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1. INTRODUCTION

Welcome to the world of telecommunications on your Commodore 64. C-Net BBS is, in our opinion, the most sophisticated bulletin board system available for your Commodore 64. Please take the time to completely read through the introductory and set-up procedures oriented chapters of this manual before attempting to operate the program--this will help to insure a successful configuration the first time. Once C-Net is configured and operating properly, you will likely not require any further assistance from this text for the basic operation of the program. The balance of this manual has been provided, however, to detail all of the many intricate features of the system waiting to be discovered! This introductory chapter of the manual contains all of the warranty, program usage, and support information. Good luck and happy BBS'ing!

1.1 USAGE AGREEMENT

You have the non-exclusive right to use the enclosed program. This program can only be used on a single computer at a time. You may not distribute copies of the program, protection device ("dongle"), or documentation to others. You may modify or translate the program for personal use only, and only in accordance with all other parts of this agreement. Modification and translations may be made for personal use only, unless prior written permission has been given by Perspective Software stating otherwise.

YOU MAY NOT USE, COPY, MODIFY, OR TRANSFER THE PROGRAM, DONGLE, OR DOCUMENTATION, OR ANY COPY, EXCEPT AS EXPRESSLY PROVIDED IN THIS AGREEMENT.

1.2 BACK-UP AND TRANSFER

You may make one (1) copy of the program for back-up purpose. You must reproduce and include the copyright notice on the back-up copy.

You may transfer (give or sell) the product to another party if that other party submits a written request to this effect including the following:

- (1) your name
- (2) the software version and serial number
- (3) the new owner's name and complete address
- (4) the new owner's voice and BBS phone numbers
- (5) a transfer fee of \$5

If you transfer the program you must at the same time transfer the documentation, dongle, and back-up copy, or transfer the documentation and dongle, and destroy the back-up copy.

You may NOT transfer a version of the software after paying an UPDATE price to upgrade to a newer version of the software (this includes updates of the software from one machine type to another, such as Commodore 64 to 128). When you transfer, you must transfer the version of the software you originally purchased, and all subsequent versions (and associated documentations and back-ups) that you paid a price less than retail price for (that is, an "update" price). Furthermore, transferring will completely purge your name from our database,

to be replaced by the new owner.

1.3 COPYRIGHT

The program and its related documentation are copyrighted. You may not copy the program and documentation except as for back-up purposes and to load the program into the computer as part of executing the program. All other copies of the program, dongle, and its documentation are in violation of this agreement. YOU MAY NOT REMOVE THE COPYRIGHT NOTICES AT ANY TIME.

1.4 LIMITED WARRANTY ON DISK AND DONGLE

Perspective Software warrants the disk on which the program is furnished, and the dongle to be free from defects in materials and workmanship under normal use for a period of 90 days from the date of delivery to you as evidenced by the shipping records. To obtain a warranty service or replacement, you must deliver the disk and/or prepaid to Perspective Software. Replacement of a lost dongle may involve a substantial replacement fee.

EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THE DISK IS LIMITED IN DURATION TO THE DURATION OF THIS LIMITED WARRANTY.

1.5 PROGRAM AND MANUAL

The program and the manual ("software") are provided "as is" without warranty of any kind, either express or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. Should the program or manual prove defective, you (and not Perspective Software or the dealer, distributor or representative) must assume the entire cost of all necessary servicing or repair. Further, Perspective Software does not warrant, guarantee, or make any representations regarding the use of, or the results of use of, the program in terms of quality, correctness, accuracy, reliability, currentness, or otherwise, and you rely on the program and results solely at your own risk.

Perspective Software does not warrant that the program or manual will meet your requirements or that the operation of the program will be uninterrupted or error free.

1.6 LIMITATIONS OF REMEDIES

In no event will Perspective Software be liable to you for any damages in excess of your license fee paid, including, without limitation, any lost profits, business goodwill or other special, incidental or consequential damages arising out of the use or inability to use the program, or for any claim by any other party, even if Perspective Software or the dealer has been advised of the possibility of such claims or damages. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

1.7 UPDATE AND CUSTOMER SUPPORT POLICY

In order to be able to obtain any customer support or updates of this program, you must complete and return the enclosed registration card to Perspective Software. If this registration card has not been received by Perspective

Software, or Perspective Software is aware of breach of any part of this agreement by you, Perspective Software is under no obligation to make available to you any customer support or updates to the program even though you have made payment of the applicable update fee.

1.8 ACKNOWLEDGEMENT

You acknowledge that you have read this agreement, understand it, and agree to be bound by its terms and conditions by completing and returning the enclosed registration card, or by your first use of the software. You also agree that this agreement is the complete and exclusive statement of 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

Perspective Software
Customer Sales and Support
Post Office Box 87175
Canton Twp., MI 48187

1.9 USER SUPPORT

Thanks for purchasing the C-Net 64 BBS. This manual is a 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 on our 24-hour BBSs:

Future World! BBS
(313)-981-6150
System Operator: Ken Fletzer

DS-2 Customer Service BBS
(313) 531-8108
System Operator: Jim Selleck

DS-2 VOICE Support Line
(313)-531-8116
Limited hours, contact BBS for details.

The majority of users on these BBSs are users of the C-Net software and are willing to share their experiences and information about the Program and many other topics as well.

Or, if you prefer, contact in writing, Perspective Software, Customer Support, Post Office Box 87175, Canton Twp., MI 48187.

HARDWARE CONFIGURATION

This section will assist you in properly connecting your peripheral devices to the C 64 for correct operation with the C Net DS-2 system.

MODEMS

There are three basic types of modems that are compatible with the Program:

1. The 1650 modem and anything compatible (Westridge, Video 7, Total Telecommunications)
2. The Mitey Mo and anything compatible (Hesmodem II)
3. The Hayes SmartModem and anything compatible (Prometheus, 1670, Lynker). 1200 and 2400 baud may be used with Hayes compatible modems only. A modem is considered "Hayes compatible" only if it understands basic "AT" commands such as ATVO, ATA and ATH.

The Hayes type modems are further subdivided into groups depending on their features and capabilities. In the system configuration area you may set or change your modem type from a detailed list. As an example: the DS-2 system will operate with either the old style Commodore 1670 modem or the new version, but you will use a different modem type selection depending on which you have.

DISK DRIVES

Any disk drive that can be connected to your 64 and used normally, can also be used with C-Net. There are two terms, however, that you must be familiar with when configuring your C-Net BBS. When a reference is made to a disk drive DEVICE, it is referring to the unit as a whole. A floppy disk drive may have one or two disk openings, each referred to as a DRIVE. A brand-new disk drive has a DEVICE number of 8. If you plan to connect more than one disk drive to the 64 for use with the program, you must insure that each disk drive has a unique DEVICE number (see disk drive instructions for information about changing the DEVICE number of a unit). A disk drive with one disk capability is said to be a DRIVE 0. With a two-disk disk drive, the individual disk slots are numbered 0 and 1 (see disk drive instructions to see which disk slot is which).

Certain hard drive systems such as the Xetec Lt. Kernal are set up to allow you to address different areas of the drive unit by using DRIVE numbers higher than 1. Unlike many older programs which will allow you to address only DRIVE numbers 0 or 1, C-Net DS-2 allows the use of higher drive numbers.

CARTRIDGES

No currently available form of "fast load" software cartridge can be used with C-Net. However, you may use an IEEE interface cartridge such as the Buscard II or the Skyles "IEEE Flash" for IEEE devices such as the SFD-1001 floppy drive or the Commodore 9060 and 9090 hard drives. IMPORTANT: If you use an interface which has a "himem" wire intended to attach inside the C-64, you MUST connect this wire in order to use the DS-2 system! Many game programs and even some early versions of C-Net (v10 and below) can be used without this wire, but DS-2 requires all the C-64's memory to operate, and it just can't use certain areas of RAM without the wire attached. Unfortunately, a few of the older versions of the Buscard II interface had a defect that makes them unusable even with the wire in place. This is a problem with the Buscard itself and NOT with the C-Net DS-2 program. To test a Buscard II interface after

installing it and configuring the DS-2 system, enter the DS-2 text editor and type in several lines of text. Then either Read or List the text you just typed in. If the editor prints on the screen the text you just typed, the Buscard is working and installed properly.

2.4 HARD DRIVES

The DS-2 system has been thoroughly tested on the Commodore "Pet" hard disk drives (9060 and 9090) and is fully compatible with them. The Pet drives have their own set of bugs and problems, however, so it is a good idea to talk with someone who has used them before putting one on your BBS. Generally, as with ANY disk drive, you should back up all files on the Pet hard drives regularly, and avoid filling the drive completely as they have a tendency to wipe out the directory when the drive hits full. Also, it is not recommended that you use the "Validate" command on the Pet drives, and be aware that if you "New" the drive, it will take over an hour to finish.

The ICT Datchief and Minichief hard drive systems can be used with the DS-2 system, however care must be taken to use the ICT drives ONLY for parts of the system that talk to no more than one disk file at a time. This means that you can use your ICT drive for the Upload/Download subsystem, General Text files, and DSP/proto files. Set up your chain before booting C-Net. Do not include partitions #1 or #120, and to avoid "blocks free" errors in directory reads, keep the chain to less than 65000 blocks. Do not use the ICT (in chain mode) to store Email, System files, bulletin sub-boards, or to store the "boot" files. Refer to your ICT instruction manual for more information.

The Xetec Lt. Kernal hard drive system has operated with the C-Net DS-2 system in all our tests with no problems. Its a joy to watch how quickly the program FLIES along with this incredibly fast drive system! If you wish to set up C-Net DS-2 to "autostart" when the Lt. Kernal equipped system is powered on, do NOT rename the "boot" file. Instead, create the following BASIC program by typing it in immediate mode and saving it on the Lt. Kernal as "autostart":

```
1 if a=0 then a=1:load "0:boot",8,1
```

Of course, if you configure your Lt. Kernal as a device other than 8, you would substitute the correct device number in place of the "8", and if you store your boot files on a Logical Unit other than "0", the correct LU number would have to be substituted for the "0" in the filename.

2.5 RS-232 Interfaces

Most non-Commodore modems require an RS-232 interface device to hook up to the C-64. If you are using one, it may be necessary to set the system's carrier detect mode to "INVERTED". This is done from the System Configuration menu. To test whether your DS-2 system is set to the proper carrier detect mode, simply attempt to enter Local Mode from the "Waiting for Call" screen. The mode is correct if you make it to the Local Mode menu.

3. SOFTWARE CONFIGURATION

This section covers the configuration of the program, explaining step by step the procedure you must follow before the program is ready to operate.

3.1 PREPARATION

First, make a backup copy of your C-Net DS-2 Master diskette and put the Master away in a safe place. ALWAYS work from a backup copy!

Before plunging in, a little advance planning is in order. You will need a blank, formatted diskette in each drive which will be used on your system, unless you are converting an existing BBS to DS-2 format. In the case of a conversion, you will be inserting all the existing system disks in their proper drives AFTER MAKING BACKUP COPIES. Conversion instructions are in and following section 3.4 (System Configuration Menu). It is recommended that you read the entire manual carefully, even if you are converting an existing BBS, to familiarize yourself with the differences and special features in the DS-2 system.

3.2 DISTRIBUTING THE MASTER DISK FILES

Since it is rarely practical to operate a BBS on a single floppy disk drive, most systems will divide their disk files among several drives. The DS-2 system allows you to assign each sub-system to a different drive if you wish, or you may operate the entire system on one drive if you have a high capacity device such as the Xetec Lt. Kernal hard drive. In any case, a good quality file copying program such as Jim Butterfield's "Copy-All" must be used to copy the files included on the master diskette to their appropriate drive(s) according to the following guide. Remember, it is NOT necessary for the sub-systems to be assigned to all DIFFERENT drives, although you may do so if you wish.

3.2.1 THE SYSTEM DRIVE

All of the "menu" files (system Help menus) and all files titled starting with "sys." are to be copied here. The "sys." files include various text files which you will have a chance to customize once the system is operational. Each of these files and their contents will be described in sections to follow. The REL (relative) files containing system and user data will be created and maintained on this drive as well.

3.2.2 THE EMAIL AND NEWS DRIVE

Private mail between system users and public news bulletins files will be stored here. There are no Master files that need to be transferred here.

3.2.3 THE LOG DRIVE

Logs of all system activity and private messages (Feedback) to the SysOp will be stored here. No master files to copy to this drive.

3.2.4 THE G-FILES DRIVE

General text files which can be read online by system users will be stored here. Again, there are no master files to be copied here.

3.2.5 THE DSP AND PROTO FILE DRIVE

The DSP files are the program "modules" that give the DS-2 system its power. All the sub-systems are stored in DSP files, as well as online games and/or utilities you may add to your system later. If

you are able to program your C-64 in BASIC, you may be able to create your own DSP files! The PROTO files are machine language utilities such as the text editor and the upload/download routines. Copy all of the Master files that start with "dsp" and "proto" to this drive.

You may, disk space permitting, wish to transfer the BOOTUP files to one of the system drives so that you can re-BOOT the DS-2 system without having to re-insert your backup master disk. The BOOTUP files are: BOOT, ML, INTRO, CN, and the appropriate modem control module. The modem files are numbered 0-9 (example: M0, M1, M2... M9). M0 and M1 are for 300 baud only. M2-M5 control various 1200 baud modems. M6-M8 are for 2400 baud modems. And M9 is reserved for a "customized" file in case your modem needs special routines. You will determine exactly which M-file you require when you select it from the "modem type" menu in the System Configuration area.

3.3 CREATING A NEW SYSTEM

Once the files are distributed to their correct drives, you are ready to begin configuring the DS-2 system. Be certain the the "dongle" is installed in Joyport #2, the DS-2 system will not load or operate properly without it. Insert the backup Master diskette in any drive and LOAD the "BOOT" file using ",1" after the drive device number. For example, if you are loading from device #0, drive #0, you would type;

```
load "0:boot",8,1
```

Within a few seconds, you should see the screen go black with "DS-2!" in the upper left corner. The Master files are now being loaded from the disk. During the disk load, the border color should remain black. If it changes to white or red, it means that one or more important Master files were not on the BOOTUP disk, and the DS-2 will not be able to run properly. If the border color changes before you reach the Time/Date set screen, reset the computer and check your BOOTUP disk to be sure all the correct files are there.

After the title screen is displayed, you will be allowed to set the system date and time using the cursor keys. When you are finished, DS-2 will attempt to "Restart" the system. Since this is the first time and the system has not been configured yet, you will be asked to enter the device and drive numbers of the System and DSP disks. Also you may see an error message: "file not found" before you are sent to the System Configuration menu. If you are using particularly slow disk drives such as 1541's, be patient. It could take almost a minute for the system to initialize itself. Once you have configured the new system, you will be able to re-BOOT in the future without answering these prompts.

3.4 THE SYSTEM CONFIGURATION MENU

From this menu you are allowed to create a new BBS system or change anything about your existing BBS. This is where you create or change your bulletin (Message Base) and file transfer (Upload/Download) libraries. Also from this menu an existing BBS system can be converted/upgraded to the new DS-2 format.

3.5 USER DATA FILES

When creating a new BBS system, you will basically follow the System Configuration menu options in order. To create the files where

system and user data will be stored, select option 1. You will be warned that this will erase existing user data. Enter a "y" to go on. You will be asked for a number of user accounts to initially reserve space for. Since the user accounts are stored in a "relative" file, once the initial number of user accounts is exceeded the disk drive will automatically expand the file to accommodate new users. However, file expansion takes some time, so try to anticipate your future needs. It will take a few minutes to create the user data files.

3.6 DISK DRIVE ASSIGNMENTS

Option 2 from the System Configuration menu allows you to set or change the disk drive device/numbers where the BBS will store or find essential system and user files. There are certain situations where you may be forced to this menu when you enter the System Configuration area. If you do not wish to make a change, simply hit the RETURN key to go to the main System Configuration menu. The drive assignments for the Bulletin and Upload/Download areas are set individually for each sub-board using option 5 (Create/Edit Sub-Boards) and are not influenced by the settings here.

3.7 SYSTEM DEFAULTS

When you select option 3, you will be asked to place the BOOT disk in a drive and enter its device and drive numbers. This is because the information set or changed here is stored as part of the BOOT file, and when you finish making changes the system will rewrite that file so that your new settings will still be there the next time you re-BOOT.

3.7.1 CURRENT BOOT DRIVE

Options 1 and 2 in the System Defaults menu simply confirm the drive device where the BOOT file can be found.

3.7.3 DEFAULT SYSTEM DRIVE

Using options 3 and 4, you must set the correct default SYSTEM disk device and drive number. Otherwise the system will be unable to locate the system data file on Restart or reBOOT and will always force you back to the System Configuration menu.

3.7.5 DEFAULT MODEM TYPE

Use option 5 to select your correct modem type: 0 to 9. If you make a change from the existing default modem type, the new modem control file will be LOADED from the BOOT disk. Modem type #9 is reserved for a "custom" file which you may adapt in case your modem requires special routines to operate properly.

3.7.6 DEFAULT CHARACTER COLOR

Option 6 sets the default character color for users who are in Commodore Color/Graphics mode. The color numbers are the same as in the C-64 operating manual, from 0 to 15, except that 0 (black) is not allowed since it would not show up against the normally black system screen. The original DS-2 default color is #15 (light gray).

3.7.7 DEFAULT IEEE DELAY FACTOR

Option 7: IEEE Delay Factor, is for systems using an IEEE interface device such as the Skyles "IEEE Flash!" or "Quicksilver". If you are not using IEEE disk drives or are using the Buscard II interface, the IEEE delay factor should be left at 0 to insure

fastest possible system operation. Due to a small timing problem in the Skyles Interfaces, online text file reads tend to abort prematurely and disk directories are sent over the modem scrambled into bad Chinese. Don't Panic! Setting this value to 16 allows the Skyles Interfaces (which in spite of this small problem are the FASTEST I have ever used) 100% error free! The factor creates an almost imperceptible delay in system disk file reads which should not be enough to be noticed by online users. Feel free to experiment with shorter delay factors (lower numbers). The best test of the effectiveness of this setting is to have someone call your BBS and attempt to read a long disk directory. If they can do it twice with no errors (other than legitimate line noise) you can call it a success.

3.7.8 DEFAULT 2400 BAUD RATE ADJUSTMENT

Option 8: 2400 Baud Rate Adjust, lets you "fine tune" your computer's high speed operation. This number must sometimes be changed up or down from its default value of 161 for Commodore 64 computers to effectively use 2400 baud speed. It seems to be related to your geographic location.

3.7.9 DEFAULT CARRIER DETECT MODE

Option 9: Carrier Detect mode. Can be set normal or inverted depending on the modem and RS-232 interface you are using. If you are unable to get to the Local Mode options menu from the Waiting for Call screen, or if callers are unable to remain online after making connection with the modem, you may have to use this option to invert the system Carrier Detect.

3.7.10 DEFAULT IDLE BAUD RATE

Option 0: Idle Baud Rate. Certain modems will only answer properly if they are set to a specific baud rate at "Idle" (while waiting for a call). Idle rates of 300, 1200, or 2400 can be set.

3.8 ACCESS GROUPS

You should now select option 4. After a few seconds, you will be taken to the screen which displays the current system user access information. C-Net allows your users to have up to 10 separate access groupings, numbered 0 through 9. New users to the system are always placed into group 0. For each of the group numbers that you choose to use, you can select a title. You should choose one of the access groups to be the system operator group, for you, with highest system privileges. For each group you are using, you can select a specific amount of calls per day 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 hitting any keys before the system will automatically hang up), how many downloads can be made per call. INFINITE settings may be specified for calls/day, minutes/call, downloads/call, and uploads/call by entering a 0. Next come seven flags (enter either a 0 or a 1) for seven system functions. Specifying a 1 allows users of that group to access the function; a 0 denies access. The seven system functions are Maintenance (system operators only), Electronic Mail, User List, Edit parameters and password, general subboard and U/D maintenance, general text and program file maintenance, and access to the M.C.I. (special color and graphics mode), each of which is described in detail in sections to follow. You can also change the number of download blocks (Commodore disk file blocks each contain 254 bytes) that each member of an access group may receive per each block they

upload (again, zero here means INFINITE credit), and how many lines in the editor may be used to compose messages. When finished, hit RETURN to bring up the "Save changes?" prompt.

3.9 MESSAGE BASE AND UPLOAD/DOWNLOAD LIBRARIES

Option 5 from the System Configuration menu takes you to the "Edit Libraries and Sub-boards" menu. This menu can also be made available to remote SysOps by adding the "dsp.edit boards" file to a restricted area of the P-files subsystem. Complete procedures for adding files are explained later.

Each "library" is a separate area which may contain up to 20 sub-boards. Your DS-2 system can be configured to contain up to 8 Message Base (bulletin) libraries plus another 8 separate Upload/Download libraries. This means that your C-Net DS-2 system can have up to a total of 320 sub-boards (160 each, bulletin and U/D). Each user has a special individual set of "flags" which you can set to determine which library(s) he or she is allowed to see. New users enter the system with access to only one bulletin and u/d library, just as in all previous C-Net versions. Older versions being converted to DS-2 format will have their sub-boards assigned to library #1.

Some careful planning is in order before you attempt to set up your libraries. SysOps with limited disk drive space may elect to have only one library of bulletins and U/D. Or, since you can have as few as one sub-board per library, you may wish to divide your system into "Special Interest Groups" or SIGs. Each SIG can be assigned a separate library. Each sub-board within a library will be configured to only allow specific access level users inside, so you can be very specific about who goes where within your BBS.

3.10 CREATING/CHANGING SYSTEM LIBRARIES

Creating the DS-2 libraries is easy. Just select option 1 or 2 from the edit boards menu (1 for bulletins, 2 for U/D) and name the first library. When you hit RETURN, all 8 libraries will be created. However, only libraries for which you have defined at least one sub-board will be available to your users. You may return here at any time and rename any library without affecting its sub-boards in any way.

3.11 CREATING/CHANGING SUB-BOARDS

When you select options 3 or 4 from the "edit boards" menu (After first naming at least one library) a screen will come up with openings for a maximum of 20 entries. Use option 3 to create your public message base sub-boards and option 4 to create the public upload/download (file transfer) sub-board entries. Remember that you can always return to this program after the system is set-up to add more sub-boards. For each sub-board that you wish to create, you must enter a title to describe it, a disk device and drive number to tell C-Net where to write files for that sub-board, and select the user access groups which will be allowed there. You must use sub-boards in numerical order, not hap-hazard around the screen.

3.12 SETTING ACCESS LEVELS ALLOWED

In previous versions of C-Net, it was left up to the SysOp to learn how to control access to the various system areas. This proved to be confusing to some and annoying to others, so in DS-2 the

composite number which represents the access groups allowed in any area is automatically computed for you. You need only select each group on the screen from a list of all 10 possible access groups (0-9), using a 1 for yes and 0 for no. An explanation of how this is done is still in order, however, since the groups you select will be displayed back to you in the form of a decimal number (0-1023) representing a binary value. DO NOT WORRY if this mathematical stuff is confusing to you. You do not have to understand it to use the DS-2 and to be a good SysOp.

The access code number (0-1023) is computed by adding together the code numbers (in the following chart) of each group allowed. These codes are not really secret, they are simply the number 2 raised to the power of the access group number. We use this system because it allows us to keep the information in binary form, which is the computers favorite!

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

Examples:

All access groups: $1+2+4+8+16+32+64+128+256+512 = 1023$

Groups 4,5,6,and 7 only: $16+32+64+128 = 240$

3.13 SYSTEM IDENTIFIERS AND PASSWORDS

The final option you must select from the System Maintenance menu when configuring a new BBS system is 7: Set/Change System Passwords. This section is short and simple. It allows you to set or change the following items:

3.13.1 BBS NAME

Enter the name of your BBS system here. This name will be displayed to each user as they connect to the system, before logon.

3.13.2 SYSTEM OPERATOR

Enter the SysOps name here. This name will be displayed at connect along with the BBS name. Obviously, you are free to use your real name here or an alias as you wish.

3.13.3 LOGIN IDENTIFIER

Option 3 allows you to set or change the system Login Identifier. This is a two-character prefix in all capital letters, numbers, or symbols to identify your system to users at login. An example might be "FW" for a bulletin board called "Future World." The Login Identifier will comprise the first two characters of every users identification number.

3.13.4 SH PASSWORD

This is a secret password that remote users having system maintenance access must use before they can enter the online system maintenance (SH) area. This is for added system security, just in case a hostile party obtains the logon password of one of your trusted remote SysOps.

3.13.5 PH PASSWORD

Same as SM password, but for entry to the P-File maintenance area.

3.14 CONVERTING AN EXISTING BBS TO DS-2 FORMAT

The system conversion option from the System Configuration menu operates automatically and should be fairly self explanatory. BE SURE TO USE BACKUP COPIES OF YOUR SYSTEM DISKS if possible. In any case, backup your irreplaceable files such as SYS.USER.CONFIG. Insert all system disks in their normal drives and select the conversion option. You will be prompted for which version you are upgrading from. After entering the correct answer, the rest will be done automatically. Be aware that if you are upgrading from a version 10 or 11 your SYS.USER.CONFIG file will be expanded by about 60%. Be SURE there is enough room on your system disk! Your present bulletin and U/D sub-boards will be assigned to library number 1 in both cases. When configuration is over, be sure to select the sub-board edit option and rename the first bulletin library and the first U/D library. Of course, you may define additional libraries and sub-boards at that time if you wish.

Due to the fact that different file structures and data formats were used, certain pieces of information about each user will not be transferred in conversion from C-Net v12 files

4. GOING ONLINE

This section will show you how to personalize your configured system, make it ready for callers, and put it online.

4.1 BOOT THE SYSTEM

If you are following the procedures in this manual step by step, at this point you will be at the System Configuration menu. If so, select option 8 to exit that area and enter the DS-2 system. Providing everything has gone right in the software configuration, the DS-2 system will take care of a little disk housekeeping then print something called "CPAS data" (explained further later) on the screen, clear the phone line, and finally announce:

Status: Waiting for Call

Now you are ready to create your user file (the SysOp is always user number 1) and customize the system.

If you are re-booting your configured BBS from the C-64's native mode, you will need to LOAD the "boot" file using the procedure in section 3. Be sure the dongle is installed in joyport #2 before attempting to LOAD C-Net DS-2. If your user files are correctly installed on the system disks, after setting the system date/time you will be taken to the Waiting for Call screen.

If the system sticks in the "Clearing Line" loop, you may have selected the wrong modem control file for your modem. You can force the system to take you to the Configuration screen (where you can try a different modem file) by using the following procedure: Hold down the RESTORE key and press the RUN/STOP key at the same time to get the screen to clear and obtain the "READY." prompt. Then enter RUN and hit RETURN to restart the system. (If for any reason this does not work, you will have to reset the computer and reboot.) This time, however, be sure that you are holding a key (such as the SPACE bar) down when the DS-2 is going through the Restart cycle (the word "Restart" will appear on the 6th screen line). DS-2 will then divert to the Configuration screen. Follow the procedures in section 3 if you need to reset anything there.

4.4 LOGGING ON TO THE SYSTEM

At this point, the system is ready for a caller. However, you must be the first user to "log on" to the system in order to establish yourself as User #1. To do this you will enter "local" mode and perform a "normal logon". Move the small lightbar to LOC by pressing the F5 key twice, and select it using the F7 key. When the Local Mode menu appears, hit "N" for normal logon. The system will now display in the screen window exactly what a remote caller will see. (For more information about the many other powerful Local Mode options, see chapter 5)

When someone has called, either remotely or locally, the program's copyright message will be displayed, then the user will be asked to "Hit your Backspace/Delete key". This is so the system can determine whether the caller is using standard ASCII mode or Commodore ASCII, which is different and contains special characters for color and graphics. The callers mode will be printed to the screen and they are then asked to "Press Return." When RETURN is pressed, the program will read the disk file "sys.start." This file may be skipped by entering "A" when told to "Press Return." Soon

you will learn how to use the built-in text editor to customize this file (and several others) to contain whatever message you wish to use to convey the special character of your BBS.

The user can abort the reading of the sys.start file at any point. If there is something you want every user to see before they log on, such as special rules for system conduct, you will be allowed to create a file called "sys.forced" which is ALWAYS displayed at this point. It cannot be avoided or aborted.

Next the program will instruct the user to "Enter your handle or Login ID." If the user has no account, or makes a mistake entering the information, he will be instructed to enter "NEW" if they have never logged on before, or "RES" if they have a special "reserved" account waiting for them. If the user has made four mistakes and has not entered "NEW" or "RES" he will be logged off for excessive login attempts.

If a user enters "NEW" (which you have to do to establish yourself as the SysOp and become a user of your own board) the new user procedure will be executed, beginning with the reading of the file "sys.new user." The new login procedure consists of four parts: General Information (handle, real name, phone number, password), Terminal Parameters (computer type, column-width, etc.), miscellaneous questions (city & state, occupation, age), 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 into feedback for you to view later, and he is taken into the system with access group 0 status. New Users who have a reserved account will enter the system with the access level you selected for them when you created their RES account. (More info about the RES system in chapter 5)

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 first check for electronic mail to that user, then inform the user as to how many more calls he can make on that particular day (if not an infinite number). Next, the system will display the file entitled "sys.welcome," then check to see if there are any new news files to read to the user. Once all of this has been completed, the user will be placed at a prompt of "MAIN:". This is the "Main Command Level" from which all other available sub-systems are reached.

If this is your first time to log on to your BBS, you must now use the "online functions lightbar" to change your own access level to the number you selected for SysOp access. The lightbar is on the 17th line from the top of the sysop screen. It appears in reversed yellow, with a highlighted portion in reversed white. Use the function keys (F3 and F5) to move the highlighted portion of the bar right or left until the "ACS" (Access) section is highlighted. Then use F7 to select the ACS function. If you do this correctly, a checkmark will appear to the left of the selected function. Now you can use the f3 and f5 function keys to change your access level. The current access level display in the right side of the upper status window will change as you do this. When you finish, be sure to deselect the ACS function by again pressing the f7 key. The check mark will disappear. When you log off the system, this new access level will be saved in your user data file. In the same way

you can set or change the access level of any remote caller while they are online.

4.5 THE STATUS WINDOW

Once a user has logged on to the system, the status window at the top of the system screen will be filled in with many pieces of information.

The top screen line contains the full date and time, and the users Time Still Remaining (TSR) on the system in minutes.

The next five lines contain specific information about the user logged on or last 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, lowercase, linefeeds, column width, and computer type.

Next is the traveling lightbar, which allows you to change 8 different system functions and user account parameters invisibly, while a user is logged on to the system. A complete description of lightbar functions is in the Online Functions chapter.

The bottom two screen lines are used to display many different pieces of information. When the system is in Waiting for Call mode, three system variables are shown: total calls to the system, calls since the log was last cleared, and the number of users. Also, there are two buffer windows which display the last 10 characters that have been either output by or input into the system through the modem.

When a user is online, different information about the users past activity is displayed depending on which area they are currently using. The bottom line always displays (between the modem input/output windows) 1) the callers baud rate; 2) their average time per call in minutes; and 3) the users "system score" which is a number automatically computed using all the users system activity stats.

The user information shown on the second line from the bottom is explained in the sections covering the various command levels.

4.6 CUSTOMIZING SYSTEM TEXT FILES

Many system text files have been mentioned up to this point, and you have been told that you could change these files to say what you want the users to see. The easiest way to do this is from the System Maintenance level. If you are logged on to the system and have given yourself SysOp access, enter SM at the MAIN prompt. You will be asked to "IDENTIFY" at which point you must enter the SM password. Once you reach the SM command level, use the WD (work drive) command to be sure that the system is looking for files on the drive containing the System disk, then enter S to see a list of the system text file titles and a short description of where in the system they are displayed. The list you are seeing is being read from on one of the files: "sys.files" which was on your Master C-Net DS-2 disk. If the list is not displayed, the file is probably missing from the system disk or mistitled.

After displaying the list, the system will take you directly to the

Write/Edit prompt where you enter the name of the file you wish to edit or create. From there the system will enter the online text editor where you can edit the existing text (if any) or create your own. Entering "?" while in the editor displays the menu of commands. When you are finished, enter a period at the start of a new line then enter the letter "s". When you see the word "Save", enter RETURN to save the file to the disk.

There is a "Local Maintenance" level available to the sysop without logging on to the system. The procedure for editing files is the same there. Info on entering the LM area is covered in the section on Local Mode functions.

5. LOCAL MODE AND CPAS SUBSYSTEMS

There are several options available from the Local Mode sub-system to increase the sysop's ease of controlling and monitoring the system. Many of these are commands that could formerly only be performed by logging on to the system, among these is a modified version of the system maintenance and a file copy utility. The DS-2 system Local Mode menu looks like this:

- (N)ormal Logon
- (I)ntant Entry
- (C)opier
- (E)dit Users
- (F)eedback
- (M)ail Read
- (U)ser List
- (L)og
- (S)ystem Maintenance
- (P)rivate Mail Send
- (R)ES Add/Change
- (X) Restart CPAS
- (Z) Reconfigure C-Net

Certain options operate exactly as they would if you were logged onto the system except that when you are done you will be returned to the Local Mode menu instead of to MAIN. These options include (U) to access the user list sub-system, and (P) to send a user private mail.

Edit users takes you into "dsp.user edit" where you may change the files of any individual system users.

5.1 SYSTEM LOGIN

"N" may be selected to log on to the system exactly the way any other user would. Logging on in this fashion records your call, and leaves a log entry detailing your activities.

"I" may be selected to "instantly" log on to the system. You will be taken almost immediately to the MAIN prompt after entering your password. Logging on in this fashion bypasses the news files, CW files, and does not record your call to disk.

5.2 MAIL TO SYSOP AND SYSTEM LOGS

"F" may be used to read feedback one message at a time with the option of sending mail to the user, changing his access, going on to the next piece of feedback, or quitting from the function entirely. You will be asked if you would like to delete the feedback when the end is reached or Quit is selected.

"M" may be used to read the mail that has been left for user number one (this should normally be reserved for you). This mail is read, and has the same options, as the Feedback read option above. In both the "M" and "F" areas, you may delete the account of a user who has sent you a message by simply entering an up arrow character (^) as a new access level for that user.

"L" may be used to read the current log of callers, which includes signon/signoff times, as well as various system activity. Also you may select to read the Upload/Download/DSP log which details activity in the UD and P-file areas. The option is given to restart

whichever log you have just read.

5.3 SYSTEM MAINTENANCE

Selecting "S" from the Local Mode options menu will bring up the Local System Maintenance options menu. Options here are identical to that of remote system maintenance (chapter 13) with the exception of log and feedback reading.

5.4 CURRENT PERIOD ACTIVITY STATS (CPAS)

CPAS maintains a record of system user activity which is completely independent of the system user call log. When the system is at the "Waiting for call" screen, the CPAS information will be displayed. The items displayed are: Feedback left for the sysop, Email left for the sysop, posts made, responses made, uploads, downloads, private messages, new users, and system errors. If a system error occurs, there should be a detail listing in the calls/errors log. When you reset the log, the CPAS system errors number will return to zero. In addition, the date and time of last CPAS initialization and the number of calls in the current period are displayed in the status window at the top of the screen.

"X" from the Local Mode options menu will restart the CPAS sub-system counters to zero. If any CPAS counter reaches 65,535 it will automatically start itself over at zero.

5.5 RESERVATION SYSTEM

The reservation system of C-Net allows you to assign a pre-authorized access level to desirable new users. A new user with a reservation may enter "RES" at the "Enter your Handle or Login ID" prompt after which he will be asked to enter his invitation number. If this is a valid reservations number, he will then be asked to enter his temporary pre-assigned password (which is usually his name). If the password is valid, he will then be taken to the normal new user login, and given his pre-assigned access level. The RES system is available even while the Private System option is active and NEW users are not being accepted.

"R" from the Local Mode menu will allow you to add, delete, or list entries from this system.

5.6 RECONFIGURE C-NET

Entering "Z" will take you to the system configuration menu from where you can set or change anything about the system. When you exit the configuration menu you will return to the Local Mode menu.

6. COMMANDS AVAILABLE AT ALL LEVELS

There are several commands which are available to a user at every system command level (main, bulletin board, electronic mail, system news, general text files, upload/download, program files, or system maintenance). Each will be explained in this section.

6.1 CHAT REQUEST/CHAT MODE

Entering "C" will request a chat with the system operator. If the system operator's status (SYS) is checkmarked, the message "Paging sysop!" will be displayed and a whistle will be made on the system monitor. If SYS is not checkmarked, the user will be told that you are not available, and will be asked if he would like to leave feedback instead. Either way, the word "-ON-" at the bottom right of the status window will flash to let you know the user has requested a chat with you.

6.2 FEEDBACK

Feedback is a special type of direct Email to the SysOp(s). Each user enters the system with their personal feedback flag ON. You may restrict the use of feedback to certain users by editing their feedback flag. See the "user edit" section for information on changing personal flags. Feedback is left to the system operators by entering "F" at a command prompt. The user will be placed into the editor subsystem to write his message. Feedback is read online by the system operators in the system maintenance subsystem, or offline from the Local Mode menu.

6.3 HELP

Entering anything beginning with "H" will bring up the file "sys.inst" from the System Disk.

6.4 SYSTEM INFORMATION

Entering "I" will bring up the file "sys.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.

6.5 LAST CALL DATE

A user can change his effective last call date by entering "LD" at a command 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.

6.6 LOGOFF

Entering anything beginning with "O" at a command prompt will take the user to logoff. He will be asked first if he really wants to logoff, and if so, if he would like to leave feedback to the system operators first. Entering "O!" takes the user to "fast logoff" which skips the prompts.

6.7 QUIT

Entering "Q" at any command prompt will return the user to the main command level. If "Q" is entered at the main command level, the user will be taken to logoff.

6.8 TIME/DATE

Entering "T" at any command prompt will display the current time,

the time the user logged on, and the amount of time that the user has remaining on the system this call.

6.9 GRAPHICS TOGGLE

Entering "GT" will switch the users current text mode between standard ASCII and Commodore Color/Graphics mode. There will be no visible change on the SysOps screen since this affects only the way characters are interpreted as they pass in or out through the modem.

6.10 BRIEF SUMMARY OF COMMANDS

For a brief summary of commands at any command level, a user should enter a question mark ("?",) which reads the appropriate menu file from the System Disk.

7. THE MAIN COMMAND LEVEL

The main command level is the first command level a user sees when he logs on. The main command level is the "central point" to the system. From here, a user may branch to any one of the other system command levels.

7.1 SAVING TIME BY BEING SPECIFIC

Four areas available from MAIN allow you to specify where WITHIN that level you wish to go as part of your MAIN command. Using this ability skips menus and saves time. The 4 areas are B (Bulletins), UD (Upload/Download), G (General text files), and P (online Program files).

In the case of both P and G areas, including the number of the menu selection you want will skip the menu display and take you there directly. For example: to read the 4th General file in the main G-files menu you would enter:

```
MAIN: G4
```

Multiple selections are separated by a semi-colon (;). So, if you have defined selection 2 of your G-files as a sub-menu, you could read the 3rd file from sub-menu 2 by entering:

```
MAIN: G2;3
```

Both bulletins are U/D areas in the DS-2 system are now set up to allow multiple libraries, which is something new. Now, users who have access to more than one library must enter the library number they want, then the sub-board within that library. The two numbers MUST be separated by a semicolon. If the user enters the incorrect syntax, they will either be taken to a short menu showing which libraries they can enter, or to the first sub-board of the selected library.

Example: To enter Bulletin library 1 at sub-board 7, the user would enter:

```
MAIN: B1;7
```

7.2 COMMAND STACKING

In nearly every area of the DS-2 system (there are a few odd exceptions) you may "stack" commands together by simply separating them with an up-arrow. This can save some time and also insure accuracy for users with noisy phone lines.

Example: If you wished to see system information, then view your time status on the system, then enter U/D library 4 at sub-board 2, then Scan the available titles, you would enter:

```
MAIN: I^T^UD4;2^S
```

If you make a mistake in the command stack, you can usually abort its execution at the next prompt by using CTRL-c (holding down the CTRL key and the c key at the same time).

7.3 EXPERT MODE

Expert mode in both bulletins and U/D areas allows the user (if their access level is greater than zero) to skip seeing the

sub-board entry text files Expert mode can be permanently turned on by the user in the Edit parameters section. Otherwise, users can invoke expert mode when they enter the B or UD areas by placing an exclamation point character after the B or UD from MAIN. Example: To enter UD library 4 at sub-board 2 in expert mode:

MAIN: UD14;2

The SysOp or SubOp may override expert mode for a sub-board, if they have a critically important text file to display, by simply making the sub-board title start with an asterisk (*). This character will be invisible to the user.

7.4 BULLETIN BOARD

Entering the "B" followed by the library and sub-board numbers will take the user to that sub-board. If the user does not have access to the board number he requested, he will be taken to sub-board number one. If he simply enters "B" without specifying a number, a menu of available libraries will be displayed, unless there is only one library available. In that case he will be taken there at sub-board one. If the user has access to no sub-boards, he will be told that the bulletin board sub-system is empty, and returned to the main command level.

7.5 EDIT TERMINAL PARAMETERS

Entering "E" will bring up the user's current terminal parameters, which includes computer type, expert mode, text mode, and line length, and give the user an opportunity to change as many of the parameters as he wishes.

7.6 GENERAL TEXT FILES

Entering "G" will take the user to the General Text File Subsystem.

7.7 ELECTRONIC MAIL

Entering "M" will take the user to the private Electronic Mail Subsystem. The user may go directly to the Send mail function using the "express mail" command: "MSx" where "x" is optional and specifies the user number of the addressee. Express mail can be much faster than entering the Email system normally since the users personal mail file is not read and counted. After express mail is sent the user is returned to MAIN.

7.8 SYSTEM NEWS

Entering "N" will take the user to the System News Subsystem.

7.9 PROGRAM FILES

Entering "P" will take the user to the Program File Subsystem.

7.10 SYSTEM MAINTENANCE

Entering "SM" will take a system operator to the System Maintenance Subsystem.

7.11 UPLOADING/DOWNLOADING

Entering the "UD" followed by a library and sub-board number will take the user to that upload/download board. If the user does not have access to the library number he requested, or if he enters "UD" without specifying a destination, he will be shown a short menu of available libraries. Unless he has access to only one library, in

which case he will be taken there at sub-board one. If the user has access to no boards, he will be told that the upload/download subsystem is empty, and returned to the main command level. No users will be allowed to enter this subsystem if "U/D" is selected on the on-line functions lightbar.

7.12 USER LIST

Entering "UL" will take the user to the User List Subsystem.

7.13 NEW USER FILE

By entering "U" from the main command level, the "sys.new user" file can be re-read by a user.

7.14 PASSWORD CHANGE

A user with the proper access can change his password from the main command level by entering "PW." He will be asked for his current password once, then his new password twice to confirm the change. There is also a random password generator available which less imaginative users may wish to use.

7.15 STATUS

Entering "S" from the main command level will bring up a user's current status. This includes handle, phone number, real name, login id, access group name, last call date, number of calls to the system today, calls made totally, the number of system calls, as well as the number of uploads, downloads, and lines available in the editor. A second screen has been added to the Status display showing the detailed BBS Use summary for the user. Also their numeric system score and U/D credit status are displayed along with a text system rating ranging from "EXCELLENT USER" to "CERTIFIED LEECH".

7.16 SYSTEM STATUS

Users with System Maint access may enter "SS" to view the current CPAS data (Current Period Activity Stats) as well as the C-64s current BASIC RAM memory available. Also all the disk drives currently online can be polled to determine their status.

0 BULLETIN BOARD SUBSYSTEM

This is C-Net's "public message base." When a user enters the bulletin board subsystem, only the libraries that his personal flags are set to allow and the sub-boards that his access group can access are loaded into memory. So, if the selected library contains five sub-boards, but a user logs on with an access group that can only can get to boards one and five, he will see only two boards, re-numbered as 1 and 2. The same applies if there are up to 8 libraries but the user has access to only libraries 1 and 6. He will see them as libraries 1 and 2. In this manner, he has no idea that the libraries and sub-boards he cannot access are even on the system. A user is at this sub-system when he is prompted with "B" followed by the sub-board number.

0.1 EXPERT MODE

A user may use "B!" followed by the library and sub-board number to enter a specific sub-board from the main command level in the "expert" mode. Expert mode eliminates the reading of the sub-board entry files when entering a new sub-board, speeding up movement between sub-boards for experienced users. If the subOp has specific rules that must be displayed for a certain sub-board, expert mode can be overridden by placing an asterisk (*) at the beginning of the sub-board title. The user can still abort the reading of that file, but they are forced to begin reading it every time they enter that sub. Therefore it is recommended you make non-abortable files SHORT if you want the users to read them.

0.2 MOVING TO ANOTHER SUB-BOARD

A user can change the current sub-board by just entered the new sub-board number at the "B" prompt. Entering "<" will take the user to the next lower numbered sub-board. Entering ">" will take the user to the next higher numbered sub-board. If a move cannot be made, the user will be told that the board number he requested does not exist. Entering "B" will display the title of the current sub-board.

In order to change to a different library the user must Quit to the MAIN level and re-enter the Bulletin sub-system.

0.3 EXISTING THE SUB-BOARDS

A user can get a list of which sub-boards he has access to by entering "L."

0.4 SCANNING POSTS

Scanning posts means to display only the subject of the posts and their number of responses. Just entering "S" will begin scanning at the first post on the sub-board. "S" followed by a post number can be used to start scanning at a specific post. "S-" can be entered to begin scanning at the last post and work backwards. A maximum of twenty bulletins can be scanned at a time, and the space bar can be used to abort a scan in progress.

A Detailed Scan may be performed on the posts by entering "DS." The subjects of the posts will be displayed, then the user will be asked for the post number he would like to perform a detailed scan of. A post may be selected in this manner or by entering "DS" followed by the post number at the sub-board prompt. Once a post is selected, the headers (date and creator) of each response to that post will be displayed, after which the user will have the option to begin

reading the post from the beginning or from a specific response.

8.5 ABOUT POSTS

About posts means to display the subject, author, date of creation, and number of responses to a post. Just entering "A" will tell a user about the next post following the one that was just manipulated in any way. "A" followed by a number can be used to find out About a specific post. "A-" can be used to find out About the last bulletin and work backwards.

8.6 READING POSTS

To read a post is to first find out About it, then read the text body of the message, followed by each response until the end of the post. Just entering "R" or just pressing RETURN will read the next post. "R" followed by a number can be used to read a specific post. "R-" can be used to read the last post then begin to work backwards. While reading a post, a user can hit the space bar to skip to the next response, or press "/" to skip directly to the end of the post. Once at the end of a post, a user has several options. He may press RETURN to continue, "P" to leave a private message to the original poster of that message, "R" to add a response to the end of that post, "T" to begin reading the post over from the beginning, or from a specific response. A question mark entered at the end of post prompt will bring up this small list of options.

8.7 NEW MESSAGES

To either scan, find out About, or to read only the messages that are new, a user should enter "SN", "AN", or "RN", respectively. To stop an "RN" in progress, press the "/" key while reading About a message. You will be given the option to continue the RN at the next new post. This allows you to abort the post if it is of no interest to you without aborting the RN. The same applies to the Read All (RA) described in the next paragraph.

To either scan, find out About, or to read only the messages that are new on the current sub-board and all higher sub-boards, the user should enter "SA", "AA", or "RA", respectively. To stop an "RA", "SA" or "AA" at the current sub-board, press the "/" key. As with RN, post reads aborted using the "/" need not abort the Read All (PA) function unless the user elects to do so. RA has been enhanced further with the addition of the ability to SELECT the sub-board numbers to be included from a menu.

8.8 POSTING NEW BULLETINS

If a user enters "P" and there is room for a new post, the user will be asked for a subject of his message, asked if he would like to leave the message anonymously, then placed into the editor sub-system to write his message. The author of a post appears as "Anonymous" if the user has requested, except to the sub-board operator, or a user with general sub-board maintenance, who will see "*" followed by the user's handle to show that the message was posted anonymously.

8.9 KILLING ENTIRE POSTS

To kill a bulletin means to remove it from the sub-board along with all of its responses. Entering "K" followed by a number will attempt to kill a specific bulletin. A range of posts can also be specified, such as "K1,3;5" to kill posts 1 through 3 and post 5. A normal user can kill his post so long as there are no responses to

It. Once responses are added, only a sub-board operator can kill it.

8.10 EDITING POSTS

To edit a post, a user should enter "E" followed by the number of the post to edit. The post will be opened, and the system will search through the post for messages that the user can edit (he is the author, or is sub-board operator). When and if such a message is encountered, the user will be shown the header information for the current message segment and prompted with "Delete, Read, Edit, Save, Abort, or Continue (Save to end)". "D" for delete will remove the response (original posts cannot be deleted), "R" for read will display the text of the current segment and repeat the prompt. "E" for edit will take the user to the editor sub-system to edit the message, "S" for save will keep the current segment and go on to the next message, "A" for quit will return the user to the "B" prompt, and "C" for continue to end will Save the bulletin, including the changes made to that point, and return the user to the "B" prompt.

8.11 CHANGE WORK DIRECTION

If a user wishes to begin scans, abouts, or reads either forward or backward, he should enter "+" or "-" respectively. Forward means to go from 1 to 2 to 3, etc., and backward means to go from 6 to 5 to 4, etc.

8.12 SUB-BOARD OPERATORS (SubOps)

A user may enter "V" to view the sub-board operator of the current board, and "M" to send a private message to him. Sub-board maintenance mode is entered only by the sub-board operator or a user with general sub-board maintenance by entering "2." The sub-board maintenance menu has three options.

- 1) Edit the entry file. The entry file of a sub-board is the file that is displayed upon entering the sub-board. 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, its access configuration, its current sub-board operator, and whether it is open or closed. If the title of the sub-board begins with an asterisk (*) the entry text file of that sub will be "forced-start" and will display even if the user is in expert mode. However, the user may still abort the read, so keep forced-start files SHORT and do not overuse them.
- 3) Freeze/thaw Posts. Using this option, you are able to "freeze" any post, meaning that users will no longer be able to respond to that post. A list of the bulletin titles along with the frozen/non-frozen status of each is displayed with the option to toggle between the two.

9. ELECTRONIC MAIL SUBSYSTEM

This is C-Net's Private Message Base. Provided a user can access this subsystem, upon entering he is told how many messages he has waiting.

9.1 LISTING PRIVATE MESSAGES

To obtain a list of the messages a user has waiting in the order they were sent, he would enter L at the EM prompt. He can also enter L followed by a number to begin listing at a specific message.

9.2 READING MESSAGES

To read the next message or to begin reading messages, a user just needs to press RETURN at the MAIL prompt. When he has read the last message he will be told "That was the last message."

To read a specific message, he would simply enter its number. To read all messages, he would enter A.

9.3 RESPONDING TO A MESSAGE

To respond to a message means to send a private message to a user in response to a message that was sent by him.

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.

To respond to a message the user has just finished reading, he may simply enter "R". C-Net will address the response to the user who sent the last message read.

9.4 SENDING A PRIVATE MESSAGE

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.

The user may save time by entering S followed by the addressee's ID number (if known). Example: S34 to send mail to user #34.

9.5 DELETING/EDITING MAIL FILE

A user may enter "D" to delete all, or selected pieces of his mail, saving them for later use. Entering either "D" or attempting to leave the Email system with mail still in the users file will bring up the option to either delete all mail waiting or edit the existing mail file. Choosing to edit will bring up the following options: "D" to delete all mail, "S" to delete selectively, and "L" to list messages. Selective deletion will display the header of each message, giving the user the option to Read, Save, or Delete each message, or Abort from the entire operation leaving the mail file untouched.

9.6 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, report the number of messages, then go through each one, and then report as to how many of those messages are from the user performing the verify function.

10. SYSTEM NEWS SUBSYSTEM

This is where all system news files and bulletins are read. When a user logs on to the system, all new news files which the user can access are read to him. When entering the news subsystem, a list of the news files that the user can access is displayed. The prompt at this subsystem is "N1:".

If NM was entered at MAIN instead of just N, and the user has system maintenance access, he will enter the news file sub-system in maintenance mode, which has a prompt of "NM1:". In this maintenance mode, all news files are read in, regardless of access.

10.1 LISTING NEWS FILES

To obtain a list of news files and the dates they were created, a user would enter L. A user can also enter L followed by the number of the news file to begin listing from.

10.2 READING NEWS FILES

To read a news file, the user must enter it's file number. Also, when entering the news file subsystem, a number may be placed after the N or NM command to immediately read a news file before being placed at either the N1 or NM1 prompt.

10.3 ADD A NEWS FILE

When in news file sub-system maintenance mode, "A" may be entered to add a news file. A file type, title and access code must be given to the news before being placed in the editor to write the file. The 3 possible file types are selected from a menu: 1) Normal mail file; 2) Forced read (non-abortable when displayed the first time); or 3) Recurring (displayed every time a user logs on. Determining the access code for a news file works exactly like determining the access code for a sub-board. Select the access levels who will see the file and DS-2 will automatically compute the access code number (1023 means all 10 groups can access it, etc.) The file type is indicated by the first character in the name of the file on the menu. No leading character indicates a normal news file. "*" indicates forced read. "\$" indicates recurring.

10.4 KILLING A NEWS FILE

A news file may be removed by someone in news file maintenance mode by entering K followed by the file number.

10.5 EDITING A NEWS FILE

The contents, title, or access of a news file may be changed by someone in news file maintenance mode by entering E followed by the file number. After making changes to a news file, a user is given the option to update the date of the news or not. If he does update the date, it is made "new" to all users again.

11. PROGRAM FILES AND GENERAL TEXT FILES

These two subsystems, the program files (P-Files) subsystem, which is where all external programs such as on-line games and utilities are accessed, and the general text files (G-Files) subsystem, which is where all text files such as stories, documentation, and listings are accessed, work similarly, so will be described together.

PM instead of P or GM instead of G could be entered at the MAIN prompt to enter the respective subsystem in the maintenance mode, provided the user has access to this maintenance area.

If the user has PM access, he will be prompted to enter the PM password which was set in the "system passwords section of the configuration editor.

11.1 LISTING THE FILES

To obtain a list of accessible files in the current directory, a user may enter L.

11.2 SELECTING AN OPTION

To read a general text file, or to run a program file, a user simply must enter its number from the list. If the entry on the list is a subdirectory, that subdirectory will be opened. If an error occurs, the system will report trouble reading the file.

11.3 ADDING AN ENTRY

A user in maintenance mode can add a file to the current directory by entering A. He will be asked for a title, the source (optional) which might be the author of the file or the person who uploaded it, and the access code for the new file, which will then be saved to the disk. The prefix "dsp." MUST be omitted when adding a program file to a directory. The title must appear in the directory EXACTLY as it appears on the disk (without the "dsp." if it is a program file). Note that G-Files are stored on the disk specified as "General Text files disk" during system configuration, and the P-Files are stored on the "DSP and PROTO files disk".

11.4 KILLING AN ENTRY

A user in maintenance mode can remove a file from the directory by entering K followed by the number of the file. He will be offered the option of killing the file completely from the system, or removing it only from the menu and leaving it on the disk.

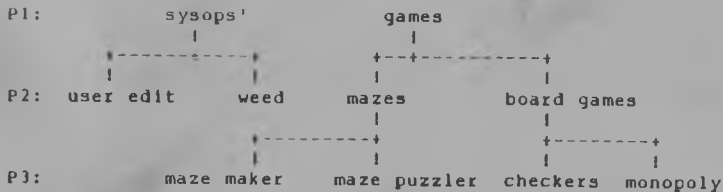
11.5 EDITING AN ENTRY

A user in maintenance mode can change either the access, title, or source of an entry by entering E followed by the number of the file.

11.6 SUBDIRECTORIES

You can create another listing of files accessible from the current listing called a subdirectory. To create a new subdirectory, use the A command. When you are asked for a title, begin the title with "d/" and then the name of the subdirectory. Access and source credit work the same. To enter that new subdirectory, enter its number. Files can now be added this new listing. Notice the number following the command prompt increment by one. This number is the number of subdirectories deep you are. To return to the previous directory, enter <, and the number following the prompt will decrement. Here is a sample subdirectory map of the files in a sample P-Files directory:

PROMPT (Level)



If a user already knows how files are arranged in their directories, he can place their numbers after the P or G command from MAIN. For example, using the above subdirectory map, entering "P2;2;1" from MAIN would run the program checkers without having to go through the directories one by one. "P1" could be entered to go immediately to the sysops' subdirectory, and still be able to choose between user edit and weed, and so on.

11.7 DSP FILES PROVIDED FOR YOU

There are several "system operator utility" program files included on the C-Net disk for your use. These files should be kept in a subdirectory only you can access. They are:

```
dsp.weed
dsp.user edit
dsp.edit boards
dsp.access
```

These files can only be run from within C-Net by adding them to a P-Files directory as described above. Once added to the p-files, they can be run either locally or from a remote location.

Exceptions are the two "Local Only" files which cannot be accessed by ANY remote caller, not even you. They MUST be used only in LOCAL mode. They are: dsp.Local Mode, and dsp.configare.

Dsp.weed is a utility which will automatically go through your user base and delete users who have not called since a specified date. Dsp.weed allows you to begin at a specified user account number, and gives you the option to be asked whether or not you would like to delete each user before he is deleted. Users will not be deleted by the weed program if you have given them "non-weed" status by setting the appropriate flag in their account.

Prg.user edit is a utility which will allow you to edit any of a user's information, including handle, password, terminal parameters, system use statistics, and all the various individual user flags.

The library flags for both bulletin and U/D determine which libraries (if any) the user will have access to. Every new user is given access to the first Bulletin library and the first U/D library only.

The access override flags may be used to give a certain user access to a sub system that his access group cannot normally use. These

flags take precedence over the defaults for each access group. So, for example, if your access group 5 does NOT normally have access to M.C.I graphics, you may give a specific user M.C.I. access by setting his access override M.C.I. flag on.

The remaining individual user flags include:

Non-weed status: Keeps the user from being eliminated by the weed program.

Downloading: Whether downloading is allowed or not. Clearing this flag (to 0) prohibits the user from downloading entirely.

Unlimited Downloading: Allows the user to download even though his credit is out or exceeded.

Automatic U/D file validation: If set to 1, this users uploads to the system are automatically "validated" and can be downloaded by other users right away. Otherwise the subop must first check the file and validate it using the VAX command.

Feedback: This flag is always set ON for new users, but can be set off if you wish to allow only certain users to be able to send you feedback messages.

Chat: This flag can be set OFF to prohibit a user from using the chat request.

The final two files: "dsp.access" and "dsp.edit boards" are the same files you access from the configuration editor to set or change the system access levels and to edit the sub-board libraries. You may add them to the p-files library if you feel you will need to edit these functions from a remote location.

12. UPLOAD AND DOWNLOAD SUB-SYSTEM

This is C-Net's "file transfer base." When a user enters a particular library in the upload and download (U/D) sub-system, only the sub-boards that his access group can access are loaded into memory. So, if you have five sub-boards, but a user logs on with an access group that can only get to sub-boards one and five, he will see only two sub-boards, renumbered as one and two. In this manner, the user has no idea that the sub-boards that he cannot access are even a part of the system. The prompt at this subsystem is "UD" followed by the subboard number.

There are two types of U/D subboard available, the "restricted" files type, and the entire disk "exchange" type. A U/D sub-board is of restricted files type (such as "Games and Utilities") unless its title ends with "/e" (such as "Trading Post/e") which tells C-Net that it is of the exchange type.

The restricted files type should be used when you want users to be able to see only certain files on a disk, and have a record of who uploaded the file and when. The entire disk exchange mode allows users to access all files on a disk, like the program "64 Exchange." It is useful for when you want to directly "trade" with users by inserting any disk at any time.

12.1 MOVING TO ANOTHER SUB-BOARD

A user can change the current sub-board by just entering the new sub-board number at the "U/D" prompt. Entering "<" will take the user to the next lower numbered sub-board. Entering ">" will take the user to the next higher numbered sub-board. If a move cannot be made, the user will be told that the sub-board number he requested does not exist. Entering "B" will display the title of the current sub-board.

A user can get a list of which sub-boards he has access to by entering L.

12.2 UPLOAD AND DOWNLOAD PROTOCOLS

Both the New Punter and X-Modem protocols are available for use with C-Net. The user sets which protocol they will be using for each transfer by selecting from a menu. In an exchange board, Commodore 64 and 128 users will default to new Punter. All others default to Xmodem. The default exchange protocol can be changed using the P command.

12.3 SINGLE FILE UPLOAD

To upload a single file to the system, a user would enter U. In the restricted files type subboard, which has a maximum of 40 files, the user is asked for information describing the file. This information is saved along with his handle, ID number, and the current date and time. If the user does not have his Automatic Upload Validation flag set, the file title will not be available to other users until it is validated by the SubOp using the VAX command. Such files appear in the directory as "UNVALIDATED" for normal users and to sub-maintenance access users as the filename with an asterisk (*) in front.

12.4 SINGLE FILE DOWNLOAD

To download a single file from the system, a user would enter D in the exchange type, or D followed by the file number in the

restricted files type. Filetype must be specified in the exchange type. Note that a user can only download the number of times per call that his access group is allowed, and that he can only download the number of blocks per every uploaded block that was specified as the U/D ratio for his access group. Unvalidated files cannot be downloaded.

12.5 MULTI-FILE TRANSFER

Several files may be uploaded or downloaded at one time in the entire disk exchange mode by entering MU or MD respectively, providing the user is using a terminal program which supports this, and the New Punter protocol. During transfer, the filenames are displayed on the system screen as they are transmitted or received. In the entire disk type, files may be chosen by entering filenames and their file types.

12.6 LISTING FILES

In the restricted files type, S can be entered to begin scanning titles at the beginning, or S followed by a number to begin scanning at a specific file. SN can be used to display only new files, and SA to display all new files on every subboard (/ is used to stop). For detailed information about a file, enter A for the next file, or A followed by a number for information on a specific file.

In the entire disk exchange type, \$ can be entered to bring up a disk directory. You may enter a pattern for search.

12.7 KILLING AND EDITING FILES

A system or sub-board operator (SubOp) may enter K to kill a file in the entire disk exchange type, or K followed by the file number in the restricted files type. In the restricted file type, the user will be asked if he would like to leave the file on the disk, only removing it from the list.

A system or sub-board operator may enter E to change the name of a file in the entire disk exchange type, or E followed by the file number to change anything about a file in the restricted files type.

12.8 READING FILES

A user may enter "R" followed by the number of the file in the restricted files type of u/d library to display the contents of a file. In an exchange board, entering R will bring up a prompt for filename to read.

This option is intended for display of sequential text files. It is the only read routine in the system which will display text files containing lines longer than 80 characters. You may display program files as well, but unless they contain only text the screen display may be rather hard on your eyes.

12.9 SUB-BOARD OPERATORS

A user may enter V to view the sub-board operator (SubOp) of the current sub-board, and M to send the SubOp a private message. Sub-board 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 sub-board is the file

that is displayed when entering the sub-board. If there is already an entry, it will be loaded into the editor.

2) Edit board detail. This option allows the change of the title, access configuration, current sub-board operator, and open/closed status.

12.10 VALIDATING FILES

The SubOp can validate a file (to make it available for downloading) in two ways. First by simply entering VA followed by the number of the file from the Scan list. Secondly, during an Edit of the file information, changing the number of times downloaded from negative 1 (-1) to any positive number (or zero) will validate the file. In this way, a questionable file can also be UNvalidated, by editing the number of times downloaded to negative one.

13. SYSTEM MAINTENANCE SUBSYSTEM

This subsystem should be reserved for the system operators (SysOps) of the system only. The prompt at this level is "M:". When you wish to enter the System Maintenance subsystem, you will first be required to enter your SM password, which you should have set in the "system passwords" section of the configuration editor. You may change the SM password by entering the configuration editor from the Local Mode menu.

13.1 DOS SUPPORT

All DOS support and file reading/writing is performed on a designated "work" disk. When you enter system maintenance, the work disk is set to the designated system disk. The current work disk device and drive number is displayed as part of the maintenance command prompt. To change the current work disk, enter WD.

For a blocks free listing only, enter B.

To send a DOS command to the current work drive, enter @. You will be prompted for the command, which must be entered in proper Commodore DOS syntax as it appears in your disk drive manual. Example: to Scratch (erase) a file called "badfile" from drive number 0, you would enter:

```
s0:badfile
```

For safety and system security, the NEW command (to format a disk) cannot be entered in SM. After a disk command has been executed, the disk drive status will be displayed. To display the drive status ONLY, without entering a command, simply enter @ instead of a command.

13.2 READING SEQUENTIAL FILES

Any sequential file may be read from the current work disk by entering R. Reading is terminated when either the end of file is reached, or a line of more than 80 characters is encountered.

13.3 CREATING OR EDITING SEQUENTIAL FILES

Entering W will allow you to create a new sequential file using the editor, or use the editor to edit an existing sequential file. This command is useful for customizing menu files, or files such as sys.start, sys.welcome, or sys.end.

Entering S from the M: prompt will first print the contents of the sys.files sequential file, which is a list of the sys files the system uses and where they are displayed. Then you may enter the name of the one you wish to change.

13.4 READING FEEDBACK

Enter F to view the feedback left by users or new users. Each message is displayed one at a time, beginning with a header containing the user's name, ID number, real name, phone number, and date the message was sent. After each message, you will have the option to change the access group of that user by hitting A, send a private message to that user by hitting M, go on to the next message by hitting N, or quitting by hitting Q. When the last message has been displayed or Q is hit, you will be given the option to delete all feedback.

13.5 READING THE LOGS

Entering L will offer you the option of viewing either the calls/errors log, or the U/D/DSP log. The calls/errors log contains logon and logoff times, the number of uploads, downloads, private messages sent, posts, responses (if any), as well as the user's ID number, and his handle. The time that the call log was re-started is displayed initially. A normal (non-error) log entry will have the word "LOGOFF" displayed under the users handle. In the case of an error entry, the line under the users handle will contain the error number, the line number where the error occurred, and the name of the last DSP file used.

The U/D/DSP log contains a list of each upload or download and who made them, and a list of DSP files (p-files) which have been accessed from the P library and who used them.

13.6 ACCESS GROUP AND NAME CHANGE

By entering I, a SysOp can change a user's access group or handle. The ID number of the user must be known to use this function.

13.7 FORCED MAIL FILES

A forced mail file is a file that is unaborted to a user as soon as he signs on to the system. To create a forced mail file for a user, enter MC. You must know the user's ID number to use this function. To remove a forced mail file, enter MR.

There are three commands which may be placed at the very end of a forced mail file: OFF, ERASE, and DELETE.

If the word OFF appears in all capital letters as the very last line of a forced mail file, the user will be logged off as soon as he finishes reading the file. DELETE will do the same thing, but the user will be notified that their account is being deleted from the system, which it is.

If the word ERASE appears in all capital letters as the very last, or next to last, line of a forced mail file, the file will be removed from the disk after the user has read it. ERASE and OFF (or DELETE) may be used together as long as ERASE appears on next to last line and OFF (or DELETE) appears on the last line.

13.8 DISK DIRECTORY

Enter D to view the directory of files on the current work disk. You will be prompted for a pattern, at which point you may hit RETURN to view all files, or enter a pattern to check if one specific file is on the disk, or view a group of files whose names contain that pattern. Commodore "wildcard" characters are active in the pattern search. See your disk drive manual for a complete description of how to use wildcard characters. A few examples follow:

To view all filenames which begin with "dsp." enter:
Pattern: dsp.*

To view all filenames which begin with "c" followed by any letter, followed by "." plus any other characters:
Pattern: c?.*

14. USER LIST SUBSYSTEM

The user list sub-system is a structured program that allows a user to obtain a list or to perform a search of the users of the system.

14.1 SPECIFYING CHARACTERISTICS

If you are looking for users with certain characters in their handle, or with certain computers, or living in a certain area code, you can select that you want to specify characteristic of the users to list. System operators may also specify certain characters in the real name, and certain access groups. Also, a combination of these characteristics may be specified, such that a search may be performed to find all users living in the 313 area code with access group 1 configuration.

14.2 WHERE THE SEARCH BEGINS

You must specify a user account number to start listing or searching from.

14.3 THE LISTING

The ID number, handle, last call date, area code, then computer computer type is printed. If the user performing the search is a system operator, the access group and real name of each user will also be printed.

The search ends when either the end of the user data file has been reached, or the user hits the space bar. When the search is finished, the user is returned to the MAIN prompt.

15. THE EDITOR SUBSYSTEM

This is where all messages are written and edited. A maximum number of lines is set for the editor according to the access group of the user. For a new user's initial personal statement, he may type up to 35 lines of text.

When a user runs out of time while in the editor subsystem, he is not logged off of the system. The system waits until the message is finished, or until the user has not typed a key for the amount of time specified by his access group's idle time.

The editor subsystem works by "dot commands." To access an editor command, a user must hit a period (.) at the first column of any line. He will then be further prompted with ">>" after which he may type a command letter, or hit backspace. For example, . followed by > will allow a user to change the right hand margin for text manipulation and shaping functions.

15.1 GETTING OUT OF THE EDITOR

.S is used to save all text. .A is used to exit the editor as if it were never entered, without saving anything. Attempting to save (.S) from the editor when there is no text to save, or hanging up the phone line on the system, is the same as aborting. .N may be used to start over. This will erase all text that was entered.

15.2 SEEING WHAT HAS BEEN ENTERED

.R is used to read the text. Read will print each line just as it was entered. .L is used to list the text. List is similar to read, except that it will print the line number before each line. .M is used exactly like read, except text is put through C-Net's Message Command Interpreter (MCI) described below. Not specifying a range for .R, .L, or .M will cause all of text to be printed.

15.3 MANIPULATING TEXT

.D is used to delete lines from text. Not specifying a range will cause .D to delete the last line of text.

.E is used to edit lines of text. Not specifying a range will cause .E to edit the last line of text. As a line is edited, the original line is printed, and the user may type the line over, and/or use the control-U key sequence to re-type the character that is directly above the cursor. This relative position within the source line may be moved one character to the left by using control-D, or one character to the right by using control-I. If RETURN or backspace is hit at the beginning of an editing line, no change will be made. To abort a range of edited lines, the period key may be hit at the first column to display ">>Exit" and then RETURN.

15.4 INSERT MODE

.I followed by a line is used to insert text before the specified line number. If no line is specified, inserting will be performed at the beginning of text. All subsequent entered lines will be placed at the point of insertion. To exit insert mode, and begin to place lines at the bottom of text, .X is used.

15.5 LINE NUMBERS

It is sometimes convenient to be prompted with the current line number before each line is entered. .O is used to turn line

numbering on and off. When you are in Insert mode, a letter I will be placed before the line number.

15.6 WORD WRAPAROUND

Word wraparound is on when the editor is entered. .W is used to turn word wraparound on and off. When word wraparound is on, a word which will not fit onto the end of a line is automatically brought to the next line to be continued. When it is off, the editor will beep at the end of the line.

15.7 SHAPING THE TEXT

.B is used to place a border around text. C-Net will check that there are two free lines for the top and bottom border. C-Net will ask for a character to border with, then return to the editor. Lines that are too long to have a border added to them will simply be skipped in the process.

.J is used to justify text. There are three ways to justify text: left, right, and center. After .J is used, L must be hit to left justify text (move to the left border), R must be hit to right justify text (move to the right border), or C must be used to center justify text (move to the center of the screen).

15.8 SPECIFYING A LINE RANGE

For many editor commands, such as deleting, editing, justification, replacing, reading, and listing, a line range can be specified. Here is how it's done:

x	line x only
,y	from beginning to line y
x,	from line x to end
x,y	from line x to line y

15.9 MESSAGE COMMAND INTERPRETER (MCI)

The MCI is used to change the text color in 64 color/graphics mode, create special effects like backspacing, ask questions in the middle of a message, etc. The character that is used to trigger the MCI is the English pound key (the key to right of the minus key and to the left of the CLR/HOME key). ASCII computer users (such as IBM) use their "backslash" key to generate this character. Outside of the editor sub-system, this key may not be used. Within the editor sub-system, only users with access groups configured to use MCI may hit this key. Only high level access groups and system operators should be given access to the MCI as it is easily over used or misused. These commands can be placed anywhere in text. The # has been used in place of the English pound sign in these explanations. These commands are always used as #Xn where X is a command letter and n is a single digit number.

#Bn -- print n bells (ASCII \$07) to the user.

#Cn -- used to change the text color in color/graphics mode. For any one of the 16 Commodore colors, replace n with the character beside the color:

0 black	1 white	2 red	3 cyan
4 purple	5 green	6 blue	7 yellow
8 orange	9 brown	J pink	K grey 1
L grey 2	M lt green	N lt blue	O grey 3

(On the C-128, B is darker purple, and K is darker cyan.)

#Dn -- used to branch a number of lines if the condition last tested by **#T** was not equal.

#En -- used to branch a number of lines if the condition last tested by **#T** was equal.

#F1 -- will print a clear screen character (ASCII \$0C) or shift-clr/home (\$93) in color/graphics mode.

#G1 -- will stop printing until a character is hit. The key pressed will go into the variable **an\$**. Note that lowercase is always converted to uppercase here.

#Hn -- will print a specified number of backspaces.

#In -- will stop printing until a line is input. The line inputted will go into the variable **an\$**. Note that lowercase is always converted to uppercase here.

#Jn -- used to jump a number of lines down through text.

#Ln -- used to turn the printer on and off. **#L1** for on, **#L0** to return the printer to its original state.

#Nn -- print a number of RETURNS or new lines.

#Pn -- change the printing mode to one of the following:

- 0 Normal printing
- 1 Print each character then backspace then character
- 2 Print each character, 8 space, then 8 backspaces
- 3 Print each character then backspace over it.
- 4 Print each character, rub it, then character
- 5 Print each character then space and back line end

#8n -- used to change output speed. N is the number of 1/20 seconds between each character.

#Tn -- used to test variables. **#T1** to test **an\$**, or **#T2** to test access group. To check **an\$** against "hello" you would use **#T1HELLO**. The second **#** signifies the end of the test. Similarly, you would use **#T2##** to see if a user is a member of access group 3.

#Vn -- used to print variables. N may be:

- 0 Current date and time
- 1 Last call date and time of the user
- 2 Handle of the user
- 3 Real name of the user
- 4 Phone number of the user
- 5 the variable **a\$**
- 6 the variable **b\$** (sub-board number for entry files and number of callers for **sys.welcome**)
- 7 the variable **an\$** (last **#G1** or **#I1**)
- 8 the variable **d2\$** (subboard name for entry files)
- 9 the variable **d3\$** (last caller for **sys.welcome**)

#Wn -- used to wait a number of seconds.

#X1 -- used to immediately end the message.

#Kn -- Starts sending a different color character before each text character sent. n determines the starting color, then the system will rotate through all the other colors except black. K0 turns off the rotating colors and leaves the text the last color in the series.

#R1 -- Turns on reverse mode. R0 turns reverse off.

#Q0 -- Restores all text display options to default normal and sends a reverse off to the remote user as well as the default text color code. Q1 will leave reverse on but restore all other default values.

Note that the MCI commands may be placed one after another on a single line and anywhere in the middle of any text. If a branch command is encountered but not taken, the rest of the line after the branch will still be executed.

The MCI commands can not only be placed in messages, but anywhere in the program if you are modifying it. For example, if you are making a routine which requires a four second pause, you can use **#W4** in any output statement.

Following is a sample message containing MCI commands that will ask a user if he is interested in a board event. If he is, he will be asked questions which will be printed to the printer, otherwise the message will be aborted.

```
Hello #V3#W1, I mean #V2!  
Are you interested in the board dinner? #G1#T#Y##E1#X1  
#L#I am glad that you can make it #V2.  
How many people are you bringing? #I1  
Do you own your own car? #I1  
#LOOK, Thanks again, #V2, a SysOp will be contacting  
you at #V4...
```

16. C-NET'S TERMINAL PROGRAM

For added convenience, the C-Net BBS is equipped with a built-in terminal program. To activate the terminal, you must be at the screen "Status: waiting for call" or at the Local Mode options menu. Press the left arrow key, which is located at the upper left hand corner of the keyboard. The message "Loading C-Term" will be displayed, and soon the C-Term main menu will appear.

16.1 CONNECTING TO A REMOTE SYSTEM

To call out with a Hayes compatible modem, you may use the simple autodialer routine or simply enter terminal mode by pressing the number 1 from the C-Term menu, then use the modem commands to dial and connect.

To call out with any other type of modem, you must call with a phone connected to the same line before entering C-Term. When C-Term is activated, the modem will pick up the line.

To exit the terminal mode, press the left arrow key again.

16.2 TERMINAL OPTIONS

Option two from the C-Term menu can be used to change the baud rate used, whether the text display will be Commodore Color Graphics mode or standard ASCII, to change the current active U/D protocol, and the Hayes dialing mode: pulse or tone.

C-term is meant for convenience only and is not intended to replace the powerful options of a dedicated terminal program. 2400 baud is not usable in C-term at this time.

16.3 UPLOADING AND DOWNLOADING

Uploading and downloading of single and multi-files is supported by C-Term. There is an option of the C-Term menu to select the disk drive that will be used for transfers.

16.4 DOS SUPPORT

Option 6 from the C-Term menu will allow you to perform a disk directory, send a disk command to the current U/D drive, and to read any sequential file from the U/D drive. Any disk command may be used, such as "s0:hello" to scratch the file "hello" or "n0:diskname,ld" to format the disk with the name "diskname" and disk ID "ld." When reading a sequential file, you are given the option to simultaneously send the file to the modem. This may be useful for uploading a prewritten message.

17. TECHNICAL NOTES

The information in this last section is provided for any user interested in making modifications to the C-Net program, or just to better understand how it works. Supplemental information will be made available in the form of a programmers reference guide to DS-2.

17.1 GENERAL OPERATING PRINCIPLES

Before attempting to modify your C-Net DS-2 system, you should be aware of a few programming features which can help you immensely, or crash your new files totally if you fail to work within the new parameters.

Permanent vs Temporary Variables: Because the 64 has always had a mystifying tendency to gradually lose free memory if left operating for long periods (I refer to this phenomenon as "variable creep") a new routine has been written which establishes a set of "permanent" BASIC variables when you boot up the system. ANY other variables including arrays will be wiped out every time you hit the MAIN prompt. A complete list of DS-2 permanent variables is still being compiled as of this writing, however you can find out what they are by listing the dsp.Restart file above line 700. If you add a feature to the system that requires the use of a NEW permanent variable, all you need do is ADD it to the ones defined in Restart and your new variable will survive the purge at MAIN.

If you are creating or adapting a DSP file for the system that needs to use arrays, you must define those arrays at the start of your file. The arrays used by C-Net to operate the sub-boards and UD systems can be defined by simply calling "gosub 86".

Stack Clearing: This is another handy ML routine which is called at MAIN, at logoff, and in the error trap. It resets the microprocessor stack, eliminating all subroutine return addresses and open for/next loops. Leaving too many unresolved operations on the stack have caused former versions of C-Net to have "out of memory" crashes in the past. However, this is not the only benefit gained by having this routine. For example, it is now possible to write routines in your p-files that save space by using formerly illegal procedures. You might wish to call a subroutine that gives the user the option of continuing or quitting. If they select to continue, do "return", if they decide to quit you can send them directly to MAIN without worrying about the unresolved subroutine because MAIN performs a stack clear!

The BASIC "Jump Table": Lines 0-100 of the CN file have been reserved largely as a set of "goto" instructions to higher line numbers. This allows changes to be made in the CN file without having to make changes to the dsp files. Generally speaking, you should never call a subroutine or enter the CN file by going directly to a line above 100, ALWAYS use the jump table entry. Not only will this make changes simpler in the future, it will also save space in your files. Example: in the current release version, MAIN is at line 181. However, this could change at any time. You go to MAIN in the DS-2 by invoking "goto 16", which will ALWAYS point to MAIN, wherever it is.

The DSP-File installation system: This is really the heart of the DS-2 operating system. DSP files may now be any length within the

limits of BASIC memory availability. There is no longer a special reserved area for these overlay modules. When you load a DSP file, it literally overlays the CN file starting at line 512. You may number the file any way you choose, but the first line should be 512 or higher. Several tricks are possible which will be explained further in supplements and demo files, such as changing the starting number of the p-file installation, allowing you to literally have 2 different short DSP-files in memory at the same time. Another possibility would be to have a file which starts at line 500. Lines 500-511 from that file would remain in memory as a part of the CN file. In this way certain repetitive routines in a multi-module game could be loaded only once as a part of the first module then called as subroutines. Of course, this would only be usable in a system where the sysop has agreed not to use the lines above 499 for his own mods.

As has been announced, it is a simple matter in DS-2 to completely replace the CN file with a different file (by merely changing the DSP load point to line 0) which would leave the entire BASIC area available for a huge p-file. Great care would have to be taken in using this technique however, since certain CN functions MUST be there in your new file (such as error trapping and logoff on time expiration...). Complete instructions are forthcoming as well as a "dsp.cn" file which will be a stripped CN file containing only those routines which are absolutely necessary to keep the system online. This shell file will be usable as a starting point upon which to build replacement CN files.

17.2 BASIC VARIABLES

The following is a list of the most common variables reserved for system usage by the BASIC programming:

AC%	Access group of user
AG\$	Name of access group
BB\$()	Names of sub-boards
BZ	Number of sub-board in U/D or messages
CA	Total number of system calls
CN	Number of calls since setup
CO%	Computer type
CT%	Calls today
DI\$	Current date
DV\$()	System disk drive device numbers
ID	ID number
II\$	Login identifier
LD\$	Last call date
LF	Line feeds 1=Yes
LL%	Line length
LP	LP=1 before output indicates CR when finished
MR%	Mail record 0=no mail
NA\$	Handle of user
NL	Expert Mode flag 1=Yes
O	Used to input #2,a\$ (syso)
P	Used to print a\$ to the screen/modem (sysp)
Q	Points to the start of the editor jump table (sysq)
R	Points to the start of the editor flags table
PH\$	Phone number of user
PI	PI=1 before input indicates all uppercase
PM\$	SM Password
PP\$	PM Password

PR\$ Current DSP file name
 PW\$ Password of user
 RN\$ Real name of user
 SF\$ Contains access group flags
 SY\$ Name of last config file (U/D or Sub)
 T5\$ Used in "only x minutes left" display
 TC\$ Total calls
 TR\$ Time remaining in minutes
 UL Upper/lowercase flag 1=Yes
 UR Number of user accounts
 WW Word wraparound for editor input flag
 X\$ Contains system drive numbers
 ZZ ZZ=1 indicates local mode

17.3 MAIN PROGRAM ROUTINES; THE BASIC JUMP TABLE

Line #	Description
2	Position relative file
3	Read error channel
4	Check for carrier
7	Print a\$ (same as sysp)
9	Input a\$
12	Returns text name of computer type number in "a"
14	Load P-File
15	Get a CHR
16	Main
20	Close all Files
21	Save Editor Files
22	Update CPAS
25	Re-enter Editor
26	Parse String for Multiple Parameters
27	Open etc.recs (feedback) file, a\$="r" or "w"
28	Check disk blocks
29	Check disk blocks and available dir entries
30	Main (new user)
33	Initialize editor
34	Start editor
36	Open user config file
37	Waiting for call
38	Logoff
39	Common command level options
51	Insufficient disk space
52	Higher access level needed
53	Clear screen then read seq file
54	Read SEQ file
55	Open email file
56	Load subs file
57	Load bedit
58	Reload subs file
59	Load smaint
60	Change board #
61	Local mode
62	Load pfile in a\$ -- goto512
63	Load open file into editor
64	Warm start editor
65	Open file in a\$
66	Open etc.recs for read
67	Open sys.data rel file
68	Set current access level parameters


```

69      Get total system calls from sys.data into ca
70      Load proto 2 (text editor)
71      Normal logon
72      Instant logon
73      Terminal mode
74      Restart u/d
75      Restart email
76      Chat request
77      Time remaining request
78      Enter logon with password
80      Write password/user file
81      Load p.file from library
82      Load proto file
83      Load local mode/goto CPAS -- waiting for call
84      Write use file (new user)
85      Change bulletin sub level
86      Dimension standard array variables
88      Activate lmaint file
89      Restore variables to startup
90      Load restart file, reinitialize system
91      Print "status"+ contents of a$ in window
92      Load proto file from term (change files)

```

17.4 RESTARTING WITHOUT REBOOTING

When modifying or testing the system there may be times when you wish to re RUN the BASIC portion of DS-2 without having to completely reboot and reset the clock. This is accomplished by reLOADING the modem control and CN files (in necessary) into their correct memory addresses and then simply RUN-ling the files. First we must be sure that the first byte BEFORE the start address of each file is a zero (a quirk of the Commodore BASIC). Since the modem control file starts on page 11 and the CN file starts on page 15, you would:

```

poke 11*256,0
poke 15*256,0

```

Then you will need to LOAD the correct M-file, for example M3 if you are using a new version 1670 modem. Thusly:

```

poke 44,11
load "m2", <drive device number>

```

Lastly we LOAD the CN file:

```

poke 44,15
load "cn", <drive device number>
run

```

Thats it! If you do not see the familiar C-Net DS-2 screen appear after about 1 second, you may assume that some part of your ML file is corrupted and you will have to reboot.

Good Luck!

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