called MESSAGES, SUMMARY and COUNTERS in the specified area. **Never** specify a new drive/user area that already contains these files! Chances are that you would lose both files, and have to recover from older versions of the message base.

WARNING: If you purge messages to a drive and user area different from the current one, you **MUST** exit the message system, and copy the created files back to the default message/summary and counters file locations. **DO NOT** try to read or enter messages directly after purging to another drive or user area!!

If the purge is made to the same drive and user area as the current files, the old files will be renamed MESSAGES.BAK, SUMMARY.BAK and COUNTERS.BAK. The new files will be in place and ready to use immediately following the purge. You will not have to exit the message system before entering or reading messages.

You may recover from certain types of errors or accidents by first erasing (remember to always make and keep backups of all files!) the SUMMARY file. Then, enter METAL, and without doing anything else, do a message purge. You will notice that when the system builds the summary (when it is checking for mail), it will seem terribly slow compared to the normal method. This is because it is scanning each message, and reading through the WHOLE message file to build a table in memory that be used in the purge function. If the errors you are encountering are caused by the summary file, or possibly bad records in the message file, this is the procedure you should follow to try and correct the problem. If bad message headers are found, they will be noted, and avoided during the purge function.

Print users file command

This command searches for and prints to the system LST: device, the user specified. If a user number is given, it will start printing users from that number. If an alphabetic string is entered, then it will search for and print any users who have that string in their name OR city/state. This command functions exactly like the List users command, except that output is sent to the printer. The listing will also be shown on the screen, and the page pause will be turned off for the duration of the command.

Special Sysop Features and Commands

As a Sysop, you have more commands available to you than others who use the message system. These commands and options are described below.

Sysop Name, Password, and Login

There is a 'built-in' Sysop name and password (setup via MECONFIG) which should match your user-id. You must be the first user to login to the system, giving you user number 1. When entering the system, either give your user name, or the number 1, since you will be user number one. You will then be prompted for your internal sysop password, followed by your users file password.

The first command you should give is the '!' (exclamation) command, which will again ask for the internal sysop password (for more information on this command, see below). This will give you Sysop status, and you should follow by using the 'U' command to save your status permanently in the users file (more information on the 'U' command can be found in the users guide section of this manual). The reason for the differences in logging on as the sysop (especially the first time) is to provide better security.

Note: You may not use the standard '1<user-pass>' format of entering the system, you must instead use the format:

1; <Sysop-pass> ; <user-pass>

<Sysop-pass> refers to the built-in Sysop password.

<user-pass> refers to the password in the users file.

! (exclamation mark) command

This command may be used by anyone, but should be known only to the Sysop. It enables or disables the Sysop status. If the Sysop status is off, you are prompted (with the message "Prove it!") for the internal sysop password. The password will not be shown on the screen as you type it. If you already have Sysop status set, it will not ask for a password, and will return the user to the previous status. This is helpful when you have a trusted user online and would like to get to the OS when you haven't given the user access to the OS yet. It comes in handy other places too, you will come across them on your own. Note: you must issue this command yourself the first time you logon, and save the status with the 'User' command. This prevents the off chance that you forget to login as the first user, and someone else gets Sysop access to the system (era, save, ren, etc. commands in CP/M).

Command Extensions for the Sysop

Besides having new commands available as the Sysop, you also have many more options available to you on public commands. This section explains these extras.

Printing

You may use ^P while within METAL to turn on/off output to the Operating system LST: device (printer). This control functions only while in METAL, upon exit output will again be to the display only.

List and Print

These commands will display the users' status as well as the standard information (user number, name, etc..).

Callers and Z

After displaying the callers file with these commands, you are asked if you wish to delete the file. This command is not allowed if the printer log option is enabled.

Selective Read Commands

The following additional options are available:

- D** Delete sender of the previous message. Helpful if someone left a message which showed they shouldn't be allowed on the system.
- E** Edit the sender of the previous message. This allows you to easily edit a users' name or status while reading messages.
- K** Kill previous message (last message header shown).
- M** Modify the previous message header. You may change the subject, sender, recipient, or date.
- P** Print previous message to the printer (LST: device).
- W** Write previous message to a disk file. You may also write over or append to a file that already exists.

Modify Command

You may change the sender, recipient, subject, date and status (private/public) of any message on the system with this command.

Enter Message

You may transfer text from a file to a message you are entering with the Enter message command. To do so, select the 'F'ile option at the editor prompt. The text is placed at the end of the current text buffer. A disk reset is performed before the file you wish to read is opened, allowing you to change disks.

METAL Sysop Manual

Indirect inclusion of a text file may also be performed. To use this feature you must include a line within the message you are entering, which begins with a '<' followed by a file name. The file will be read and displayed ONLY during a message read. There are many uses for this, you may create messages whose text can be easily changed by simply changing the text file which the message points to. You may also use it to display messages longer than it is possible to enter. An example of file indirection follows:

```
1: Hello folks, welcome to my new system.
2:
3: Please read the following system rules, then take
4: a look around the system.    Enjoy!
5: @/a:system.rul
6:
```

There is no limit to the number of indirect files used in a message (other than the line/memory limits).

Sysop Status Change from Operating System

You may quickly change your status on the system if you are in the operating system by issuing the command: **METAL !** You are prompted for the internal Sysop password. If you enter it correctly, all Sysop defaults and values will be set. THESE WILL REMAIN SET UNTIL THE CALLER LOGS OFF!

Custom Files

You may customize several files that are shown to the user at various points in the message system. All but a few of these are simple text files, and are described in the section on files (they are the files marked Sysop Created). There are a few exceptions, however, which follow.

Features and Notes

These files are indexes to other files which are displayed in the same manner as other text files. The Features and Articles commands make use of the file FEATURE.IND, and the Notes command uses NOTES.IND. After the command is entered, you are shown a menu of file descriptions, from which you may pick the one you wish to read. Any one of the files may be another index file pointing to still more files. This allows a tree structured set of files to be setup.

The format of an index file is as follows:

```
Columns:          19          End of line....
1...v....v....v...V.....
Line 1           ;MENU name
Rest of          uu/d:filename.typ (description)
lines           uu/d:filename.typ (description)
...            ....
```


Line 1: Should have the following: `;MENU name`
 Where 'name' is the name of the menu, if not specified, it will be called "main". This is shown at the menu prompt, next to the nesting level number.

Rest of lines: These lines contain menu information in the the following format:

chars 1-17: File Name (uu/d:filename.typ)
chars 19-end of line: File description printed in menu

The file name points to a text file which will be displayed when the user selects that menu item. In addition, if the text file has `;MENU name` in the first line, it will be considered another menu which will be displayed. The nesting of menus in this fashion is limited by the amount of free memory in your system.

The file description is a simple one line description of the text file to be printed. It is displayed in a numbered menu, which the user selects from.

Each of these lines must be at least 19 characters long. If one is not, it will signal the end of file. You may have a maximum of 25 filename/description lines in each index file.

You may add comments in this file by merely starting each comment line with a `;`.

You may display text in the menu by placing an asterisk (*) as the first character in the line, followed by the text to be shown. It will show up within the menu in the same order as it is in the file.

Sample Index Files

The following example index file would allow the bulletins, cpminfo, an advertisement for METAL, and an article on Satellites to be displayed using the 'articles' or 'features' command. It also divides the menu into two sections, General, and Special Interest.

FILENAME: FEATURE.IND

	Filename 1-17	File description 19-(end of line)
Column:	V.....V	V.....(etc)
Text:	<code>;MENU Features</code>	
	* General Topics	
	*	
	<code>11/A:BULLETIN.DOC</code>	The latest bulletins.
	<code>15/B:OSINFO</code>	Info on using operating system.
	<code>0/A:METAL.EI</code>	METAL advertisement.
	*	
	* Special Interest	
	*	
	<code>2/C:SATELLI</code>	Interesting news on satellites.
	<code>; The next file points to another index file...</code>	
	<code>14/A:LANGUAGE.IND</code>	Language SIG menu.
	<code>; That's it for this sample..</code>	

The LANGUAGE.IND file might look like:

```
;MENU language sig
*           Language SIG
*
@/B:C.SIG           "C"
@/B:PASCAL.SIG     Pascal
@/B:GERMAN.SIG     German (have nowhere else to put it!)
; End of this sample..
```

It's that simple!

*** SPECIAL NOTE ***

Make sure the file you specify is actually on the disk! Unpredictable things may happen otherwise. When you delete a file from the disk, make sure you delete the filename in the .ind file as well!

*** *** *** ***

NONE.OS and NONE.BYE

These files don't exist. If they are left as they are (which you will do in most cases), they indicate that you do NOT wish to run a .COM file when you exit to the operating system or from the system completely (bye). If their name is changed, the message system will attempt to load and execute the specified file.

For example, if you wish to run SD.COM (super directory) when the person enters the operating system, you would change NONE.OS to something like @/A:SD.COM. To run a file when the person leaves the system with 'BYE' or 'G', change the NONE.BYE name. (NONE.OS is changed to MEXIT.COM when using the MEXIT program to update the KMD program counters.)

ZCPR3 Only Features

The following features are available only if you are using the ZCPR3 Console Command Processor Replacement program.

Before using any of these features, be sure to first use MECONFIG and specify ZCPR3 as the Operating system type. You must then use Z3INS (ZCPR3 environment descriptor installer) to insert the environment descriptor information into METAL. For example: Z3INS SYS METAL It will not let you do this if you have not correctly configured METAL.

Adding System Commands

You may easily add any number of commands to the system by setting up a special COMMANDS file. The format of the file is:

<Z3 cmd mask> <cmd name> <parm #> <.COM file>

<Z3 cmd mask> is a 4 digit Hex number which is ANDed with the ZCPR3 Command mask of the user type (See the user type configuration setup section). If the result of the AND operation is NOT zero, then the user is able to issue that command. Otherwise the standard unrecognized command error message is shown.

<cmd name> is the name of the command which the user types into the message system. This may be any name you wish to give a command, but should be less than 9 characters long. Commands having the same name as built-in commands are ignored.

<parm #> is the number zero if there are to be no parameters passed to command com file, otherwise it should indicate how many parameters are normally passed. The parameters are everything on the line, seperated by spaces, which the user types after the command name itself.

<.COM file> is the name of the com file which contains the new command. This can be any standard executable com file (eg. SD, LTYPE, etc..). *** The .COM extension must be left OFF of this name, it is added internally. The amount of TPA available to the program will be around 30k.

If the user area and drive are not specified, the file will be looked for in 0/A:

Once a command com file is executed, the user returns to the message system unaware that they've actually exited the message system to run another program.

You must have the following ZCPR3 options enabled:

- * Multiple commands on a line
- * System Paths
- * Message buffer area

Sample COMMANDS File

File text:	Comments (not in file)
-----	-----
F000 SHOW 0 15/A:SHOW	Sysop only command with no parms
FF00 CAPTURE 1 14/B:CAP123	Sysop or Special user Capture command. Passes parameter(s).
FFFF DIR 1 SD	Public DIR command. (file in 0/A:)

User Type Initialization

The following parameters may be setup for each user type. They are controlled with the MECONFIG Edit User Types menu item.

Commands File Mask A 'mask' value to use for sysop added commands. This value is ANDed with the value in the COMMANDS file (described earlier) to see if the user has the ability to use the particular command. If the result of the AND operation is not zero, then the user may issue the command (See the description of the COMMANDS file).

System File # Defines the 'system file name' area to place a partial user name in. This must be a number from 1 to 4. The area is within the ZCPR3 Environment descriptor.

System Segments Each user type may have a different set of system segments to load. These are ZCPR3 files with extensions of ENV, NDR, RCP, FCP, or IOP. If any user type has a segment loaded, then the same segment **type** (ENV, etc..) should be loaded for each user type. This is to prevent loose ends left behind from previous user types.

System Registers The ZCPR3 registers may be set to values or left unchanged.

System Path The ZCPR3 path may be set (in DU form) as desired for each user type.

METAL Sysop Manual

Quick Command Reference

Articles	- Display system ARTICLES/FEATURES menu
APply	- Enter private message to Sysop
Bulletins	- Display system bulletins
BYE	- Exit system without leaving private comments
CALLers	- Display recent callers
CHat	- Chat with Sysop (after calling)
COmment	- Enter a private message to Sysop (like APply)
Cpm	- Enter CP/M and optionally leave private message to Sysop
Enter	- Enter a message
EXpert	- Toggle expert/novice status
Features	- Display FEATURES/ARTICLES menu (same as Articles)
Goodbye	- Leave the system, optionally leaving private comments to the Sysop
Help	- Display short command list (like this one)
Jump	- Jump to OS, without leaving private comments
Kill	- Kill (delete, remove) message
List	- List users of system
Messages?	- Display list of Messages addressed to you
MOdify	- Modify the header of a message (subject)
Notes	- Display NOTES menu
Othersys	- Display Other remote BBS systems list
Quicksum	- Give a Quick summary of messages (subject only)
Read	- Read messages
REPLY	- Reply to an existing message
REStore	- Restore a deleted (killed) message
RNs or RP	- Read New messages Selectively
RRS	- Read messages in Reverse order Selectively
RS	- Read messages Selectively (forward order)
Summary	- Display a Summary of messages
STats	- Display message/user Statistics
Time	- Shows the time and date, and how long you've been online
UNkill	- Unkill a killed (deleted) message
Userparms	- Change/Display User parameters
Welcome	- Display Welcome message (one active at login)
WHO	- Display user name
eXpert	- Toggle expert/novice status
Yell	- Yell for Sysop (same as CHat)
Z	- Display recent callers
#	- Display message/user statistics (same as STats)
?	- Display short command list
-	- Display user name
/	- Ignore rest of line (comment line)
//	- Enter chat mode without calling
----- Sysop Commands -----	
ADd	- Add a user to the system
EDit	- Enter edit users file mode
PRint	- List users file to the printer
PURge	- Purge message file (perm. delete killed msgs)
!	- Toggle Sysop status (requires password)

*** Bold upper case characters are acceptable abbreviations ***