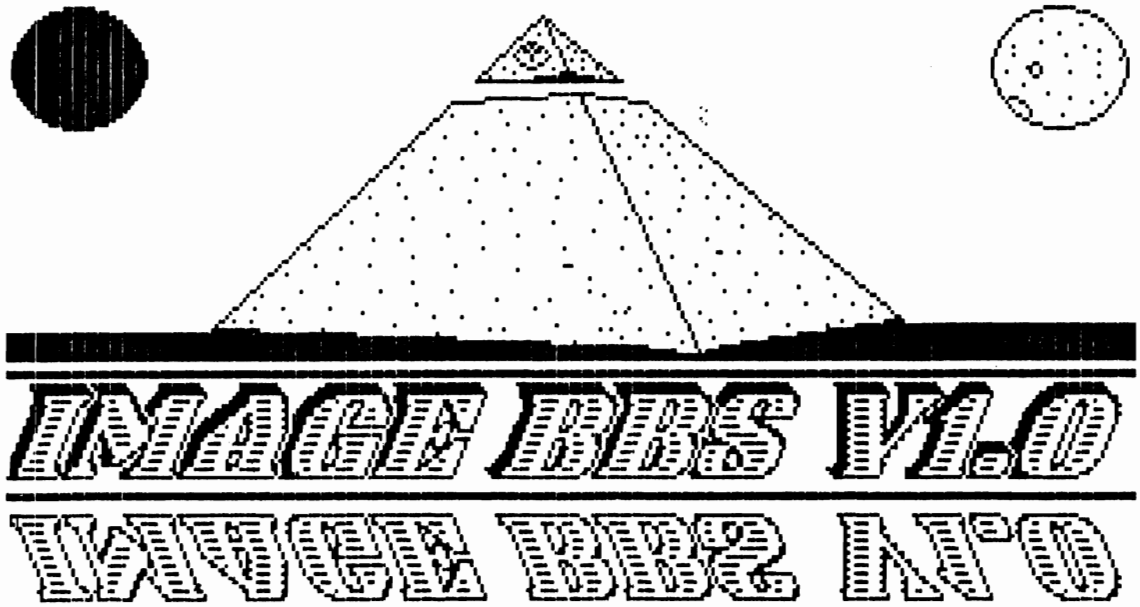

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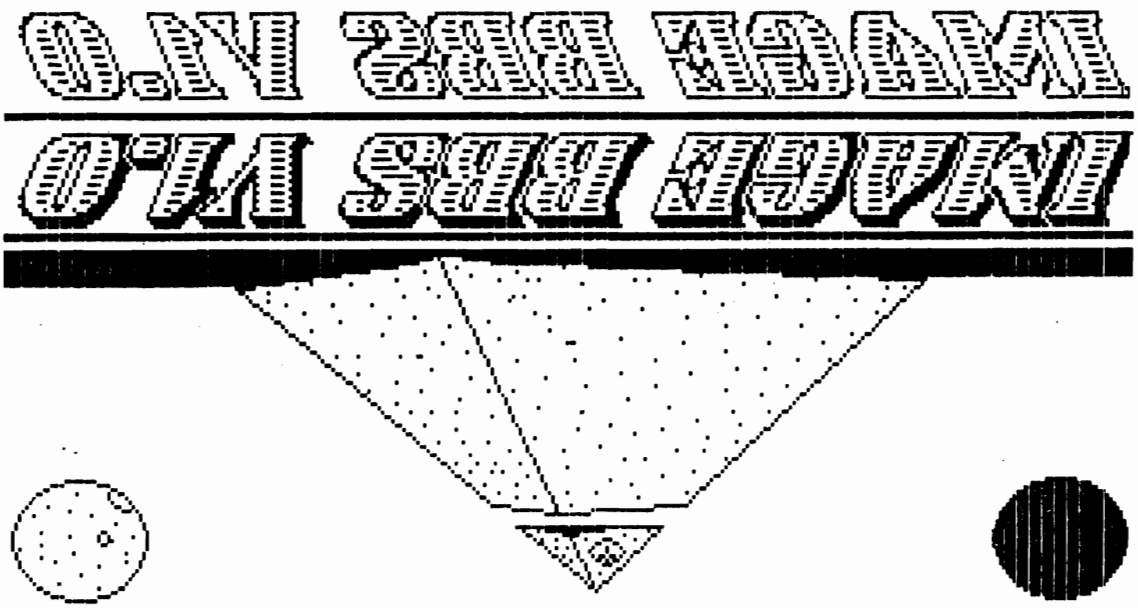

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- PREFACE -

We feel that the program you have just purchased, IMAGE BBS version 1.0, is the most versatile and elaborate BBS program for the Commodore 64 computer available today! It is the result of over five years of work, and many hours of programming time, has taken ideas from modem users and BBS sysops all over the world for its design, and offers many hours of pleasure for both BBS callers and sysops. If you are a programmer, or even a novice programmer, IMAGE BBS is designed to be easy to modify to suit your own tastes, and even to add modules to do any type of function on the BBS that you may wish to have! With some practice, and knowledge of IMAGE programming techniques, virtually anything is possible to add to your BBS. We have included some basic information on technique to get you started, and plan on releasing a more comprehensive programmers manual in the near future.

Thanks go out to all who have supported us in the past with our programs, and for all the suggestions and ideas that have been shared with us. If you need to contact us for anything at all, please feel free to at any of the voice or BBS numbers supplied on page V of this preface.

Special Thanks To:

Peggy:

For being an understanding wife while this program was being developed, taking over the business end of things at a time when it was needed, and helping to make decisions, some of which were really tough. I don't believe this program would be possible without her.

Jamie, Christy, Billy, and Kim:

For their support, patience and understanding in giving Dad (and sometimes Mom) up for all the extended programming and business sessions.

Ray Kelm (PROFESSOR):

For being the sharpest ml whiz-kid in the world, and all the quality work.

Fred Dart (THE CHIEF):

For the EXTENSIVE beta-testing and bug reports. (Not sure why I'm THANKING him for bugs, but...) Also, for his enormous phone bills in getting this thing done as soon as possible. And for many other things too numerous to detail.

Jay Levitt:

For representing us on QuantumLink for so long, and the work he has helped with on the program. Especially the E-Mail routines.

Jim Flinn (MUZAK MAN):

For designing the awesome title screen and beta testing.

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For bringing over the cokes when I was broke, and being official IEEE beta tester.

Mike Coley (THE HAPPY HACKER)
For the voting booth, and so many great ideas! (Where are you, Mike, haven't heard from you!)

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Fiscal, Xetec, Trans-Comm, InConTrol, and the many other companies who were so cooperative in helping us develop the program to allow their products to be used.
And finally, to YOU, for trying IMAGE BBS out! We're sure you won't be sorry you did!

Don Gladden
New Image Software

PRODUCT INFORMATION

This section contains all warranty, program usage, and support information.

USAGE AGREEMENT:

You have the non-exclusive right to use the enclosed program. Copying the program with the intention of distributing it to others, whether or not for personal gain is illegal and not in accordance with this agreement. Modifications of this program may be made for personal use, and to share with other REGISTERED owners, however, the modifications should be shared as modules. Do not distribute the program in its entirety.

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In order to be able to obtain any customer support or updates of the program, you MUST complete and return the enclosed registration card to New Image Software. If this registration card has not been received by New Image Software, or New Image Software is aware of breech of any part of this agreement by you, New Image Software is under no obligation to make available to you any customer support or updates of the program even though you have made payment of the applicable update fee.

ACKNOWLEDGEMENT:

You acknowledge that you have read this agreement, understand it, and agree to be bound by its terms and provisions by filling out and returning the enclosed registration card. You also agree that this agreement is the complete and exclusive statement or agreement between the parties and supercedes all proposals or prior agreements, verbal or written, and any other communications between the parties relating to the subject matter of this agreement.

Should you have any questions concerning this agreement, please contact IN WRITING, New Image Software, Customer Sales and Support, P.O. Box 525, Salem, UT 84653

USER SUPPORT:

THANK YOU VERY MUCH FOR PURCHASING IMAGE BBS VERSION 1.0! This manual is a very detailed description of the features and capabilities of the program. However, if you have any questions left unanswered, or if you discover any problem with any part of the program, please feel free to contact us at any of the following BBS or voice support lines.

LYON'S DEN BBS (Central Region: Michigan)
BBS: 313-453-2576 24 hrs. 300-1200 baud.
System Operator: Ray Kelm (Professor)

PORT COMMODORE BBS (Western Region: Utah)
BBS: 801-423-2734 24 hrs. 300-2400 baud.
9:00AM to 5:00PM MST Voice Tech line: 801-423-1966
System Operator: Fred Dart (The Chief)

IMAGINATIONS (Eastern Region: New York)
BBS: 516-582-8814 All hours except below. 300-1200 baud.
Voice Tech line: 516-582-8814 - 9:00AM to 9:00PM EST Weekends
System Operator: Jay Levitt

TEC-NET (Southern Region: Florida)
BBS: 904-756-2700 24 hrs. 300-1200 baud.
8:30AM to 4:00PM EST Voice Tech line:
904-756-1206
System Operator: Ron Fitch (Dr. Shade)

Additional support can be found on Quantum Link. Each of the above listed support personnel are available on Qlink as: IMAGE Don, IMAGE Fred, IMAGE Doc, IMAGE John, and IMAGE Jay and will make every attempt to assist you in any way.

For support, call any of the support boards listed or any of the tech lines listed during the hours listed. These locations are set up for your convenience, you may call any of them but you might want to call the one nearest to you, they are located in the states shown.

The bulletin boards listed all have many users that are IMAGE BBS owners, and love to share modifications and ideas! You can benefit greatly by being a member of any of these BBS's.

1- SETTING UP YOUR IMAGE BBS!

Setting up your IMAGE BBS should be very simple, as long as you follow the instructions. We suggest you read this chapter carefully and then set up your system step by step, keeping the manual handy for reference. The configuration editor also has built-in documentation to help you out.

HARDWARE CONSIDERATIONS:

IMAGE BBS has been tested with many different types of peripherals, and usually has no problem running with any Commodore compatible equipment. If you have any problems, please contact us at one of our support centers listed in this manual for help, and we will do all we can to help you to make IMAGE BBS work with your system. Some modems and drives deviate from the Commodore standard enough to cause some problems, but this is usually fixable with some patches into the program(s). Some of the peripherals tested with IMAGE BBS and found to work well are:

DISK DRIVES:

All Commodore Drives, (1541, 71, 81, and IEEE drives), Xetec Lt. Kernal hard drives, ICT Datachief and Minichief hard drives. (See notes below)

LT. KERNAL HARD DRIVES:

IMAGE was completely developed using a Lt. Kernal drive, using lu's 0 to 9, so is completely compatible with this drive in all respects.

ICT HARD DRIVES:

This drive has a problem in chain mode that will not allow more than one file to be open at a time. IMAGE does use more than one file in some areas, so we suggest not using the ICT drive for the EMail or Etcetera disk, or for Subboards. Any other system function should work fine with the ICT drive.

MODEMS:

Commodore 1650
Commodore 1660 w/CD
MPP 1064
Total-Tel
Westridge
Mitey-Mo
Hesmodem II
Commodore 1670 (both models)
Avatex 1200hc
Aprotek
Trans-Com TCM 1200H and 1200H jr.
Supra 2400 baud
Most Hayes compatible modems

See the questions and answers section in the programming chapter for more modem information on setting the system up for your particular modem. (NOTE: The modem routines in IMAGE BBS are contained in individual modules, so if a modem is not supported, it is very likely that a module will be written for it that will allow it's use soon.)

1- SETTING UP YOUR IMAGE BBS!

RAM Expanders:

IMAGE BBS has been tested successfully on systems using RAM expanders in conjunction with other peripherals. The current version of RAMDOS is supplied on the back of your IMAGE disk. It is set to define your RAM as device #7, which is how it is supported in the IMAGE BBS program.

PRINTERS:

Most Commodore compatible printers should work with IMAGE BBS. The printer routines used in the program are standard Commodore routines, using logical file #4, device #4, with a secondary address of #7 to allow for upper and lower case.

INTERFACES:

Some IEEE or printer interfaces could feasibly cause some problems due to memory conflicts, and would need some customization of the program to allow use. Two IEEE interfaces commonly used and tested with IMAGE BBS are the IEEE Flash! By Skyles and the Busscard II by Batteries Included, both of which perform well.

FASTLOAD CARTRIDGES:

At the present time, we recommend that no fastloader cartridges be used with IMAGE BBS, they may only cause problems. Fastload routines are planned to be added to the software as patches very soon.

GETTING THINGS GOING:

Now that you are ready to set up your IMAGE BBS, we recommend that the FIRST thing you do is to back up BOTH sides of your original disk, (There are files on both sides, even though the disk is not double-notched), and then store it in a safe place. NEVER work with the original! None of the files on the disk are copy-protected, so don't worry about anything not working correctly with a backup disk. If you are using more than one drive, Copy-all, a great public domain program by Jim Butterfield, is included on the disk to assist you. Copy-all will copy PRG, SEQ, and REL files with no problems whatsoever on any type of Commodore compatible drives using two drives. If you only have one drive, you should use a file copier that will handle relative files. "Fast hack'em" (R) file copier, and other "fast" file copiers should NOT be used for the relative files.

DESIGNATING DRIVES:

IMAGE BBS is designed to use up to eight drives on line, and possibly use even more with limited functions. It will support single or dual drives, or logical units (lu's) 0 through 9 on a Lt. Kernal. (IMAGE will not access lu 10 on a Lt. Kernal). You will want to plan your setup on what space you have available, so read the following information carefully to help you in this regard. Although it is possible to run IMAGE BBS using only one 1541 disk drive, we highly recommend you use at least two, since you will find that disk space and directory space gets used quickly. When referring to "device" in this chapter, we are talking about the device number assigned to the particular drive. When referring to "drive", we are talking about the drive number. (0 or 1 on a dual drive, 0 through 9 on a Lt. Kernal hard drive). If you have two drives, there may either be a switch somewhere on the drives to change device numbers, or, as

with older 1541 drives, you may have to make a hardware change (that the drive manual should describe) to change the device number. You may also "software change" the device number with the "dv change" program included on your IMAGE BBS disk, or online with the "CD" command. If you only have single drives on your system, then the drive numbers will always be zero. "Directory space" refers to the actual directory on the drive, which is usually limited, depending on the type of disk drive. A 1541 drive allows 144 directory entries, while an SFD allows 244, etc. Check your drive manual to see what the limitation is. "Drive space" or "blocks free" mentioned here will refer to actual blocks used/unused on the drive.

Now you will want to plan out which disks you want to use for which functions on the BBS. There are six "designated disks" for system functions. These can be combined in any form on any drive or number of drives. They are described as follows:

1- The "s.file" disk.
Contains mostly sequential text files that do NOT change often. Menu files, board entry files, and board data files are all included on this disk. Also, system news files will be located here. Will not use too much directory or drive space. All files on this disk will have a prefix of "s.", except news files, which will be prefixed with "n.".

2- The "email" disk.
Contains all user Email and forced mail files. Will use much more directory space than disk space. All mail files are stored with a prefix of "m.", while forced mail files use a prefix of "f.".

3- The "etcetera" disk.
Contains miscellaneous files used to supply the system with information. Many online games and functions use one or more "e." files to store data. Some of these files are relative files, and most of them change frequently. All files on this disk are prefixed with an "e.". Storage depends on the number and type of online games and programs you are using. If no online programs use the e.disk, it will not use too much disk or directory space.

4- The "directory" disk.
Contains all directories used on the system, whether for subboards, UD libraries, text file libraries, or whatever. These files begin with a "d.". These files change often, and this disk will use a fair amount of directory space. Not too much disk space.

5- The "plus file" disk.
Contains all system module files needed to run the system. These are basic or ml modules that load in when needed to execute functions. These files are prefixed with a "+." or "++". They do not change, unless modified off line.

6- The "user" disk.
Contains all user data files, which are expanded as needed. These are relative files that keep all user information available to the system. These files begin with a "u.". Two directory entries, a little over one block per user total.

Different devices and drives can also be assigned to each subboard in the bulletin board section, UD library in the UD section, plus file in the online programs section, and text or movie file in the text files and movie files sections. These need not be the same as any of the system functions, but may be included within those drives if so desired.

COPYING FILES:

Now, you should format a new or useable fresh disk for each drive you will have on line, and copy over the files from the disk that you backed up. We also suggest that you label each disk with the device and drive number so that you will not get confused at any time.

Copy to the "s.file" disk all files that begin with "s.". To the Etcetera disk, all files with the prefix "e.". (NOTE: the "e.say" file is optional. This is the file that will print random "sayings" to the user at logon and when "SY" is entered at the prompts. Due to the size of this file, some sysops with smaller systems may wish to not use this feature). To the "plus file" disk, all files with the prefix "+.", and "++", and the file for your particular modem. After copying these files, change the name of the modem file on the new disk to "+.modem". Example: If you are using device 8, drive 0, and copied the 1670 modem file, type the following:

```
open15,8,15,"r0:+.modem=1670":close15
```

At any time that you change modems, you will only need to replace this file with the appropriate file from the disk for that modem. Just make sure it is always named "+.modem" on your plus file disk.

The necessary files to the other system disks will be written during the configuration process, and after it is up and running!

BOOT DISK:

(NOTE: When you boot your system, Any device can be used, but you MUST use drive #0. If you wish to use a different drive number to boot, you will have to change the program called "setup", to reflect the proper drive).

You will also need to make a "boot disk", from which you will load your IMAGE BBS. Just use a blank disk, and copy the following files onto it. This disk will be used whenever you are re-loading (booting) your system. If you have a lot of drive space, you may just wish to copy the following files to the device on line that you want to boot from.

"image"
"im"
"ml"
"screen"
"setup"

Now you are ready to CONFIGURE your IMAGE BBS!

THE CONFIGURATION EDITOR

For many this is a new experience. You will not be reconfiguring an existing system nor converting a system over but rather will be starting from scratch. For those that want or need to start fresh the 'CONFIGURATION EDITOR' will do the job. If you are converting an existing system, there are also convert routines in this program to do the job.

HOW TO CONFIGURE A NEW SYSTEM

You begin by loading the configuration program from your back-up disk. Use the standard Commodore load command:

```
load"config",8
```

After it is loaded, type RUN. The configuration editor is very complete and self documenting. You should follow each step in sequence just as they are listed in the configuration menu.

DEVICE/DRIVE ASSIGNMENTS

The first menu selection will help define the devices and drives you have to run your system on. Selecting the "DEVICE/DRIVE" menu option will bring up a sub-menu of options. The system of sub-menus will take you completely through your device and drive set up for the system, including the total number of disk devices and drives you have connected to your system and what each consists of. (Single floppy drive, dual drive or multi-drive Lt. Kernal). You will also go through each of the six required system drives, and identify where those system files may be found on your system as you decided earlier. The default values are for 8:0. To change any value simply use the cursor keys to move the highlight to the option of your choice and press the RETURN key. Use this procedure to select any menu item in the configuration editor.

MESSAGE BASE, UPLOAD/DOWNLOAD, AND U/D EXCHANGE SETUP

The next section deals with setting up your message bases, U/D libraries, and U/D exchange libraries. These may be defined now with the configuration editor, or on-line later with the "diredit" program.

You may designate as many as 30 different message bases, U/D libraries or U/D exchange libraries, or you can have none at all if you so desire. To set them up select the appropriate menu item from the main menu of the configuration editor.

The first sub-menu will explain what your subboards/libraries are and how they are handled by IMAGE BBS. The rest of the section deals with setting them up and assigning access.

There are three pages of headings, each page listing 10 subboards/libraries. You may use any number of boards up to 30 maximum, but select each one IN ORDER and give each one a name. (Do NOT skip any numbers when defining your boards. ex. Do not use board numbers one through five, skip six, and define seven through nine, etc.).

If you wish to establish a "special" board/library, you do that by naming it with a special code like this:

SUBBOARDS:
.1.YOUR BOARD NAME (This board is completely ANONYMOUS, all posts and responses are anonymous, even to the sysop.)
.2.YOUR BOARD NAME (This board requires a password to enter. Password is set using the PC command at the main command level.)
.3.YOUR BOARD NAME (This board does NOT allow anonymous posts/responses. When posting or responding users are not asked if they want their post/response to be anonymous.)

U/D OR U/X LIBRARIES:
When configuring your UD/UX boards you may make the board a 'free' area where no credit is subtracted when a user downloads by entering the board name this way:

.1.YOUR BOARD NAME (This will be a FREE download area)

You can have as many of each "special" type as you would like. The password subboards will all use the same password.

You must then assign access to each of your boards/libraries. The access is determined using the following code, which is used throughout the system.

Group #	Code	Group #	Code	Group #	Code
Group 0	1	Group 1	2	Group 2	4
Group 3	8	Group 4	16	Group 5	32
Group 6	64	Group 7	128	Group 8	256
Group 9	512				

To determine who can access a given subboard/library, simply determine which groups you want to have access and add the numbers. For example, if you wished groups 3, 5, 7, and 9 to access a given board you would add 8+32+128+512=680 and you would enter that for the access code. Note that you may also enter a '?' (question mark) at any prompt that asks for access and the system will go through the groups asking you whether you want that group to have access or not and then calculate the access number for you. You may do this in the configuration editor, or any part of the BBS that defines an access level as well.

You may also enter a subop for each subboard/library. This is done by entering the ID number of the user desired. If you are configuring a new system and have no users then you may assign the subop duties to user 1 (yourself) or to no-one at all, (the ID# will show up as -1 in this case), and then make an assignment at a later date.

Each subboard/library must be defined as to which device and drive to put the files on. (Posts/responses/U/D files). The device and drive menu options allow you to set these.

When you're done with your selections, select the last option, 'Keep Parameters' and you will be returned to the prompt to assign another subboard/library. When you're done simply select the 'Main Menu' option.

EDITING ACCESS GROUPS

You should now define your access groups. There are ten of them, group zero through nine. Each one can have different capabilities as you wish. All new users signing on to the board are automatically placed into group zero. The parameters for each group consist of:

Group name
Number of calls permitted per day (1-99 or infinite (0))
Time (in minutes) permitted per call (1-99 or infinite (0))
Amount of Time permitted at idle (before being logged off with no key press) (1-9)
Number of Downloads per call (1-99 or infinite (0))

In addition, each group will have a set of 'flags' that will be assigned when the user is placed in that group. These flags may be custom set for individual users at a later time if desired. With this editor you set the flags as you wish them assigned when first entering the particular group. The flags are usually just 'Yes' or 'No' toggles but there are a couple that require a numeric input. The flags are:

Non Weed Status :Yes/No
Credit Ratio :Numeric (e.g. 2/1)
Local Maintenance :Yes/No (This is very powerful and should be reserved for only VERY trusted users).
Post/Response Ability:Yes/No
UD/UX Access :Yes/No
Maximum Editor Lines :Numeric (10-100 evenly divisible by 10's)
Unlimited DL Credit :Yes/No (no credit deducted)
Remote Maintenance :Yes/No
E-mail Access :Yes/No (Send/Receive E-mail)
User List Access :Yes/No
B.A.R./LOG Access :Yes/No
Subboard Maintenance :Yes/No
Files Maintenance :Yes/No
MCI Access :Yes/No
UD/UX at Prime Time :Yes/No

Each of the Yes/No flags will toggle (reverse itself) when selected, the numeric flags will ask for a number to be entered.

We also suggest that, at least to start, the you define group 9 as the most powerful, as this is the group you will have when you first log on to the BBS as the sysop. You may change this any time after logging on the first time that you wish.

This will complete the Access Group assignments. When you have completed all of the assignments for a group select the 'Keep Parameters' selection and move on to another group, when all groups have been assigned, choose 'Return to Main Menu'.

BBS INFORMATION

Now you get to identify your own system. Select the BBS INFO selection from the main menu. It will have several specific questions about you and your board to help get it set up and running. First your information.

You will be asked for the HANDLE you have chosen to use on your system, this information will be assigned to user number one and will be your Sysop account. You will also be asked to provide a password. Choose it carefully since this is usually the most powerful account on the board and you will not want it compromised. Then you will be asked a few other questions that will be entered to the data in your account to start the user file. This information can be changed later on-line if you desire. Your (The sysop's) account will always be account number one on the system.

Other information about your BBS that you will fill out is the Board Name, and the Board Identifier. The identifier is a two character identifier that you might select to identify your system. For example a board such as Lyon's Den might use an identifier of LD.

You may also choose to have a 'Prime Time' or a period where everyone is limited to a certain number of minutes and UD access is limited to those with the 'UD at Prime Time' flag set. If you are just starting out you may wish to wait until later to establish a 'Prime Time' when you see how busy your system is. If you do decide to set a prime time you will be asked for the time of day you wish it to start, the time you wish it to end and the number of minutes you will permit users to use the system. All of this information may be changed later if you so desire. When you are finished with the prime time option, choose 'Keep Parameters' and you will be returned to the BBS INFO menu.

The next selection is to set the main level command prompt. This can be any prompt you desire but it should be short, this is the prompt that your users will see every time they are at the main command level. The default prompt is 'IMAGE: '. After establishing your prompt return to the BBS INFO menu.

The final selection under the BBS INFO menu is to set the number of credit points that new users are given when they log on to your system. This can vary from zero to whatever maximum you wish (up to about 65000 of course, but we are assuming that most people will not want to assign that many to new users.) This is credit that you give to the new user, they will earn more by uploading and possibly by some other methods while on the system. This will complete the BBS INFO section of your configuration.

CONVERTING FROM 12.0/12.1

This option will enable those that are running a 12.0 version to convert to IMAGE BBS. Since there are some 'beta' versions of 12.1 out, which is an early version of IMAGE BBS, we have included the necessary conversion for those systems as well. To convert your 12.0 or 12.1 system, first, rename and move the files described on the next page, then load the "config" program from side #2 of your IMAGE BBS disk. Now select the CONVERT option from the main menu and follow the prompts, answering the questions as asked. In most cases the conversion will be self documenting, we will cover any special cases here.

RENAMING/MOVING FILES

All file directories, (P-files, G-files and News files), from version 12.0 or 12.1 will have to be re-started to work correctly with IMAGE BBS. In addition, news files will have to be renamed from "cn.(name)" to "n.(name)", Email files will have to be renamed from "cm.(handle)" to "m.(handle)", and forced mail files from "cw.(handle)" to "f.(handle)" to work correctly. Also, prefixes below on any files should be changed:

OLD	NEW	
sys.	s.	
dir.	d.	(These files also must be moved to your directory disk defined earlier)
etc.	e.	

LOAD CONFIGURATION FILES

This option will allow you to load in your configuration files at any time and make changes to them as you desire. This can be done on-line as well with the +.reconfig program but the option is included here for any that may wish to reconfigure a system off-line.

WRITE CONFIGURATION FILES

The last active option is to write the configuration files to disk. You will first be prompted to insert all of your system disks into the proper drives and then the files will be written to the disks. Any files not written will be flagged and you will be notified that that file has not been written before you exit the configuration editor. DO NOT re-write the USER file at all, or the ETC file, if you have not loaded it first, as this could fool the system into thinking you only have one user!

ALL DONE

This completes the configuration of the system. You can now select EXIT CONFIGURATION EDITOR and choose the appropriate option, from returning to BASIC to booting your IMAGE BBS.

BOOTING UP:

You are now ready to boot up your new IMAGE BBS system and make your first "call"! If you did not use the "config" program supplied to define your subboards and U/D or U/X libraries, you will probably want to do this on-line during this call. Instructions for this will be described later in this chapter.

First, insert your boot disk into the proper device, (We are assuming device #8 here...), and type:

```
load "image",8,1
or:
load "0:*",8,1
```
and then press the RETURN key.

Now, sit back and let your system load up. After you see the title screen, and the system does a bit of work, you will either get to the "idle screen", if your boot files are not on a separate disk from your system disks, or the system will prompt you to "insert all system disks and press RETURN", where you should do just that. When you get to the idle screen, you will be at the screen that is normally shown while the system is running. If nothing is touched for about ten seconds after the idle screen show up, the screen will blank, protecting your monitor from burn-in. Any key touched, or call coming in will then turn the screen back on. You should also now be getting a flashing message to "Set Time!" This shows that the time and date has not been set yet, and will continue flashing until you do so. The system will run fine if it is not set, allowing sysops with Lt.Kernal drives to rename their boot program from "image" to "autostart", and have an auto-booting system. The only drawback to this is that the time and date will probably not be set correctly! To set the time and date, simply press the "1" key at the idle mode, and enter the time and date at the prompts. For the day of the week, enter one of the following numbers:

1 - Sunday
2 - Monday
3 - Tuesday
4 - Wednesday
5 - Thursday
6 - Friday
7 - Saturday

Then enter the month, date, and last two digits of the year in numeric format, the time in hh, mm format, followed by a or p for AM or PM. If the information is correct enter "y" or press RETURN or enter "n" if you have made a mistake and re-enter the data.

THE IDLE SCREEN

Now the clock screen will come back on and the system will be waiting for a call. There are several functions available at this screen from the console, all of which are outlined in a menu if you press any key aside from one that is a legal "command" key. The functions listed there are as follows:

Key	Function
1	Set the time
2	B.A.R. Screen
3	System disk blocks free screen
4	Clock screen
5	Update memory(garbage collect)
6	Reset modem
(Left Arrow)	Load IMAGE term
+	Turn modem speaker on
-	Turn modem speaker off
C= t	Invert carrier detect
(Space)	Redisplay current screen
(Brtsh pound)	Manual answer

1 Pressing the 1 key will allow you to set or reset the date and time as outlined above.

2 The B.A.R. screen displays current data for the BBS in four columns, which cover the last call, total since the log was restarted, current total, and system grand total. The rows on the screen report how many feedback messages, sysop mail, user mail, posts, responses to posts, uploads, downloads, new users, calls, time used in minutes, and time idle in minutes for each category. (The first column will show the idle time between the call before and that call).

3 The system blocks free screen shows the blocks free on all "system" disks.

4 The clock screen shows the current time.

5 Pressing the "5" key will force a garbage collect at idle mode, and force a true memory display on the bottom left corner of the screen.

6 Pressing the "6" key will send a modem reset sequence of commands that will reset the modem to IMAGE BBS requirements.

(Left Arrow) Pressing the left arrow key will load IMAGE term allowing you to call out without taking the system down.

C= t Pressing the C= (Commodore) and the "t" key at the same time will toggle modem xor values, to invert the carrier detect.

+ or - Pressing the plus or minus keys will turn the modem speaker on or off. (For compatible modems)

(Space) Pressing the spacebar will redisplay the current screen display.

(Brtsh Pound) Pressing the British pound key will manually answer the modem.

At the top of the idle screen are several items of interest. The top line will show the date and time, followed by the time remaining for a user while he is on line. Since there is nobody on line at the idle screen, it should now show 00:00. When you

or another user logs on, it will display correctly. Also, on the top row, at the extreme left and right there will be a check mark from time to time. The one on the right will be present when ever a carrier is detected, the one on the left will indicate that a user is in Color/Graphic mode. At idle, the window on the upper left of the screen shows the handle of the last caller, followed by his logoff time, and the time of the last log restart. The window to the right shows the number of accounts currently used in the user file. When a user logs on, these displays will change to show additional information that will be described later.

Below this area, directly above the normal text display screen is what we refer to as the "check line". This line is used for several functions, all of these are toggled by the sysop at the console.

THE CHECK LINE:

Using the function keys F3 and F5 you may highlight any of the eight headings on the check line. They show as follows:

Sys Acs Loc Tsr Cht New Prt U/D

Using the F7 key will place a check mark to the left of the heading, the F8 key will place a check mark to the right of the heading. These checkmarks tell the system to do various things.

Sys:
Checkmark on the left:
Means that the sysop is available for "chat", and will sound three sirens when "C" is pressed at any prompt by the user.
Checkmark on the right:
Turns on a tracing feature that will show, in the bottom left window, the line number that the program is currently executing in BASIC. You may slow execution down with the shift or shift lock keys to read these more easily. This is meant as a debugging tool, and is not normally left on.

Acs:
Left:
Allows the sysop, by using the F3 and F5 keys, to change the access group of the user on line. The F3 key will raise access one group, the F5 key will lower it. Access data is read into memory as soon as the user gets to a prompt. However, any UD libraries or subboards that his new access group can see will not show on his menu until he re-enters that subsystem.
Right:
Allows the sysop to restrict logons to 1200 baud and over. If this checkmark is on, 300 baud callers are told the the system is not accepting 300 baud calls at this time.

Loc:
Left:
This is used to "logon" from the console. That is, make a "call" to the system from your keyboard.
Right:
If the checkmark is on it shows that a remote user is in "pseudo-local" mode.

Tsr:
Left:
Allows the sysop to add or subtract time to the user online similar to the access change above. When the checkmark is on, some of the function keys will allow changes as follows:

F1- zero time. (cause and immediate logoff)
F2- give unlimited time (will show up as --:00 on top right of screen)
F3- add one minute
F4- add ten minutes
F5- subtract one minute
F6- subtract ten minutes

Right:
Toggles 'prime time' for every user, (that is, if it is currently prime time, it will ignore it at logon, if not, it will turn it on. If no prime time is designated for your system, then this will have no effect.

Cht:
Left:
Goes into 'chat' mode with the user on-line.
Right:
Toggles 'local' bells so the Sysop hears all the bells that the user on-line hears.

New:
Left:
Makes the system a 'private' system and will not allow 'New Users' to log on. They are told that the system is not accepting 'New Users' at this time.
Right:
If checked will turn OFF the screen blanking mode so that the screen will remain ON and not blank out between calls.

Prt:
Left:
Sends all text output to the printer as well as the screen.
Right:
Prints all log entries to the printer as well as the disk log.

U/D:
Left:
When selected will not allow any users to access the UD/UX area. They are told that that area is closed temporarily.
Right:
When selected will not allow 300 baud callers to access the UD/UX area. They are told that they do not have access to that area at this time.

THE BOTTOM LINE:

Along the bottom two lines of the screen is more useful information. The line just below the text display area contains system operating information in this order:

M=xxxxx is the current free memory available to the system. This is constantly updated by machine language as memory is allocated by the program, and allows the sysop to see any areas

that are causing rapid 'garbage' build-up. It also shows the sysop when the system is going to do a 'garbage collect' as the memory value will drop to zero or very near to zero.

TC=xxxxx The total number of calls that have been placed to the system since it was originally configured.

CN=xxx The number of calls to the system since it was last re-booted.

BF(00:0)=xxxxx Displays the blocks free on the last disk or drive checked by the program. This changes as users go from one part of your system to another so you can constantly monitor the different system disks.

The last row on the screen has two 'windows' and a center display area. The window on the left is the Receive window and is a display of the receive buffer, showing the last 10 characters received from the modem. When the 'trace' is running (as described above under 'check-line functions') it will appear in the left half of the R: window.

The center portion of the bottom line is a display portion, it will show 'Image BBS V1.0' at system idle, the type of computer that a user is using when a user is on-line, the reason for 'CHAT' if a user has requested chat and you are not available. (This section will also be flashing at this time). It is also available for custom programming to display information.

The final section of the bottom line is the Transmit window. Just as the receive window displays the last 10 characters received from the modem, this window displays the last 10 characters sent to the modem.

LOGON:

You're now ready to go on line and examine your new IMAGE BBS in action! You can logon and edit your "s." files, configure any subboards and UD libraries and redefine your access groups if you wish. You may logon either normally or use the "instant" logon feature. This section will cover the normal logon sequence. Use the f3 and/or f5 key to make sure the "Loc" position on the check line is highlighted, and then press the f7 key. This will log you on locally, just as if you had called the system. We suggest that if you have a phone connected to your modem, that you take it off the hook at this time, so that calls will not come in, as they may connect with your modem but not connect to the BBS, since you will be on locally, or they may get no answer, and assume that something is wrong with the BBS.

When someone has logged on normally, either remotely or locally, the program's copyright message and serial number will be displayed. In remote mode, the user will be prompted to hit his backspace (delete) key to detect whether he is in Commodore color graphics mode, or ASCII mode. Depending on which mode he is in, he will then read the file "s.login 0" (for ASCII), or "s.login 1" (for C/G). Then the user will be asked to "PRESS RETURN/ENTER". When RETURN is pressed, the program will read the disk file "s.start 0" or "s.start 1", again depending on whether the user is in Color/Graphics mode or not. This file

may be skipped by entering "A". Next the program will instruct the user to "ENTER YOUR HANDLE OR (your board) ID: ". If the user has no account, or makes a mistake entering the information, he will be instructed to enter "NEW". If the user has made four mistakes and has not entered "NEW" he will be logged off for excessive login attempts. If the user has a "RES" account, he can enter "RES" at the prompt to take him to the RES function of the new user program.

RES USERS:

A RES user is one that you have set up an account for already using the "RS" or "ED" command on the BBS. (See the maintenance section). He will be asked to enter his RES ID number, and password, which you should provide him with when you set up his account, and then be taken through the normal new user application. When he is done with this, he will be logged on with the pre-approved access and credit points that you had assigned to him.

NEW USERS:

If a user enters a handle that is not found in the user log he is asked if he would like to log on as a new user using that handle, if he says "Y" or if he enters "NEW" or "RES", the new user procedure will be executed, beginning with the reading of the file "s.new user". The new login procedure consists of four parts: general information (handle, real name, password), terminal parameters (computer type, column-width, line feeds, etc.), miscellaneous questions (address, occupation, baud rate, etc.), and a personal statement (a chance to type a paragraph or two about himself). Once the new user login procedure is completed, this information about the user is put in new user feedback for you to view later, and he is taken into the system with access group zero status.

THE TOP SCREEN AFTER LOGON:

Once a user has logged on and his password verified, the top of the system screen will be change quite a bit from what it shows at the idle screen.

The very top line contains the full date and time, and time remaining on the system in minutes.

The next five lines contain specific information about the user logged on. First is the user's handle, then his login ID. Last call date, and number of calls today and total to the system. Next is the user's real name, his access group, his phone number and his parameters. The parameters include expert mode, color/graphics mode, linefeeds, lower case, and column width. Also, the top left corner of the screen will show a checkmark if the user is in Commodore C/G mode, and the top left corner will have a checkmark whenever carrier is present. (A modem is on the line).

Once a user has successfully logged onto the system, either remotely or locally, as either a new user or a user with a login ID and password already, the system will read the file entitled "s.welcome", inform the user of what his/her access group is, how many calls he can make on that particular day, (if not an infinite number), and the time he has for this call. Then it

will check to see if there are any new news files to read to the user, ask him if he would like to view the 'Graffiti' and check for electronic mail to that user. Once all of this has been completed, the user will be placed at the main command level.

EDITING SYSTEM INFO FILES:

You now should be at the main command level, where you can do several things. Since this is your first call, you may wish to edit the following files to suit your own tastes and coincide with your BBS plans. Sample files have been included on the disk, but may be edited or replaced with whatever you wish. Use the "WF" command for this. (See the maintenance section for more info).

"s.login 0" and "s.login 1" (ASCII or Graphic mode screen) :This file is the file that the user sees as soon as the system answers the call and he presses his 'backspace key' for C/G detect. If a user is in ASCII mode, he will see "s.login 0", if he is in C/G mode he will see "s.login 1". These files usually contains the name and hours of the BBS.

"s.start 0" and "s.start 1" :This file is read to the user if he presses RETURN at the "ENTER RETURN/ENTER " prompt.

"s.welcome" :This file is read to the user after he has entered his password, and is verified.

"s.end 0" and "s.end 1" :This file is the closing message that the user sees when he logs off the system.

"s.new user" :This file is read when a user enters "NEW". It may contain a disclaimer, and any other information that you wish new users to know.

"s.config" :This file should contain the information about your system such as the equipment it is running on and any other information you may wish. This file is read when a user enters "CF" at any prompt.

"s.phonebook" :This is a file with other BBS numbers that you may autodial when used with the IMAGE terminal program that is built into IMAGE V1.0. If you have a Commodore 1670 or a Hayes compatible modem. To write this file, you should include three items of data for each BBS that you would like, the name of the BBS, the phone number, and the baud rate. These should be separated by a carriage return, and can be added at any time. Example:

```
LYON'S DEN
1-313-453-2576
1200
PORT COMMODORE
1-801-423-2734
2400
```

(NOTE: Make sure that the FIRST line of the file contains the first BBS name and not a carriage return, and that there are NO extra carriage returns before, between, or after the information, or the system will not read the information in correctly).

"s.chat" :This is the message printed to the user if they request "C"hat, and the sysop is not available.

"s.UD" :This is the "entry file" shown whenever a user enters the U/D subsystem.

"s.UX" :This is the "entry file" shown whenever a user enters the U/X subsystem.

"s.SB" :This is the "entry file" shown whenever a user enters the bulletin board subsystem.

"s.nu welcome" :This is a "form letter", that may be sent, if desired, to new users when you read their new user feedback and grant access.

To create or edit these files, use the "WF" option at the main command level. You can also use the "Put" and "Get" options in the editor. (See the "MAINTENANCE" chapter for information on "WF" and the "EDITOR" chapter for editor commands.)

NOTE: THE NEXT TWO SECTIONS NEED NOT BE DONE IF YOU HAVE ALREADY CONFIGURED YOUR SUBBOARDS, LIBRARIES, AND ACCESS GROUPS WITH THE CONFIG PROGRAM.

BULLETIN BOARDS AND LIBRARIES:

After editing these files, you will want to set up your subboards and UD libraries if they have not yet been configured. You can create up to 30 subboards, 30 UD libraries, and 30 UX libraries. To do this, and to change them at any time after, you can run the "diredit" program from the main command level. Simply enter "R" at the main prompt and then type in "diredit" at the "+." prompt. Follow the prompts to set up the boards to your preference. Here is the guidelines to use when choosing access codes:

For each subboard that you wish to create, you must give it a title to describe it, device and drive number to tell IMAGE which disk drive to write files for that subboard to and an access code to identify which user groups can have access to it. You MUST enter subboards in numerical order, starting with one, up to the number of boards that you wish. To determine what number to enter for an access code, use the following chart:

Group	Code	Group	Code	Group	Code
0	1	1	2	2	4
3	8	4	16	5	32
6	64	7	128	8	256
9	512				

or enter a "?" (question mark) at the access prompt and then answer "Y" or "N" to each Group and the board will calculate the access for you.

To determine the number yourself, first decide which groups get access to the subboard, then add together the codes next to those groups. For example, if you wanted subboard number 3 to be accessible by only groups 3, 4, and 5 you would look at the chart and add together the codes 8, 16, and 32 (8+16+32=56). An

access code allowing all access groups would be the sum of all codes on th chart which is 1023.

ACCESS GROUPS:

You can define or change your access groups on-line if they have not been previously defined. Again at the main command level prompt enter "R" and run the file "access" at the "+." prompt. You can define up to 10 access groups and what they will be able to access on the system. They are numbered from 0 (New User) to 9 (Usually you, the Sysop). All new users logging on will automatically be put into group 0. For each of the group numbers that you choose to use you can select a title for it. You should choose one of the access groups to be the system operator group, for you with highest system priveleges. For each group you are using, you can select a specific amount of calls per day that that group can make as well as how many minutes per call is allowed, how many minutes at idle is allowed (how many minutes may pass without pressing any keys before the system will automatically hang up), and how many downloads can be made per call. INFINITE settings may be specified for calls per day, minutes per call, and downloads per call by entering a 0. (Idle time cannot be set to infinite, but must be from one to nine minutes.)

ACCESS FUNCTIONS:

Next come 15 "default" system functions that you may define for each access group. These functions may also be set individually for any user if so desired. Most of these functions only require you to specify yes or no to determine whether an access group will have access to that particular function. Two of the functions require you to enter a number. (How many editor lines, and credit block ratio for uploads). The system functions are:

1: Whether that access group will have "non-weed" status, or be ignored by the auto weed program when you run it to delete old users. (0=no 1=yes)

2: The number of credit points (0-9) that each member of any access group will receive for every block uploaded.

3: Whether this access group has access to "local mode" maintenance or not. (Should be reserved only for your most trusted users.) (0=no 1=yes)

4: Whether this access group has the ability to post and respond in the public message bases. (Usually all groups except for new uses, but you may let new users post and respond this way if you wish.) (0=no 1=yes)

5: Whether or not this access group can access the UD subsystem. (0=no 1=yes)

6: How many lines in the editor (in multiples of ten) that may be used to compose messages. (For this value, 0=10 lines, 1=20, etc.)

7: Whether or not credits are subtracted from a users account when they
download. (Unlimited download capability) (0=no 1=yes)

8: Whether or not this access group can use remote maintenance. (View feedback, write/remove forced mail files)

9: Whether or not this access group can access Electronic Mail.

10: Whether or not this access group can view the User List.

11: Whether or not this access group can read the log of callers and B.A.R. screen.

12: Whether or not this access group has general subboard and UD maintenance.

13: Whether or not this access group has general text and program file maintenance.

14: Whether or not this access group has access to the MCI.

15: Whether or not this access group can enter the UD section during "prime time". (If you choose to set a "prime time").

DONE!:

Now your IMAGE V1.0 is ready to go on-line for calls! You may wish to post a few bulletins and news files, etc., to get the system started. We hope you like your new version 1.0 and welcome your comments and suggestions.

When you first logon to the BBS, after the system checks for your mail, and goes through normal logon procedures, you will be at the "Main Command Level". You will see your main prompt that you defined in the configuration editor. You are now at the area where you have many options as to what you will do next. This chapter will deal with the commands needed to get to certain functions of the BBS, and how to use them. All "general" commands, that is, commands that are NOT specific to a certain subsystem, are available both at the main prompt, and at most any subsystem prompt as well. There are a few commands available only at the main command level that are maintenance commands, or available from local or pseudo-local mode only. These commands will be discussed in the maintenance chapter. Most general commands consist of two letters, sometimes followed by an argument of one or more numbers. A few commands consist of only one letter. Here are the descriptions of the commands and how to use them.

GENERAL COMMANDS:

"C": CHAT REQUEST/CHAT MODE:
Entering "C" will request a chat with the system operator. A short (38 character) reason for chat will be requested, and displayed in an off/on flash at the bottom of the system screen, and recorded in the call log on disk and printer (if used). If the system operators status is checkmarked, the user will be given a message informing him that the sysop is being paged, and three sirens will be sounded by the system monitor. If there isn't a checkmark, the user will be told that you are not available, the "s.chat" file will be shown, and he will be asked if he wants to leave feedback instead. The "reason for request" will continue to flash until he logs off or until you answer the chat page. If the user requests chat more than once, without you answering the first chat request, then he will be told that the page is already on, discouraging him from continuing to hit the "C" key.

"F": FEEDBACK:
Feedback is "mail" left on the BBS to the sysops, that any user with local or remote maintenance access may read. It is left to the system operators by entering "F" at any prompt. The user will be placed into the editor to write his message. Any user, including new users, is allowed to leave up to three feedback messages per call. If they try to leave more than this, they will be informed that they have left their limit of feedback. Feedback along with new user information and error messages are read by the system operator by typing "VF" at the main command level. (Described more in the maintenance chapter).

"?": HELP:
Entering a "?" (question mark) will read a menu of commands available at that level and a "More?" prompt for additional command information.

"CF": SYSTEM INFORMATION:
Entering "CF" will read the file "s.config" from the system disk. This file should contain general information about your system, what it is running on (hardware and software) as well as anything else interesting about it.

"LD": LAST CALL DATE/TIME:
A user can change his effective last call date and time by entering "LD" at any prompt. A user may wish to do this because the last call date is used to determine which messages on the system are new and which are old. If a user is logged off before he has a chance to see all new messages, he can use this command to move his last call date back the next time he calls.

"O": LOGOFF:
Entering "O" at any prompt will take the user to logoff. He will be asked first if he really wishes to logoff, and if so, if he would like to leave feedback to the system operators first. Entering this command followed by a "%" (percent) will save the last call date, in case they did not read all the "new" information on the board. If they follow it with a "!" (exclamation), it will log off instantly, without prompting for feedback, etc. These may be combined, entering "O%!", to logoff instantly, saving the last call date.

"Q": QUIT:
Entering "Q" (and in many areas, just a RETURN), at any command prompt will return the user to the main command level. If "Q" is entered at the main level the user will be taken to logoff.

"T": TIME/DATE:
Entering "T" at any prompt will display the current time. the time the user logged on, and the amount of time remaining on the system this call.

"BC": BAUD CHANGE:
Entering "BC" at any prompt will allow a 300 baud use to change his baud rate up to 490 baud. This option will not work for 1200 or 2400 baud callers.

"EP": EDITING PARAMETERS:
Entering "EP" at any prompt will allow a use to edit their terminal parameters. They will be taken to a menu that will allow them to change anything that they wish, such as computer type, line length, etc.

"PM": PROMPT MODE:
Entering "PM" at any prompt will toggle "prompt mode". This mode allows users to do an "RA" or "RN" in the subboards and not receive an end of message prompt. Useful for long distance callers who may wish to buffer the messages. It will also eliminate the prompt after the "A" command in the U/D subsystem.

"ST": STATUS:
Entering "ST" at any prompt will allow a user to see their status on the system including access, and other information.

"SY": SAY
Entering "SY" at any prompt will allow users to read a "saying", or "fortune", such as the one read at logon.

"LG"/"BA": LOG/BAR:
Entering "LG" at any prompt will allow designated users to read the log of callers. "BA" at any prompt will allow them to view the "B.A.R." stats as shown between calls.

"AT": C/G-ASCII MODE TOGGLE:
Entering "AT" will toggle the ASCII translation to C/G and vice versa.

"XP": EXPERT MODE
Entering "XP" at any prompt will allow users to toggle "Expert Mode". Aborts reading of entry files. Whatever this is set to will be saved to disk and defaulted on the next call.

"NU": NEW USER MESSAGE
Entering "NU" at any prompt will let the user re-read the "s.new user" file from the "s." disk that he read on his initial logon as a new user.

"PW": PASSWORD CHANGE
Entering "PW" at any prompt will allow a user to change his password. He will be asked to enter the old password first, then the new password twice, to verify the change.

"ZZ": LOCAL MODE:
Entering "ZZ" at any prompt will allow users with local mode access to enter pseudo-local mode, and allow them to do local functions remotely, such as copy files, read directories, etc. This is a very powerful, and should be allowed to only the most trusted users on your system.

ENTERING/CHANGING SUBSYSTEMS:
Additional commands available at all major levels of the board include the commands to go to any other subsystem on the board. In other words, a user need not go to the main command level from the subboards before going to UD or PF but rather can enter that area directly. The commands that are active at all major prompts include: "BB" "EM", "MF", "NF", "PF", "SB", "TF", "UD", "UL", "UX" and "VB". Each of these commands will take a user to a separate 'subsystem' of the board and each subsystem will be discussed in the following chapters.

COMMAND STACKING:
Any of the main commands entered at any prompt can be "stacked" by using the up arrow "↑" key between the commands. An example of this: If the following command were entered at the main prompt:
SB9↑RN↑<↑R3↑UD↑SA
Then the system would take you to subboard 9, (SB9), read the new information there, (RN), move back to subboard 8, (<), read post #3, (R3), enter the UD subsystem, (UD), and scan for all new uploads. (SA). The "minor" prompts, such as the "end of bulletin" prompts, etc., will not check the stacked commands, only the main level and main subsystem prompts will.

BULLETIN BOARD SYSTEM (SUBBOARDS):

This is the IMAGE "public message base." When a user enters the bulletin board subsystem, only the subboards that his access group can access are loaded into memory. So, if you have five subboards, but a user logs on with an access group that can only access boards one and five, he'll see only two boards, re-numbered as 1 and 2. In this way, he should not be aware that the boards he cannot access are on the system. A user is at this subsystem when he is prompted with "Sub #x: " where x represents the number of the subboard. Users access the bulletin subboards by entering "SB" at any prompt and are read the file "s.SB" when entering the subsystem, regardless of whether they are in expert mode or not.

MOVING TO ANOTHER SUBBOARD:

A user can change the current subboard by entering the new subboard number at the "Sub #x: " prompt. Entering "<" or ";" will take the user to the subboard just before the one he is on. Entering ">" or "=" will take the user to the subboard just after the one he is on. If a user moves to a board that he is the subop of, he will be informed of this. Upon entering the board, he will be told how many bulletin and responses total are on that board, and also how many new messages there are. If a move cannot be made, the user will be told that the board number he requested does not exist. Entering "N" will display the name of the current subboard.

LISTING THE SUBBOARDS:

A user can get a list of which subboards he has access to by entering "L", or "L" followed by the board number to start listing from. If he is the subop of any subboards, the name of the board will be preceded with a ">". If it is a "special" subboard, the title will start with an identifying prefix.

SCANNING BULLETINS:

Scanning means to display only the subject of the bulletins. Just entering "S" will begin scanning at the first bulletin on the subboard. "S" followed by a bulletin number can be used to start scanning at a specific bulletin. The slash key or the space bar can be used to abort a scan at any time. A scan will show the number of the bulletin, name of the bulletin, how many responses the bulletin has, whether the bulletin is frozen or not and whether or not the bulletin is "new", or there have been new responses added.

ABOUT BULLETINS:

About bulletins means to display the subject, author, date of creation, number of responses to a bulletin and the date/time of the latest response. Just entering "A" will tell a user about the next bulletin following the one that was just manipulated in any way. "A" followed by a number can be used to find out about a specific bulletin.

READING BULLETINS:

To read a bulletin is to first find about it, then read the text body of the message, followed by each response until the end of the bulletin. Just entering "R" or just pressing RETURN will read the next bulletin. "R" followed by a number can be used to

read a specific bulletin. While reading a bulletin, a user can press the space bar to skip to the next response, or press "/" to skip directly to the end of the bulletin. Once at the end of a bulletin, a user has several options. He may press RETURN to continue, "P" to leave a private message to the user that posted the original message, "R" to add a response to the end of that post, "O" to begin reading the post over from the beginning. "Q" or "/" to stop a "RN" or "RA" function. Also, a subop or sysop can enter a "K" to kill the post. A question mark at this prompt will bring up a short menu of these options.

NEW MESSAGES:

To either scan, find out about, or to read only the bulletins that are new since a user last call, he should enter "SN", "AN", or "RN", respectively. To stop an "RN" in progress, press the "/" key while reading about a message. To either scan or read only the messages that are new on the current subboard and all higher subboards, the user should enter "SA", or "RA", respectively. To stop an "RA" or "SA" at the subboard it is on, press the "/" key.

POSTING NEW BULLETINS:

If a user enters "P" and there is room for a new bulletin, the user will be asked for a subject of his message, asked if he would like to leave the message anonymously (if it is NOT a non-anonymous board), then placed into the editor subsystem to write his message. The author of a bulletin appears as "Anonymous" if the user has requested, except to the subboard operator, (subop), or a user with general or general subboard maintenance, who will see "*" followed by the user's handle to show that the message was posted anonymously.

KILLING ENTIRE BULLETINS:

To kill a bulletin means to remove it from the subboard along with all of the responses to it. Entering "K" will begin listing all bulletins starting with the first one, "Kx" starting with bulletin #x, and asking if you want to kill it "Y)es N)o A)bort or S)tart". You can go through the entire subboard or just one message. Entering K followed by a number will begin the listing with that number and offer the same choices. Once the end of the list is reached or "S" is pressed the list is scratched from the disk and the directory updated.

A regular user can kill his bulletin so long as there are no responses to it. Once responses are added, only a subboard operator can kill it.

EDITING BULLETINS:

To edit a bulletin, a user should enter "E" followed by the number of the post to edit. The bulletin will be opened, and the system will search through the bulletin for messages that the user can edit (he is the author, or is subboard operator). When and if such a message is encountered, the user will be prompted with "K)eep, D)elete, R)ead, E)dit, or A)bort." "D" for delete will remove the message, "E" for edit will take the user to the editor subsystem to edit the message, "K" for keep will go on to the next message, and "A" for abort will return the user to the subboard prompt.

FROZEN BULLETINS:

When a bulletin is posted and the user does not want any responses added to it he can begin the title of the bulletin with an "up arrow" "↑" character. The system will report this bulletin as frozen during a scan or about and will not allow responses to be made to it.

SUBBOARD OPERATORS:

A user should enter "V" to view the subboard operator of the current board, and "M" to send a private message to him. Subboard maintenance mode is entered only by the subboard operator or a user with general subboard maintenance by entering "Z". The subboard maintenance menu has two options.

1) Edit the entry file. The entry file of a subboard is the file that is displayed upon entering the subboard. If there is already an entry file, it will be loaded into the editor.

2) Edit board detail. Another menu is brought up, allowing the user to change the title of the board, open/closed status, and access level. If the user is in local or pseudo-local mode, he also has the option to change the current subboard operator and configuration (device/drive).

ANONYMOUS/PASSWORD/NON-ANONYMOUS BOARDS:

While defining the subboards at configuration or using the "diredit" program. you may specify any of your subboards to be a "password" board, requiring a password to enter, or an "anonymous" board, where all bulletins and responses will show as anonymous, even to the subboard operator and sysops, or a "non-anonymous" board, where no anonymous messages are permitted.. To define an "anonymous" board simply start the board title with the characters ".1." using "diredit" or the "Z" command for submaintenance. To define a "password" board the board title must begin with ".2." and the board will ask any user that has access to that board for the password upon his entering it. If he gets the password wrong, he will be asked if he wants to try again. If he guesses wrong three times in the same call, he is not allowed to guess again. This can be used either for fun, by putting hints to a password up other places in the system, or to add a measure of security for certain boards that you do not want all to access at all times. To set the password for this board, (the same password will be used for all password boards you define), enter a "PC" (in local mode only), at any prompt. To define a "non-anonymous" board use the prefix ".3." before the name of the board and users will not be asked if they would like the post/response to be anonymous.

5- UPLOAD/DOWNLOAD AND EXCHANGE SUBSYSTEMS

UPLOAD AND DOWNLOAD SYSTEM:

This is the IMAGE BBS "file transfer base." When a user enters the upload and download "UD" system, only the UD libraries that his access group can access are loaded. So, if you have five libraries, but a user logs on with an access group that only has access to one and five, he will see only two libraries, renumbered as one and two. In this way, the user is only aware of the libraries that he can access and does not know there are any others on the system. The prompt for this section "U/D #x: ", where "x" is the number of the current library. All users will read the file "s.UD" when entering the UD section, regardless of whether they are in "Expert Mode" or not.

MOVING TO ANOTHER LIBRARY:

A user can change the current library by entering the new library number at the "U/D" prompt. Entering "<" or ";" will take the user to the library just before the one he is on. Entering ">" or "=" will take the user the the library just after the one he is on. He will be shown the total number of files and files uploaded since his last call on the library, the U/D protocol currently in memory, number of blocks free for this library, and total number of credit points that he has available. If he is the subop of this library, he will be informed of this. If a move cannot be made, the user will be told that the library number he requested does not exist. Entering "N" will display the name of the current library. A user can get a list of the libraries that he may access by entering "L". If he is the subop of any of the libraries, he will see a ">" preceding the name of the library. If it is a "free" UD area, he will see a "Free" prefix before the name.

UPLOAD AND DOWNLOAD PROTOCOL:

Both the New Punter and X-modem protocols are available for use with IMAGE BBS. Commodore 64 and 128 users default to Punter; all others default to X-modem. To change the active protocol, a user enters "PR". Punter protocol is only available to Commodore computers, including Amiga.

SINGLE FILE UPLOAD:

To upload a single file to the system, a user enters "U". Each library allows a maximum of 60 files. The user is asked for information describing the file, and this information is saved along with his handle, ID number, and the current date and time. He will receive credit points at the ratio of whatever his access group or flag allows per block uploaded.

MULTI FILE UPLOAD:

To upload multiple files to the system, a user enters "UM". The user is directed to go to "Multi Send Mode". The system records the file names as they are received, and enters them in the directory, along with the handle, ID number, current date and time of the user and a description that says "Multi-Upload". Users may edit the entry to provide descriptions. Credit is given just as with a single file upload. (NOTE: Occasionally noise on the phone lines will cause a title of a file multi-uploaded to be corrupted. This is impossible to prevent totally, but is a rare occurrence, and should not cause much trouble).

5- UPLOAD/DOWNLOAD AND EXCHANGE SUBSYSTEMS

SINGLE FILE DOWNLOAD:

To download a single file from the system, a user enters "D" followed by the file number. Note that a user can only download the number of times per call that his access group is allowed, that he must have enough time left to download the file, and that he must have at least as many credit points as the number of blocks that the file contains, unless his status includes unlimited downloads. (In this case, no credits are subtracted for a download).

MULTI FILE DOWNLOADS:

To download multiple files from the system, a user enters "DM". He would then be asked for a "Starting file Number". He is then shown each file from that point on and given options of "Y)es N)o S)tart A)bort". Each file he selects "Y" for he will be shown the approximate time to download at his baud rate. All other requirements must be met as to number of files permitted per call, number of credits he must have and time remaining. If he has all the requirements the file is added to the list and he can continue on until he has reached his maximum or he has gotten all he wants. He can choose to "S"tart at any time and the system will then show him the list of titles he has chosen and ask him to confirm the list. If he does so he will be given 20 seconds to "go to receive mode" and the files will be transferred.

NOTE: Users can abort any file transfer in any mode and any protocol by sending CTRL-X three times. That is, holding down the CONTROL key and then typing the letter "x" three times.

LISTING FILES:

At the "U/D" prompt, "S" can be entered to begin scanning titles at the beginning, or "S" followed by a number to begin scanning at a specific file. Scanning will show the number of the files, number of blocks, number of times downloaded, and title and filetype of the file. "SN" can be used to display any new files, and "SS" can be used to obtain a "Sorted Scan". When entering "SS" a user will be prompted for which of three fields to sort on, Number of Blocks, Number of Times Downloaded, or Alphabetical. "SU" can also be entered to scan for unvalidated files. "SN" will scan for new files on the current library, "SA" will scan for new files on every library. Spacebar will abort a scan on the current library, the slash "/" will abort an "SA". Detailed information about a file may be obtained by entering "A" followed by the file number. Entering "A" alone will default to the first file. This will show, in addition to the Scan information, the user and date of upload, computer type, and commented information about the file. When doing an "A)bout" the user is prompted for "A)bout next file or D)ownload this file" and if it is a SEQ file he has the additional option to "R)ead this file". He need only enter one of the letters to exercise the option. If he has been doing an "About" and presses RETURN, pressing "A" will default to the next file to begin doing "About" again.

KILLING AND EDITING FILES:

A system operator or sub-operator or the user that uploaded the file may enter "K" followed by the file number to delete it. He will be asked if the file should be scratched from the disk, and if he enters "N" to this prompt, and the printer is on line, the name of the file will be printed on the log, along with asterisks before and after to show the sysop that there is a file on the disk that is not on the directory. A log entry is also made with the word "Kill:" and the file name. Users will have the number of credit points deducted equal to the number of points they were given when they uploaded the file when they kill a file.

A system or sub-operator, or the user who uploaded the file may enter "E" followed by the file number to change information about it.

READING A SEQ FILE:

A user may enter "R" followed by the number of the file to display the contents of a sequential text file. He may also select "R" to read a SEQ file when doing an "A)bout" a file.

SUB-OPERATORS:

A user may enter "V" to view the sub-operator (SubOp) of the current library. Subboard maintenance can be accessed by the subop or system operator by entering "Z". There are two options here:

1) Edit the entry file. The entry file of a library is the file that is displayed when entering the library if not in "Expert Mode". If there is already an entry file, it will be loaded into the editor.

2) Edit board detail. This option allows the change of the title, current library operator, open/closed status, and if in pseudo-local or local mode, access level and configuration (device and drive).

VALIDATING FILES:

Subops and system operators can "see" all "unvalidated" files. They can download them and verify that the file working files. Subops will not have credit deducted, nor will the download count against the number of downloads per day and the time remaining is not checked when subops download in their own libraries. Subops or system operators may validate files by typing "V" and the file number of the first file they wish to validate. Each unvalidated file from that number on will then be listed and he will be given the choice of validating it or not. Unvalidated files will have a leading asterisk and will show zero for times downloaded. When a file is validated it will indicate that it has been downloaded one time. A user who uploaded a file that is yet unvalidated will have full access to read or download it, but will NOT have the power to validate it.

COPYING/MOVING FILES:

If a user is in TRUE local mode from the console, when he enters the "UD" system, the "copier" protocol is loaded. If he wishes to copy a file, he simply can enter the "Dx" command, and the system will tell him the approximate copy time, and allow him to

send it to any device and/or change the name of the file. If no device is specified for the destination device, it will default to one number higher than the source device. (NOTE: This function will ONLY copy files to drive #0. Any device may be the target device, but the file will be copied to drive #0).

If a user is in local or pseudo-local mode he may enter "M" and the file number and he will be prompted for the new directory to "Move" the file to. If an "L" is entered at this prompt, all available boards will be listed. If the directory is to a different device/drive, the file will be copied to that device/drive, otherwise only the directory entry is moved. If the file is moved an option will be given to "Scratch" the original file from the source device/drive when the move is completed.

FULL DISK EXCHANGE:

Users may enter "UX" at any prompt to enter the full disk exchange area. The file "s.UX" will be read regardless of "Expert Mode" status.

Full disk exchange operates very similar to the "UD" section except that the files are not placed in directories. A listing of files may be obtained by entering "$" or "S". The user will be prompted for a "pattern" and if no pattern is given the default pattern is "*". "UX" is subdivided into libraries just as "UD" is and each can have its' own subop, entry file, access and configuration. Multi upload and download is the same as in the "UD" section.

FREE UD/UX LIBRARY:

While defining the libraries at configuration or using the "diredit" program, you may specify any of your libraries in the "UD" or "UX" to be "FREE" libraries, that is, no credit will be deducted from the user when he downloads from these areas. To specify a "FREE" board simply start the title of the board with ".1." using the "diredit" program or the "Z" command for local maintenance. In a "FREE" download board the number of files per call and credit points are not checked prior to starting a download.

6- ELECTRONIC MAIL SUBSYSTEM

EMAIL

This is IMAGE BBS's private mail section. If a user has access to this section, on logon he will be informed if he has mail waiting, given the option to enter the Email subsystem at this time, and upon entering the mail system he is told how many messages he has waiting. A user may also enter the EMail subsystem by entering "EM" at any prompt. The prompt for this section is "E-Mail: ".

LISTING MAIL:

To obtain a list of the mail a user has waiting in the order they were received, he would enter "L" at the "E-Mail: " prompt. He can also enter "L" followed by a number to begin listing at a specific message. This will list all messages, reporting the handle of the sender, date it was sent, and subject of the message.

READING MAIL:

To read the next message or to begin reading mail, a user just needs to press RETURN at the "E-Mail: " prompt. When he has read the last message he will be told "No more mail." To read any specific message he would simply enter the number of that message. To read all messages, he would enter "A" and all of his mail would be presented to him in succession. Entering "N" at the prompt would allow him to read any new messages since his last call.

RESPONDING TO A MESSAGE:

To respond to a message means to send a private reply message to a user in response to a message that was sent by him. After just having read a message, a user is prompted with the question "Reply?" along with the handle of the user that he received his message from. The user need only answer "Y" to reply to the author. To respond to a specific message from the list of messages received, a user may enter "R" followed by the number of the message to respond to.

SENDING PRIVATE MAIL:

A private message can be sent to any user by entering "S". The system will request either the handle or user ID number of the user who is to receive this message. If the ID number is entered the records are searched and the handle (if found) is shown and the sender is asked to confirm that that is who he intended to send the message to.

DELETING MAIL FILES:

A user may enter "D" to delete all of his mail. This option will also appear when they leave the E-mail subsystem with any command if his mail is still filed on the disk. This encourages users not to leave their mail on the disk, so that it does not waste space.

VERIFYING MAIL:

A user may verify another user's mail by entering "V". The system will check to see if that other person has any messages, then go through each one, and report how many of those messages are from the user performing the verify function.

FORCED MAIL

A user with remote maintenance access may send forced mail to another user by entering "FM" at the e-mail prompt. He will be asked whether he wants to create or remove a "forced mail" file and the handle of the user the forced mail is for.

NOTE: Forced mail is that mail that is read to a user when he logs onto the system. It is unabortable and cannot be deleted by the user.

When reading a forced mail file, if either of the last two lines contain the single word "ERASE", the file will be erased. If either of the last two lines contain the word "OFF" the user will be logged off immediately after reading the forced mail. Note that "ERASE" and/or "OFF" must both be entered with all capital letters, no quotes, followed by a RETURN.

LEAVING THE E-MAIL SUBSYSTEM:

A user may leave the E-mail subsystem by typing "Q" or by typing a command to take him to any other subsystem.

NEWS FILES SUBSYSTEM

The news files are structurally different from the other file areas of the board, such as Movie Files and Program Files and for that reason they will be covered separately here. Entering "NF" at any prompt will take you to the News File library. This section is where users can re-read system news files and you can write new ones. If you have "FILE MAINT ACCESS" you will be placed in "News-Maint".

ADDING A FILE

To add a file to a directory just press "A" at the prompt. You will be asked for the Title. This is what the user will see in the list. It will also be used to name the file on disk where the actual text will be stored. When entering a news file if the file name begins with a "$" (dollar sign) it will be a "repeating" news file, shown to users each time they log on to the board. All News files are non-abortable the first time they are shown to a user.

READING NEWS

Entering the number (see LIST) of a file will read that file.

KILLING A NEWS FILE

A maintenance operation, entering "K" followed by the number of the news file you wish to kill.

EDITING A FILE

If you have maintenance access, you may enter "E" followed by the number of the entry to edit. You will then be able to change any of the information you entered using "A" and the file will be loaded into the editor for editing. When the file is re-saved you will be given the opportunity to update the date of the file so it will again appear as a new file.

LIST

Entering "L" or "Lx" (with x as the starting number to list from) at the prompt will list all the news files available to that access level. Each will be given a number and if you have News-Maint access, you will also be able to see access information for that file.

LEAVING

Entering "Q" will return a user to the main command level. A user may also go to any other section of the board by entering the appropriate command.

8- TEXT, MOVIE AND PLUS FILES SUBSYSTEMS

THE FILES LIBRARIES (MOVIE, PLUS, TEXT)

There are three sections of the IMAGE BBS that provide very different functions but the sections themselves are functionally identical. They use the same routines and all of the same commands. We will describe the MOVIE FILE LIBRARY here but the same description also applies to the TEXT FILE LIBRARY (TF) and the PROGRAM FILE LIBRARY (PF).

MOVIE FILE LIBRARY

Entering "MF" at any prompt will take you to the Movie-File library IF you are in Commodore color graphics mode. This section is where users can read text files, standard CBM Sequential files that can contain cursor movement, colors, and uppercase graphics. (also known as "movie" files). If you have "FILE MAINT ACCESS" you will be placed in "Movie-Maint 1". The Movie File libraries have the ability to have sub-directories and sub-directories in each sub-directory. The number that follows the prompt will tell you what level you are in. One is the level you enter when first selecting "MF".

MAKING SUB-DIRECTORIES

To make a sub-directory you must have Movie-File Maint access. Select "A" at the "Movie-Maint" prompt. You will be asked for the Title. This is the title that the user will see when listing the directory. It has NO relation to the actual file name to be created.

Next you will be asked for the file name. Here enter d. followed by the name of the file you wish the sub-directory to be stored under on the Directory disk. For example, if you enter d.games, the system will add a "m." in the name and the sub-directory will be written to "d.m.games".

After that you will be asked for the access. This will decide what access levels can see that sub-directory when listing the files available. Access is determined from the chart shown earlier or by entering a "?" and then answering "Y" or "N" for each group.

Next you will be asked for how many credits to charge the users for entering this sub-directory. You can charge credits for entering the sub-directory and then not charge credits for using the files, or not charge for the sub-directory nor for the files, or not charge for the sub-directory and charge for each file. Or you need charge nothing at all if you wish. It's up to you!

ADDING A FILE

To add a file to a directory or sub-directory, just go to the directory or sub-directory where you wish to add the file and press "A" at the prompt.

You will be asked for the Title. Again, this is what the user will see and has no relation to the actual file name that will be viewed when this item is selected.

Now you will be asked for the file name. Enter the filename of the file as it appears on disk. (Special Note: In the PFile area when entering a file name you DO NOT enter the "+.", the file

program will add that.) Now you will be asked the device number where the file can be found. Enter the device number and press RETURN. Next you will be asked the drive number where the file can be found. If you do not have a dual drive (or the file is not on a dual drive), just press RETURN.

Next enter the access level you will allow to view this file. (Remember, you can enter a "?" at the access prompt to let the program help you calculate the access level). Then enter the credits (if any) you will charge users for viewing this file.

ENTERING A SUB-DIRECTORY/RUNNING A FILE

Entering the number (see LIST) of a file or sub-directory will read/run that file or take you to that sub-directory level.

If you wish to go back one level when in sub-directories (for example, if you are at "Movie-Maint 2" and wish to return to "Movie-Maint 1"), enter "B" or "<" at the prompt. Entering "M" at the prompt will return you to "Movie-Maint 1" (the Main Directory) from any level.

KILLING A FILE/SUB-DIRECTORY

A maintenance only operation, enter "K" followed by the number of the file or sub-directory you wish to kill. You will also have the option of scratching the file off the disk. Killing a sub-directory is not possible if there are any files listed in that directory.

EDITING A FILE/SUB-DIRECTORY

If you are in Movie-Maint, you may enter "E" followed by the number of the entry to edit. You will then be able to change any of the information you entered originally.

LIST

Entering "L" at the prompt will list all the files and/or sub-directories available at that level. Each will be given a number and if you have Movie-Maint access, you will also be able to see the actual file name, access and credit information for that file or sub-directory, and in addition, the device and drive info for files.

LEAVING!

To leave the files area simply enter "Q" or a command to go to any other area of the BBS. Entering "Q" will return a user to the main command level.

BULLETIN BOARD LISTING PROGRAM

The "BB" command will take users to a bulletin board listing program that will allow users to add, list, or delete the numbers for other bulletin board systems. When first entering the system they are presented with a menu of options and arrive at the BBS database prompt "dBASE: "

BB COMMANDS

The active commands for this module are:

L)ist BBS Numbers
Q)uit To Main Menu
D)isplay Notes
A)dd A Number
R)emove An Entry
E)dit An Entry

The last three options will only show up to a user if he has post and respond capabilities.

LISTING A NUMBER

Entering "L" will bring up another menu of options which will allow the users to define the listing they would like:

B)aud rate
A)rea code
C)omplete listing

Entering "B" will prompt for the minimum baud rate they would like to search for and then the listing will begin, listing only BBS's that can handle that baud rate.

Entering "A" will prompt for the area code they would like to search for and all those in that area code will be listed.

Entering "C" will list all boards entered into the data base. Pressing the "space" bar or slash "/" key will abort any of the listings.

ADDING A NUMBER

Entering an "A" at the "dBASE" prompt will allow those users with post/response capabilities to add a number to the listing. The user is prompted for the complete information on the board he wishes to add, including the board name, phone number, baud rate, hours of operation and several characteristics of the system, such as whether it charges a fee, has u/d areas, has on-line games and is PC Pursuitable, etc. When the area code and phone number is entered, the program will pause to check the current list for that number. If it is already in the list, the user will be told, and returned to the dBase prompt. After all prompts have been answered the results are shown to the user and he is given the opportunity to change any of them, to continue or to abort. Aborting takes him back to the "dBASE" prompt, while continuing will then add it to the list. If there are any deleted numbers it will be placed in the first deleted slot available, otherwise it will be added to the end of the list.

REMOVING A NUMBER

Only the sysop or a user with maintenance access or the user that posted a number may remove it. Anyone else attempting to remove a number will be told that it can only be removed by the user that posted it.

When "R" is entered a board name will be prompted for. The list will be searched and, if it is the same user that posted it, it will be deleted.

EDITING INFORMATION

A sysop or the user who posted a BBS number may edit the information by typing "E". The program will ask for the number of the entry to edit, and then check to make sure the user has access. He/she may then change any of the information in the entry, and re-file it.

DISPLAY NOTES

Entering "D" will bring up a listing of the abreviations used by the bbs listing program. These include CBM for Commodore, etc.

ALL DONE

Entering "Q" will return a user to the Main level, entering any other subsystem command will take them to that particular subsystem.

10- VOTING BOOTH SUBSYSTEM

VOTING BOOTH

Entering "VB" at any prompt will take you to the Voting Booth. If you have REMOTE MAINT ACCESS (see FLAGS), you will see the prompt "Vote-Maint->", otherwise you will see "Vote->". If there are no topics available and you do not have Vote-Maint access, you will be returned to the main command level.

ADD A TOPIC

Only available in Vote-Maint. This allows you to add a new topic to be voted on. You will be asked for the subject of the question. Enter a short but descriptive title and press RETURN. Next you will be asked for the access level this topic may be seen by. This is set just as you set the access levels in the other areas of the system. Enter the access. If you do not know the number to enter, enter "?" and then answer "Y" to each access level you wish to see the topic. Now you will be placed in the IMAGE editor. Enter the text of the question. The answers will be entered later, so only ask the question here. When done, enter .S at the left column to save the text and continue to the next section. You will now be prompted to enter the choices that the user will have for this topic, and a short amount of text for a description. When all your choices are entered, press RETURN at the CHOICE #-> prompt to save the topic. If you enter 9 choices, (the limit), the Voting Booth will automatically save the topic.

KILL A TOPIC

This function only available to users with Vote-Maint access. Just enter "K" followed by the number of the topic (see LIST below) to be killed. You will be asked to verify that you wish that topic killed, and if you answer "Y", the topic will be killed and erased from the disk.

VOTE/VIEW RESULTS

Available to all users, entering the number of a topic will allow you to vote on it (if you have not yet voted on that topic) and/or view the results. The system uses ID numbers and handles to keep track of who voted, so that a user cannot vote twice on the same topic.

LIST TOPICS

Available to all users, entering "L" at the Vote prompt will list all topics available to that user's access level and the date each topic was created. If you have Vote Maint access, it will also list the access level for each topic.

LEAVING

Users may leave the voting area by entering a "Q" to return to the main command level or by entering a command to take them to any other area of the system.

11- USER LIST SUBSYSTEM

USER LIST

Available to all users who you decide to allow it through the user flags is the USER LIST, which will list information for any or all users currently on your system. They may be listed according to specific attributes, or simply listed completely.

QUICK LISTING

If desired, you may get a "quick list" by typing a "Q" at the first prompt. You will be given the option to list "N"umerically9 by ID number, or "A"lphabetically, by user handle. This list will show you the handle and ID numbers only. You will be given the option to start the list at any number (for numeric list), or alphabetic character(s). (for alphabetic list).

REGULAR LISTING

Use the "R" command at this prompt if you wish to search for a particular user or attribute, or want more information than just the handle and ID, for the regular listing. This will first ask you to enter attribute(s) to search for. If you wish to list only users with any particular attribute or attributes, define them here. When you are done, or if you wish to list all users, simply hit return at this prompt. It will then ask for a number to start the listing from. The program will then start the list from that number, and continue until the end. The space bar or slash key will abort the list at any time. If a user has remote maintenance access, the list will show all information, handle, ID number, last call date, computer type, area code and phone number, access group, and real name. If the user does not have remote maintenance access, it will only show the handle, ID number, last call, computer type, and area code.

GOING BACK TO MAIN

When finished using the user list, simply hit a carriage return or "Q" at the prompt to return to the main command level.

THE IMAGE ML EDITOR

The editor is where any messages on the BBS will be entered. It works simply by letting users type anything they want to type.

ENTERING TEXT:

Text can simply be typed into the editor. At the end of each line, the editor will "Wrap" words, so that words don't get chopped in half. When you reach the end of the text buffer, or if you type a period (".") at the first column, you will be automatically put into Command Mode (see below). As the sysop, you can define how many lines of text a user can enter in the editor. See the section on configuration (Access Groups) in this manual for more information. If a user is in local or pseudo-local mode, he will automatically be allowed 253 lines in the editor. (NOTE: the possibility of running out of memory, thus causing the BBS to stop running exists here, as the editor will keep filling it up as you add text. To help with this, entering the editor in local or pseudo-local mode will report memory left. If it gets too low, BE CAREFUL!)

EDITOR COMMANDS:

Editor commands are used by typing a "." (period) as the first character on a line. The editor will then print "Command:" and wait for you to press a key. This is called Command Mode. If you press the DELETE key or the RETURN key, it will remove the "Command:" prompt, and return to the normal editor. If you press a key that is unrecognized by the editor as a command, the editor will exit to basic to see if you have added one before assuming it is an illegal command. the "+.WF" program uses this technique extensively, and the "put", "get", and "view directory" commands in the main program, "im" also uses it. If you wish to program your own commands, we suggest you examine these files to see how it is done. (No documentation is available for this as yet).

If you press a key that corresponds to a command, the editor will print the command, and wait for you to either enter a line range or press the RETURN key.

Most commands allow a line range to be entered after the command. A line range can be entered in one of the following formats:

```
"x"    - Just line #x
"x-"   - Line #x to the end
"x-y"  - Line #x to #y
"-y"   - Beginning to line #y
```

Any delimiter may be used in place of the "-".

The commands available in the editor are grouped into related commands, and discussed here.

EXITING THE EDITOR:

There are two ways to get out of the editor. The first way is to abort the message you were typing, with the "A"bort command. The second way is to save the message with the "S"ave Text command. Neither the "S" or "A" commands allow line ranges.

READING WHAT YOU HAVE TYPED:

If you wish to read the text you have already entered, you would use the "R"ead command. "R" will print each line just as it was typed. You can also "L"ist the text, which will insert line numbers. These line numbers can be used in the ranges for other commands. The last way to read your text is "M"CI Read. This will put the text through the Message Command Interpreter: Any MCI commands you entered will be executed as you read it. If you do not supply a line range with "R", "L", or "M", it will default to all of the text in the buffer.

MANIPULATING TEXT:

"D"elete is used to Delete lines of text. Any line range you enter after typing the "D" will be deleted from the buffer. If you do not specify a line range, the last line of text entered will be deleted.

"E"dit is used to change lines of text. When a line is edited with the "E" command, it will print the line number, and then the line of text, just as the list command does. Then it allows you to type the new line below it. (See the Section on Control Keys for Editing). If you press DELETE or RETURN as the first character on the line, the editor will respond with "(No Change)" and continue normally. If you press "." as the first character, it will respond with "Command:Exit" and abort the Edit command. If you don't specify a line range, "E" will default to the last line of text entered.

EDITOR MODES:

The "I"nsert command allows you to enter Insert Mode. This is shown by printing "I" and then the line number that you are inserting at. The line you specify will be where you start to insert. If you do not specify a line, it will default to the first line of text. When you enter each line of text, it will push the rest of the text down in the buffer, then put your line in. You can exit Insert Mode by typing a "." as the first character on the line. This will respond with "Command:Exit" and go back to the normal editor.

The "O" command toggles Line Numbering Mode on or off. This mode, when on, will print the line numbers as you type.

SHAPING YOUR TEXT:

The "J"ustify command allows you to format your text in one of 5 different ways. After you enter the "J" command, it prompts you for "(C,E,P,L,R)" These are the five Justify Commands. Press the key corresponding to the function you want, and the editor will print the name of the command. Then it allows you to enter a line range. If you do not specify a line range, the Justify commands default to all of the text.

The Justify commands are:

"C"enter - Center text.
"E"xpand - Insert spaces between words to fill out lines.
"P"acked - Remove all extra spaces.
"L"eft - Remove leading spaces.
"R"ight - Push text over to right margin.

The "B"order command will put a border around your text. It will prompt you for a Border character to use. This character will be used to build the border. If you do not specify a line range, it will default to all text entered. If there is no room on any line to add the border, it will ignore that line and border the rest of the text, so make sure you have enough room for the border before using it.

The "C"olumns command allows you to change the number of characters the editor will allow you to type on a line. (Between 22 and 80). If you do not specify a column length after the command, it will print the current column length.

STARTING OVER:

The "N"ew (Clear Text) command will re-start the editor, and erase all text you have typed.

SEARCHING FOR TEXT:

The "F"ind command allows you to search for any occurrence of a character, word or phrase. If no line range is entered, all text will be searched. Find will prompt you for the text to search for, and will list all occurrences of it.

DISK ACCESS:

(These commands are available from local/pseudo-local mode only) The "P"ut and "G"et commands allow you to load and save files from any device and drive, edit them, rename them, etc., and resave them to the same device/drive, or a different device/drive if desired. The "G"et commands will also append the file to the text, if there is existing text in the editor. This can be handy for working with seq files. The "$" (View Directory) command will allow you to view the directory of any device and drive, with a pattern if desired.

GETTING HELP:

While you are in the editor, you may read all of the information in this section of the manual by entering either "?" or "H" for Help.

CONTROL KEYS:

Certain control keys are used to edit your text while you are typing it. Any character that you delete with the DELETE key can be "Re-typed" with Ctrl-U. Other Control keys are listed here:

Key	Function
(DELETE)	Move back one char.
Ctrl-B	Move back to beginning of line
Ctrl-D	Delete character under cursor.
Ctrl-I	Insert character under cursor.
Ctrl-N	Move forward to end of line.
Ctrl-O	Duplicate all text (Repeat).
Ctrl-U	Re-type one character from buffer. (Move forward one char.)
Ctrl-V	Re-print (verify) current line.
Ctrl-W	Move back one word.
Ctrl-X	Abort line.
Ctrl-Y	Re-type word from buffer. (Move forward one word)

MESSAGE COMMAND INTERPRETER:

The Message Command Interpreter (MCI) allows you to do a variety of things within messages you type. Each MCI command consists of the british pound character, then a Command character, then numbers or letters. If a letter, it may be entered either in upper or lower case. In general, MCI is what "spices up" an IMAGE BBS. It allows you to add color, cursor movement, and a "personal touch" to your BBS. (NOTE: Replace the "#" character with the british pound key to the right of the minus sign on your keyboard).

The MCI commands available in IMAGE BBS are:

Command: "#AnTEXT#" - About
Description: This command compares an MCI variable with the "TEXT" in the command. For a list of MCI variables, see the "#V" command.
Example: #A2SYSOP#
This would check if the user's handle was "SYSOP", since "#V2" is the user's handle,

Command: "#Bn" - Bells
Description: This command will send (n) bell characters to the user. If the user's terminal supports bells, he will hear them.

Command: "#Cn" - Color
Description: This command sets the current printing color to the one indicated. (n) is one of the following:

1=white 2=red 3=cyan 4=purple 5=green 6=blue 7=yellow 8=orange
9=brown j=pink k=gray1 l=gray2 m=green2 n=blue2 o=gray3

Command: "#Dn" - Jump on not equal
Description: This command skips (n) lines if the result of the last compare command ("#A" or "#T") was NOT equal.
Example: #A2SYSOP##D1
This would skip one line if the user's handle is NOT "SYSOP".

Command: "#En" - Jump on equal
Description: This command skips (n) lines if the result of the last compare command ("#A" or "#T" was equal.
Example: #A2USER##E1
This would skip 1 line if the user's handle is "USER".

Command: "#F1" - Form feed
Description: This command sends a Clear Screen character to the user.

Command: "#Gn" - Get character
Description: Will stop printing until the user presses a key. The key that was pressed will be returned in the variable AN$. (MCI variable #V7). If n=1, it will use uppercase only, if n=0, it will allow both uppercase and lowercase.
Example: Press a key:#G1
This will prompt the user to "Press a key:" and then wait for them to press one.

Command: "#Hn" - Backspaces
Description: Will print (n) backspaces (Deletes).

Command: "#In" - Input text
Description: Stops printing and allows the user to type a line of input. The text they type will be put into AN$ (MCI variable #V7). If n=1, it will use uppercase only, if n=0, both uppercase and lowercase will be allowed.
Example: Enter your name:#I1
This will prompt the user to "Enter your name:" then let the user type it. The name will be put into the variable AN$, and will be all uppercase.

Command: "#Jn" - Jump
Description: This command will skip (n) lines.
Example: #J1
This will skip the next line.

Command: "#Kn" - Kolorific mode
Description: Kolorific mode is a text printing mode that changes the color of each character. If n=0, it will turn Kolorific mode off. If n is not 0, it will turn Kolorific mode on, and start with Color #n.
Example: #K2
This turns Kolorific mode on, and starts with the color RED.

Command: "#Ln" - Printer
Description: This command controls printer mode. If n=0, it stops printing to the printer, if n=1, it starts printing. When the end of the line is reached (Carriage return) it turns printer mode off again.
Example: #L1Hello
This would print "Hello" to the printer.

Command: "#Nn" - Newlines
Description: This command prints (n) carriage returns, or 'newlines'.

Command: "#Oc" - Print 19 characters.
Description: This command repeats a character 19 times. This may seem strange, but it is useful for making menus, etc. Replace "c" with the character wanted.
Example: *#O-#O-*
This would print the following:
"*------------------*".

Command: "#Pn" - Print mode.
Description: This is what is sometimes referred to as 'Cursor dancing', Basically, it allows each character that is printed to be printed as several characters, usually with characters to move the cursor, etc. Replace (n) with the print mode number. There are nine very powerful print modes in IMAGE BBS. We suggest you try to come up with some interesting ways to use them. It is possible to create an entire "movie" file inside entirely within the IMAGE BBS editor with these commands!

0 - normal printing
1 - character/backspace/character
2 - character/8 spaces/8 backspaces
3 - character/backspace
4 - space/character/2 backspaces/character
5 - character/bell
6 - character/2 crsr lefts (prints backwards)
7 - character/crsr left/crsr up (prints up)
8 - character/crsr left/crsr down (prints down)

Print modes 6 through 9 will only show up correctly to a Commodore user in color graphics mode. The print mode is set back to 0 at the end of each line.

Command: "#Qn" - Reset MCI defaults
Description: This command turns off printer mode, reverse mode, and uppercase mode, sets the print mode to 0, and sets the print speed to 0. If n=0, then the current color is set to the default color. Otherwise the default color and current color will be set to n.

Command: "#Rn" - Reverse mode
Description: If n=0, it turns reverse mode off, if n=1, it turns reverse mode off. Reverse mode also turns off at the end of every line.

Command: "#Sn" - Print speed
Description: This command sets the speed of printing. (n) is the number of tenths of a second to pause between each character.

Command: "#TnTEXT#" - Test variables
Description: Used in conjunction with #d and #e, will compare a variable to "TEXT" (Similar to #A). Variables that can be compared with this command are:
n=1 will test user input, (an$)
n=2 will test access group. (ac%)
Example: #T29##D1
This would compare the user's access level to 9, and skip the next line if it is not equal.

Command: "#Un" - Uppercase graphics
Description: Used to allow full uppercase graphics mode, using the "shift" graphic keys along with the others. n=1 will turn on, n=0 will turn off.

Command: "#Vn" - MCI variables
Description: Prints out the desired MCI variable. (n) is the number of the MCI variable. MCI variables are:

0 - D1$ (Current date/time)	8 - D2$ (Board name at entry)
1 - LD$ (Last call date)	9 - D3$ (Last user on system)
2 - NA$ (Users handle)	j - AK$ (38 char line + CR)
3 - RN$ (Users real name)	k - D5$ (True last call)
4 - PH$ (Users phone number)	l - D4$ (Current ml protocol)
5 - BN$ (Name of BBS)	m - AG$ (Access group name)
6 - B$ (System variable)	n - Future expansion
7 - AN$ (Last user input)	o - Future expansion

Command: "#Wn" - Wait
Description: Delay (n) seconds before proceeding.

Command: "#X1" - Abort file
Description: Skips the rest of the lines in a file.

Command: "##c" - Leading characters
Description: When you use #%v (below), this specifies the number of digits to print. Also it specifies leading 0's or spaces.
If (n) is a number, then it sets the number of digits to that number. (If n=0, then it users however many digits there are in the number to be printed).
If (n) is a space, it sets leading spaces, and does not affect the number of digits.
See the example for #%v

Command: "#%v" - Print integer variable
Description: This command prints the value of any one-letter integer variable with or without leading characters.
Example 1: ##4## #%a
If a%=1, this would print " 1".
Example 2: ##2#%a
If a%=1, this would print "01". If a%=123, this would print "23".
Example 3: ##0#%a
If a%=1, this would print "1". If a%=42, then it would print "42", etc.

Command: "#$v" - Print string variable
Description: This command will print any one-letter string variable.

Command: "#<nn" (Use the back-arrow key, not "<")
Description: This command tabs the cursor to column #nn. If you wish less than ten columns, use a leading zero.

13- ONLINE TERMINAL

THE IMAGE TERM PROGRAM

IMAGE BBS also has a built in 1670/Hayes compatible terminal program for dialing out to other BBS's without having to take your system off-line. It is equipped with several features, including a phone book, auto dialer, X-modem and Punter file transfer, and full color graphics capabilities. It is, for the most part, self documenting, with several on-line menus to help you.

USING THE TERMINAL PROGRAM:

To load and use the term program, press the back arrow key at system idle mode, and the term will load and display the opening menu, along with several parameters displayed on the top right window of the screen. To change any of these parameters, select the "Term Parameters" option from the main menu. From here, you will be able to change ASCII/C-G mode, baud rate, U/D proto, or dial mode. (tone or pulse). Other option on the main menu include terminal mode, file operations, phone book, disconnect, return to the BBS environment, and send line break. (For the MERIT system).

THE PHONE BOOK

Here is where you may dial numbers entered into your "s.phonebook" file, when you configured your BBS, or any other number that you wish. When you choose the phone book option from the main menu, you will see the first five numbers on the list, (if you have the file), along with "dial number not shown", "next page", or "previous page". Simply hitting return at this prompt will take you back to the main menu. Selecting next or previous page will go on through the list in your phonebook. Selecting any of the numbers, or "Dial number not shown", and entering the number when prompted, will then prompt you for the autodial (repeat) option. If the autodial option is selected, it will keep track of how many tries for that number on the screen. (Press "/" to abort the autodialer). Once a connection is made, you will be put into term mode for the connection.

FILE OPERATIONS

While in terminal mode, you may go back to the menu on-line by pressing the back arrow key. This will allow you to change parameters or use the file operations functions. These include getting a disk directory, sending a disk command, changing device/drive, read/send a SEQ file, and upload/download functions, including multi uploading and downloading.

14- MAINTENANCE FUNCTIONS

INSTANT LOGON:

The "instant" logon feature is reserved for the sysop, for it can only be used at the main console. It is meant for a fast, easy way for you to logon to your BBS to do maintenance functions, posting, or anything you would normally do on a call. The main difference from a regular logon is that none of your stats will be updated or saved to disk, and your last date will be set to your logon time. To use the instant logon feature, simply hit an "I" at the Hit Return prompt. You will be prompted for your password, and immediately taken to the main prompt.

MAINTENANCE FUNCTIONS

There are several maintenance commands, some available only at the main prompt, some at all prompts, some from local or pseudo-local mode only, and some to users with remote maintenance access. They are described in this chapter. Here is a brief synopsis of the commands, followed by a more complete description. Commands marked with an asterisk ("*") are available only from local/pseudo local mode.

```
*CP -- Online file copier
*ED -- Edit a users stats.
*PC -- Change password on the password subboard
*R  -- Run + file (Must be on plus file disk)
 RS -- Reserve a new account
 VF -- View feedback/new user feedback/error log
*WF -- Online "word processor"
```

LOCAL MAINTENANCE COMMANDS:

USER EDIT (ED)

This command is used to edit your users information whenever needed. To use this function, you would type "ED" (without the quotes) at the main prompt. After doing this, you will be taken to a prompt that asks you to enter the handle or ID number of the user that you wish to edit. If entering the ID number, do not enter the identifier of your BBS with it. (Example, if your identifier is "SS", and you want to edit user number 50, you would enter 50, NOT SS50). The system will then load the users stats into memory, and allow anyone with pseudo-local maintenance to change anything they wish. One exception to this is the password, which can be seen or changed ONLY by the sysop. (ID#1). You will see a page of information on the screen. If you wish to change anything, simply type it's number at the prompt, or "N" for the next page of information. (There are two pages). Then enter the new information. Don't worry if you make a mistake, you can change it again if you wish, nothing will be permanently changed until you answer "Y" to the "save changes?" prompt when you are done. If the information you wish to change concerns the users "flags", that is, certain functions the user can access, then you will get a new menu, with each function listed out. Some of these functions simply "toggle", (switch from "yes" to "no", while others need numeric information. The menu for this will appear something like this:

```
Non-Weed Status     : No
Credit Ratio        : 2/1
Local Maint         : No
Post/Respond        : Yes
U/D Access          : Yes
Max.Editor Lines    : 50
Unlimited D/Ls      : No
Remote Maint        : No
Email               : Yes
User List           : Yes
B.A.R./Log View     : No
Submaint            : No
Files Maint         : No
MCI Access          : Yes
UDs At Primetime    : No
```

These flags will be set to the default information for the access group that you give to this user whenever his access is changed, and then may be "customized" as desired any time after that. Changing any of these will NOT affect any other access function of that user. You may also delete an account or reserve an account with this function by changing the users handle. To delete his account you would change his handle to an "↑" (up arrow). The board will prompt with "Delete this user?" before any action is taken. This will delete his account, and open it up again for a new or RES user. If it is a RES account, the program will prompt for a password, number of credits, and access level. (More on this in the "RS" function below).

PASSWORD CHANGE (PC)

This function will simply allow you to change the password if you have designated any subboards as a password subboard. It will show the old password, and allow you to type in a new one twice, to make sure you have it correct. If the password typed is the same as the old one, or a carriage return, or typed in differently the second time, the procedure will be aborted and the old password kept.

ONLINE COPIER (CP)

This command allows you to access the online file copier, patterned after the popular "copy-all" program by Jim Butterfield. Our thanks go to him for supplying us with the source code to help us write this version. The online copier will copy PRG, SEQ, and USR files from one device or drive to another with little effort. (NOTE: It will NOT copy files to the same device and drive. Use the "DC" command for this, with the standard Commodore DOS formats. [ex. c0:file2=file1]. It will also not copy REL files. Use copy-all off line to do this).

FILE WRITE/EDIT (WF)

You may access the IMAGE editor to write or edit any sequential (SEQ) file, as a mini-word processor. When you type the "WF" command at the main prompt, the editor will load, and you will be able to use it to put and get files from any device and drive you may have on line. This makes it easy to write, edit, or append files. When using the '.g' (get) command you will be prompted for a file name, then for a device and drive that the file is on. The file will be loaded and you can edit it as necessary, or create a new file if you wish. When finished, use

the ".p" (put) command to put it where ever you wish, keeping the text intact in memory, or with the "s." (save) command, to save and prompt for a new file. Again, you will be prompted for a 'filename' and, if you used 'get' the file name you used will be there as a default filename. You will also be prompted for device and drive. The default is to 8:0 if you just enter RETURN. If the file already exists you will be given the option to replace it, append to it or quit (abort) the 'put'. There are also additional editor commands built into the "WF" function that are not normally available from the editor subsystem. They are described as follows:

"Q"uery:
This command will simply return to the editor opening message, allowing you to see how many lines are used so far, free memory, etc.

"Z" (Strip)
This command will strip out (delete) the first character of each line, and the last character, if it is a chr$(140). This function is meant to help translate some other BBS files to IMAGE format.

"U"nborder
This command will remove a border or partial border that you have done, if you change your mind. It removes the first and last characters from each line IF they are the same character.

RUN A PLUS FILE (R)
This command allows you to run any plus file you have on your plus file disk from the main prompt. When "R" is entered you will be prompted to 'Run +.' and you will enter the name of the file. Pressing RETURN will return you to the Main command level.

READ A SEQ FILE (RDx,y)
This command will allow you to read any SEQ file on any device and drive on the system. Follow the command with x=device and y=drive to direct to a specific device and drive, or just x=system disk number to direct to a system disk. No entry will default to device 8, drive 0. You will be prompted for a filename, enter the name of the SEQ file you wish to read.

SEND DISK COMMAND (DCx,y)
This will allow you to send any Commodore DOS command to any device and drive.

READ BLOCKS FREE (BFx,y)
This will update and report blocks free on any device and drive.

DISK DIRECTORY (DRx,y)
This command will give a directory (with optional pattern) of any device and drive.

CHANGE DEVICE NUMBER (CD)
This command will allow you to software change the device number of any device on line.

UPDATE MEMORY (MM)
This will force a "garbage collection", reporting the memory currently available.

ADD CREDITS (CA)
This command allows you to add credits to a user who is online.

LOCAL MENU (??)
This will print a menu of local commands.

REMOTE LEVEL MAINTENANCE COMMANDS:

VIEW FEEDBACK (VF)
Only those with remote maintenance access may use the VF function. When entered it will bring up a menu of possible options showing the number of feedback, new user feedback and error log entries. If the user is in "Local" or "pseudo-local" mode he will also be given an option to delete the entries. Entering "N", "E", or "F" will allow him to read the entries beginning with the first entry or with any entry number he may wish to enter (Ex: if there were 10 feedback he could start reading number 5 by entering a 5 at the prompt or he could enter "N" to begin reading those entries that are NEW since his last call if the feedback were not deleted previously). After each message he has several options, including advancing to any NUMBER, going on to the Next message by entering "N" or RETURN, Responding to the message by entering "R", changing the users access by entering "A", forwarding the message to any other user as E-mail by selecting "F", or Quitting back to the Options menu by entering "Q". After all messages have been read the user is returned to the options menu. If access is assigned to a new user the Sysop is given the option of sending the new user a 'New User Welcome' that consists of the file "s.nu welcome" that can be created using the "WF" command shown above. New user feedback may also be "archived" if desired. This will copy your new user feedback to a file entitled "e.nark", that may be backed up from time to time, as many sysops like to do. This will allow you to delete the new user feedback, while keeping it in a separate file, so that you will not have to step through the older messages each time you read it.

RESERVED ACCOUNT (RS)
A reserved account can be established with a pre-assigned password, number of credits, and access level if so desired. This is useful for establishing an account for a user that may be calling at a time when you are not available to validate him. By using the "RS" command you can establish any deleted account as a reserved account. When entered, the "RS" command will ask for an account to start with. If you enter a number, it will then search, starting with that account number, for a deleted account, if none are found, or if "E" is entered at this prompt, it will assign the next valid account as the reserved account. A password, access level , and number of credits will be prompted for. After this information is entered, the system will reserve that account.

NEW LOG (NL)
The "NL" command will allow you to restart the log of callers, erasing the old file off the disk, and starting a new one.

THE WEED PROGRAM:

The weed program allows you to automatically go through your user files, and delete users who have not called within a specified amount of time. To use it, type "R" at the main command level, then "weed" when you get the "Run +." prompt. You will be asked if you would like auto-weed, or selective weed. Picking selective weed will prompt you whether you want to delete each user that it finds before deleting them. It will also include those users with non-weed status, since you will be prompted. Auto-weed will not prompt, but simply delete each user it finds that has not called since the cut-off date. Non-weed status users will be ignored in this mode. You will then be asked for the cut-off date, which will be the date that is checked against the last call date. Enter it in the format shown, then tell the program what ID number to start the weed from. Everything else will work automatically, and you will hear a beep when the program is finished.

THE DIREDIT AND ACCESS PROGRAMS:

These programs are used to edit your access groups, (access), and Sub, U/D, and U/X library and subboard information. Using them is very similar to the config editor, (see the setup section), and easy. Simply follow the prompts to change the information.

THE RECONFIG PROGRAM:

This program allows you to re-define such things as number of calls to the system, board name, prime time, etc. Simply run it and follow the prompts to use.

15- PROGRAMMING AND TROUBLESHOOTING

PROGRAMMING INFORMATION

This chapter provides programming information for those interested in the programming details of IMAGE BBS, and troubleshooting information for those that may be having problems.

OVERALL DESCRIPTION

IMAGE BBS is a modular program, consisting of both BASIC and machine language files that are interchanged by the program to add the unlimited capabilities of never running out of memory for program space! It performs this miracle by loading modules (overlays) when needed to perform specific tasks. Using this technique, you may do about anything you wish to on the BBS, not worrying about memory constraints. Of course, every great concept has it's drawbacks, and this one is no exception. The price we have to pay for it is the fact that loading these modules takes time, and slows down the BBS somewhat, since you must wait for them to load. However, we feel the trade-off is well worth it! If you have a memory expansion unit, or faster disk drive, (IEEE, Lt. Kernal, etc.), the load process is speeded up considerably, and helps quite a bit! Those that do not will experience more waiting, but no loss of capabilities on the BBS.

The program was written with the programmer in mind, special attention was given to making it easy to modify and customize. Several custom features can be added without even changing the program, but if you can program in BASIC a little, you'll be surprised at how easy it is to add your own ideas.

MODULES

IMAGE uses a main BASIC program ("im"), and a main machine language program ("ml") that both remain in memory at all times. It also uses both BASIC modules, (plus-files), and machine language modules. (plus-plus files). You may write as many of your own modules as you'd like, and add them at any time. The main consideration is to know which variables and subroutines to use, and how to use them. Be careful when modifying the main program that you do not add too much, or you will find yourself running short on memory, and the system will slow down considerably, possibly even "crashing" d over-using memory. Adding to a plus-file cannot hurt, as lo as you do not go over 56 CBM disk blocks for any individual module. However, defining new variables can eat up memory and cause the same problems mentioned above, especially arrays, so be selective in your variable usage. There are several routines in the program which are available for you to use. We will describe a few of the most commonly used here. This is NOT meant to be a detailed guide to programming, only a brief description so you may get the idea. New Image plans to release a more comprehensive manual in the near future which will cover these subjects in greater detail.

COMMON SUBROUTINES

Line	Routine/setup/results
1001	Position pointer on relative file. x=number of record
1005	Input routine (upper/lower case) returned in an$
1006	Input routine (uppercase only) returned in an$
1007	Get routine (uppercase only) returned in an$ and a$
1011	Open file a$=filename, dr= system disk# to use (1-6)
1012	Read error channel e%=error e$=error name t%=track s%=sector
1013	Load plusfile from plusfile disk a$=filename
1023	Scratch and reopen seq file to write a$=filename dr=system disk#
1024	Scratch a file a$=filename dr=system disk
1029	Output a$
1030	Read open file until "↑" is encountered. hh=logical file#
1062	Open Email file tt$=user handle a$= "r" or "w"
1070	Write all user stats to disk
1075	Read seq file with clear screen first a$=filename dr=system disk#
1076	Read seq file without clear screen a$=filename dr=system disk#
1080	User out of time
1081	Update blocks free dr=system disk#
1085	Check for directory error dr=system disk# a=1 if error occurred
1089	Get disk directory
1093	Clear all arrays
1096	Print a$ to printer
1360	Print cm$ to "area" window
1372	Update free memory
1490	Print a$ to log
1500	"Untranslate" IMAGE translated chars in an$
1530	Sound beeps x=number of beeps
1604	Enter IMAGE editor
1694	Logoff
1736	Load ml protocol a= protocol number (0=punter 1=xmodem 2=copier 3=editor)
1812	Main command level
1914	Reset print modes to default
1915	Detect local mode
2000	Error trapping routine

VARIABLE HANDLING IN MODULES (PLUS-FILES):

IMAGE variable usage in programming modifications and modules should be done carefully. If you were to change any variables that the system uses for particular functions, you could be in serious trouble! This could corrupt your user files, or do any number of nasty things! Because of this, we are giving you a list here of all system variables that you should NEVER use. Even if you are using "temporary" variables, that are normally ok, you should make sure that any subroutines in the main program or program module that you are modifying do not change these variables and create havoc! Most of the one-letter variables, integer variables, and string variables are usually ok to use (with a few exceptions noted below). If you define a new variable in a module that IMAGE does not use, it will be CLEARED at exit to the main prompt, so do not try to use these

to count number of times played, etc, as the program will not remember them. However, this same routine allows you to DIM variables and arrays in modules without worrying about a redimmed array error. Be careful that you do not waste memory with excess variables, or your modules will run very slow, and possibly even crash the system. Here is a list of reserved system variables that you should NEVER use, except for their intended system functions:

```
ac%   ac%(  ag$   ak$   ao%   bd    bf    bf(   bn$   bu    c1$
c2$   ca    cc$   ch$   cm$   cn    co$(  co%   cr    ct    ct%
d1$   d1%   d2$   d2%   d3$   d4$   d5$   d6$   da%   dc    dc%
dd$   dr    dr$   dv%   dv%(  el    em    f1    f2    f3    ff$
f1    f1$   f1$(  gs    i1$   i2$   i3$   id    kk    kp%   l1
lc    ld$   le    lf    l1$   l1%   lp    lt$   mf    mm    mw
na$   nc    nd    nl    nl$   np    nr    nv    oc$   p$    p1%
p2%   p3%   ph$   pl    pm    po$   pp$   pq    pr    pr$   ps
pt%   pu$   pw$   qb    qe    qt$   r$    rc    rn$   rp    rq
rs    sh    so%(  sr    st    st(   sy$   t1    tc%   tf    ti
ti$   tr%   tt$(  u$    uc    uh    ul    ur    x$
```

IMAGE OUTPUT ROUTINE

In order to send text to the modem and screen, (print, for you BASIC people), as easily as possible, we have developed a routine that works very similar to the BASIC print statement. Used properly, this routine will also eliminate much of the garbage collection that the C64 is notorious for. Just as many are used to using the question mark to print something in BASIC, such as entering:

?"Hello There!"

You may use the ampersand, ("&"), IMAGE's "print" character, to do the job. Example:

&"Hello There" will have the desired effect in the BBS environment! You may also '&an$, &tt$(x), &str$(i), anything using a string variable. Numeric variable output is NOT supported yet. Some oddities in syntax: You must follow a "then" statement with a colon before using the ampersand. (i.e. if b then&"hello" will not work; if b then:&"hello" must be used instead). If the ampersand is used all by itself, i.e. b=b+1:&:if b then...., a$ will simply output whatever is contained in a$ at that time.

The ampersand is also used, along with arguments, to call all of the machine language routines in IMAGE BBS. The table of arguments that are useful in BASIC and a brief description follow:

ARG	DESCRIPTION
& or &,0	output a$
&,1	input an$
&,2,x	input A$ from disk x=logical file#
&,3,x	read file from disk x=logical file#
&,4	get char from modem a$=char
&,5	enter chat mode
&,6	masked input routine (password)
&,7,x	load plus file x=device#
&,8,x,y	disk directory x=logical file# y=flag 1=1 line 0=entire dir.
&,9	print an$ at bottom of screen
&,10	enter terminal mode
&,11,x	clear array x=number of array in order of definition
&,12,x	nonabortable file read x=logical file#
&,13	get char to an$
&,14	sound bell
&,15	convert 11 digit date in an$ to english
&,18,x	load proto file x=device#
&,19	display online top of screen
&,20	display offline top of screen
&,21	display bottom of screen
&,22,x	wait x tenths of a second
&,25	sound beep
&,27	save variable pointers
&,28	restore variable pointers
&,37	enable error trapping
&,38	disable error trapping
&,39,x	output tt$(x)

POKES
This is a list of some of the memory locations used by IMAGE that can be usefully POKE'd:

Location	Use
2031	MCI on-off (1 = on)
53248	Flag for local mode (1 = on)
53249	Case lock (1 = uppercase only)
53251	Time allowed (number of minutes 1-99. If over 100, time is unlimited)
53252	Number of chars allowed for input. 0-255
53258	Modem carrier invert (either 0 or 16 depending on modem type)
53280	Uppercase mode (1 = on)

TROUBLESHOOTING/Q & A
Here are some of the most common questions and problems that people have:

Q: "I load the program, and it never gets to the idle screen. What is wrong?"

There are several things that could cause this. Check all the following:
1- Has your system been properly and completely configured correctly using the instructions in the setup chapter under CONFIG?
2- Is each system disk in the correct device/drive?
3- Are all the files copied to the correct system disks, especially the plus-file disk? If an error light is flashing on any of the drives, it usually means that it cannot find a needed file.
4- Are all disk units in proper alignment?
5- Is everything connected to the computer (printers, drives, etc.) turned on? Problems can arise if not, even if the system is not using them.
6- Is the correct modem file on the plus-file disk, renamed to "+.modem"?
7- The disk could be faulty. Contact New Image Software for a replacement.

Q: "My users cannot logon or send Email using the handle. Using the ID number works fine. Why?"

Files can sometimes get corrupted by what we call an "act of God". (Why does He always get blamed for this stuff???). A power brown/blackout, surge, etc. during a write can do nasty things like this. This particular problem is caused by the "u.alpha" file being corrupted. Run "+.alpha", and it should clear things up. (This program can take quite a while to run, especially if you have a lot of users, so be patient here!). If the "u.config" file gets corrupted, (user information getting corrupted, such as their handles, names, etc.), contact New Image Software to help.

Q: "My system has started to do (any one of a number of strange occurrences) that it was not doing before, what is wrong?"

This is usually caused by SOME modification has been made to the system or one of the pfile modules. It may not show up for some DAYS after a modification has been made so the problem may not be readily apparent. The 'fix' is to use the original files from your back-up copy of your IMAGE BBS system disk, isolate which file the problem is in and then correct the error. Also, have you added anything new to your system recently? What has changed since the problem started? Many times, some of the smallest changes can create the largest problems.

Q: "My modem will not work correctly. What can I do?"

Check to make sure you have the proper modem file copied onto the plus-file disk, and renamed to "+.modem". If you cannot find a file that will work with your modem, contact New Image Software for help. There are many new modems coming out all the time, and we will try to supply files for any of these as they do. Here is a list of the current modem files and which modems to use with them:

Name of file	Modems to use, desription
1650	Commodore 1650, Westridge, Total Tel 300 baud
1660	Commodore 1660, Mitey Mo, Hesmodem II, MPP 1064
1670	Commodore 1670 (older model)
1670a	Commodore 1670 (newer model)
Hayes ATA	Hayes compatible modems. (uses ATA to answer)
Hayes DTR	Hayes compatible modems. (DTR hangup)
Hayes DTR/ATA	Hayes compatible modems. (Both ATA and DTR)
2400	Supra, and other 2400 baud Hayes compatible

If you have a Supra 2400 baud modem, you will need to set it up specially before you put it on line. Run the "supra setup" program on the IMAGE disk with the modem on-line and turned on, and then boot your IMAGE BBS!

NOTE: Lt. Kernal owners! If you are running DOS version 7.1, you can make one small change in the "im" program to read your blocks free much faster! Simply take the "rem" statement out of line# 1082, and delete 1083. That's all there is to it!

Thanks again for purchasing IMAGE BBS version 1.0! We plan on supplying all of our customers with the best of quality in our products, support, and service! If you have any problems at all, or want to comment on the program or offer suggestions, feel free to contact us at any time!

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