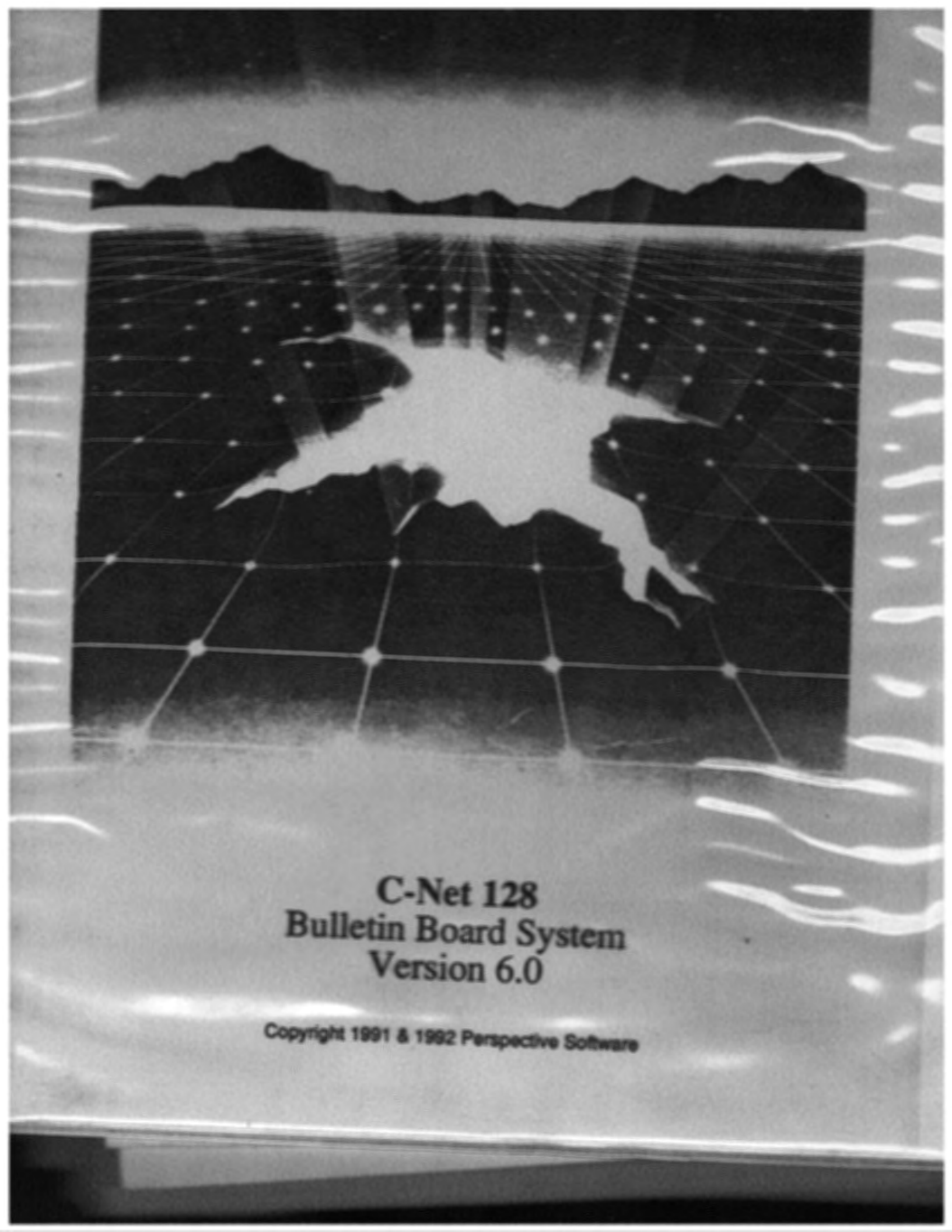


C-Net 128
Bulletin Board System
Version 6.0

C-Net 128 6.0 Users Manual
March 1992

Several products are mentioned in this manual:

Westridge Modem, is a trademark of Westridge Corp.
Video 7, is a trademark of Video Solutions.
Total Telecommunications, is a trademark of Total Tele Corp.
Mitey Mo, is a trademark of Mitey Products.
Hes Modem II, is a trademark of Hes Software
Hayes Smartmodem, is a trademark of Hayes Corp.
Promodem, is a trademark of Promitius Corp.
Commodore 1670, 1650, 1660 Modems is a trademark of Commodore Electronics Limited.
Linker, is a trademark of Linker Systems.
US Robotics Courier, is a trademark of US Robotics
Supra Modem, is a trademark of Supra Corp.
Commodore 128/64, is a trademark of Commodore Electronics
MSD, is a trademark of MSD INC.
Omnitronix, is a trademark of Omintronix Brands
Indus GT, is a trademark of Indus INC.
Commodore 1541, 1571, SFD-1001, 1581, 1572, PET-4040, 8050, 8250, 9060, and 9090 are trademarks of Commodore Electronics Ltd.
Skyles QuickSliver 128/64, are trademarks of Skyles Electric Works.
CMD, is a trademark of Creative Micro Designs INC.
Lt. Kernal, is a trademark of Fiscal Information.
Fastload, is a trademark of Epyx INC.
MACH 128, is a trademark of Warpspeed INC.
Commodore RAM Expanders 1700/1750 are a trademark of Commodore Electronics Ltd.

Revision, 7/92

9 8 7 6 5 4 3 2

PRINTED IN THE UNITED STATES OF AMERICA

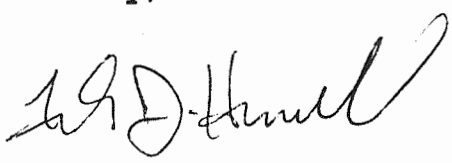
- FORWARD -

It's done. Finally.

I'd like to thank a couple of people for helping this version become what it has, Al Green, Lee Loftis for the network routines, and a lot more. And Christopher Pastor for writing and putting together the manual, "Hey Chris -- one more chapter OK?" Just kidding... Just when Chris thought that he was done... one more addition... Sorry for all the aggravation there.. (and then again maybe not!). I'd also like to thank Ken Pletzer, and Jim Selleck for the help as well. Jim has started his own company called "Beverley James Products", he is distributing C-Net Software and other goodies. (Hey Jim, you can pay me for the plug later!). At any rate, if there is anyone that I have forgotten to mention; Thanks! Oh yeah, you my customer, thanks for putting up with my delays, and my not-so-nice under pressure attitude that I'm sure one or two of you have seen.

Anyways, have fun with this version, there are a lot of improvements in it, and new editions such as the Networking.

Finally, it's done.



Frank J. Hunnell

C-NET 128 V6.0 QUICK NOTES - CONVERSION

A couple of quick notes:

1). Conversion from version 4.0 to 6.0 has not been widely accurate. We suggest that you start your system completely over. You may try to use the convert in SYSTEM CONFIGURATION, however, success is NOT guaranteed.

2). After setting up your system, and having logged in to your new system, install the prg.utilities in the PFILE section, and then execute it, and select "MESSAGE GENERATOR", this will create all the needed error responses that C-Net generates.

3). 5.0 owners, should not experience any problems converting, as a matter of fact, C-Net should convert rather easily, since there are no file conversions. However you will need to scratch "sys.sam".

4). P-FILES should be added ONE at a time per day to ensure that there are no conflicts with the new operating system.

5). **Network routines will not activate unless you have been activated by the network administrator, check chapter 18 for details on how to active your system.**

6). In your MACS option screen it is advised that you leave the FREEMEM display feature OFF, unless you are using it as a programming utility.

7). The autobackup routines will NOT work on a unit such as a Lt. Kernal, or CMD hard drive, from lu to lu. It will work from a Lt. Kernal, or CMD to a 1581 or a 1571.

8). If the today in history file is not updating daily, then check your MACS option screen, and make sure that the option is active.

9). A completely new e-mail program has been installed into version 6.0 - there is NO txt.email needed - this means if you are running a 4.0 or 5.0 system, you will not be able to convert the email system. SCRATCH txt.email if it still appears on your system disk. This new email works a little different from past versions, however is very similar to the C-Net 64 V10. (If you can remember that far back!) It has been tested to be very reliable.

10). For your C-Terminal, you will need to delete your old sys.phonebook it will not work on the new version.

11). Don't forget to run your prg.utilities, and create a "badnumbers" file, it is useful for keeping the automatic callback routines from a "Police station" or something of that nature.

IF you need any assistance, please remember that you may call my BBS, CompuCenter for additional help.

216-753-9724.

- TABLE OF CONTENTS -

- TABLE OF CONTENTS -

1.0 INTRODUCTION

Welcome to the world of telecommunications on your Commodore 128. C-Net 128 v6.0 is, in our opinion, the most sophisticated bulletin board system available for the 128, and is sure to prove itself to you. Please take the time to read completely through the introductory and setup chapters before attempting to operate the program; this will ensure a successful configuration the first time. The balance of this manual has been provided to detail all of the many features of version 6.0 just waiting to be discovered! This chapter contains all the warranties, support, and legalities.

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 for personal use only, unless prior written permission has been granted by PERSPECTIVE SOFTWARE SOUTH, or authors 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 BACKUP AND TRANSFER

You may make (1) copy of the PROGRAM for backup purpose. You must reproduce and include the copyright notice on the backup copy.

You may transfer the product to another party if the other party submits a written request including the following:

(1) The original owner's full name
(2) The software version and serial number
(3) The new owner's full name and complete address.
(4) The new owner's voice and BBS phone numbers.
(5) A transfer fee of ten dollars.

If you transfer the PROGRAM you must at the same time transfer the DOCUMENTATION, dongle and copies of the software in your possession.

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 upgrades from one machine type to another, such as Commodore 64 to 128). When you transfer,

you must transfer the version of the software that you originally purchased, and all subsequent versions that you paid an upgrade price for (including any documentation and back-ups associated with them). Furthermore, transferring will completely purge your name from our records, to be replaced by the new owner's.

Contact PERSPECTIVE SOFTWARE SOUTH for more details on ownership transfers.

1.3 COPYRIGHT

The PROGRAM and its related DOCUMENTATION are copywrited. You may not copy the PROGRAM and DOCUMENTATION except as for backup purposes and 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 ANY OF THE COPYRIGHT NOTICES WITHIN THIS PRODUCT AT ANYTIME; ANYWHERE!

1.4 LIMITED WARRANTY ON DISK AND DONGLE

PERSPECTIVE SOFTWARE SOUTH 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 for the date of delivery to you as evidenced by the shipping records. To obtain a warranty service or replacement, you must deliver the defective unit prepaid to PERSPECTIVE SOFTWARE SOUTH.

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 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 SOUTH, or the dealer, distributor or representative) must assume the entire cost of all necessary servicing or repair. Further, PERSPECTIVE SOFTWARE SOUTH 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 SOUTH 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.

Furthermore, if you do not agree to these terms of sale, then you MUST NOT open the shrink wrap on the disks included. Return the product prepaid to PERSPECTIVE SOFTWARE SOUTH within 24 hours of delivery, and you will be refunded your total purchase price, not including shipping charges.

1.6 LIMITATIONS OF REMEDIES

In no event will PERSPECTIVE SOFTWARE SOUTH 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 SOUTH 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 SOUTH. If this registration card has not been received within 30 business days we will then consider that you have not agreed to the terms of this agreement, and are sending returning the product. If PERSPECTIVE SOFTWARE SOUTH is made aware of ANY breech of ANY part of this agreement by you PERSPECTIVE SOFTWARE SOUTH 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 fees.

Updates that you receive at a reduced "update fee" are considered replacements for your current software. When you receive any update of the C-Net product, you must DESTROY all previous versions of the software.

1.8 ACKNOWLEDGMENT

You acknowledge that you have read this agreement, understand it, and agree to be bound by its terms and conditions by opening the shrink wrap on the enclosed diskettes, and by returning the registration card at the same time. You also agree that this agreement is the complete and exclusive statement of the agreement between parties and superceded all proposals or prior agreements, verbal or written, and other communications between the parties to the subject matter of this agreement.

Should you have any questions concerning this agreement, please contact in writing:

PERSPECTIVE SOFTWARE SOUTH
Post Office Box 540
Cuyahoga Falls, OH 44222-0540

1.9 USER SUPPORT

Thank you for purchasing the C-Net 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 BBS;

C-Net 128:	C-Net & MultiNet Support:
CompuCenter BBS	The Service Station
(216)-753-9724	(405)/670-5664
Frank Hunnell, Author	Al Green, Author MultiNet

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

Good luck and happy BBS'ing!

2.0 HARDWARE CONFIGURATION

This section will assist you in choosing the correct computer equipment for use with C-Net v6.0 BBS.

2.1 MODEMS

There are three basic types of modems that are compatible with the program: the 1650 modem and anything compatible (Westridge, Video 7, Total Telecommunications), the Mitey Mo and anything compatible (Hesmodem II), and the Hayes Smartmodem and anything compatible (Prometheus ProModem Commodore 1670, Linker, US Robotics Courier, Supra Modem 2400). 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 ATV0, ATH, ATS0=x, ATS7=x, ATX1, and ATA, RS-232 interfaces, which are necessary to connect most Hayes compatible modems to the Commodore 128, must be tested separately for their compatibility with C-Net 128. RS-232 interfaces that have been successfully tested include the MSD and the Omnitronix brands.

2.2 FLOPPY DISK DRIVES

Generally, any disk drive that can be connected to your 128 and used normally with SAVE, LOAD, and OPEN commands, can also be used with C-Net v6.0. Disk drives that have been successfully tested include the 1541, 1571, SFD-1001, MSD-d2, Indus GT, Pet 4040, 8050, 8250, 9060, 9090. IEEE Interfaces, which are necessary to connect SFD-1001's and other parallel disk drives must be tested separately for compatibility. The only IEEE interface that has been successfully tested is the Skyles Quicksilver 128. There are two terms, however that you must be familiar with when configuring your C-Net v6.0 BBS. When are reference is made to a disk drive DEVICE, it is referring to the unit as a whole. A disk drive may have one or two 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 128 for the 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 drive the individual disk units are numbered 0 and 1 (see disk drive instructions to which slots are which).

2.3 HARD DISK DRIVES

Hard drive manufactures have recently discovered the enormous market potential that exists among Commodore computer users, primarily because of the bulletin board systems that they operate. At the time of this publication,

we have used two different hard drives, the first, and the one used the longest by Perspective Software, is the Lt. Kernal hard drive. Also successfully tested is the CMD hard drive. Before you purchase a hard drive, please contact us first for the latest compatibility information.

When configuring your hard drive, you may configure your hard drive any way you wish, however, it is suggested that you make at least 3 LUs (subdirectories), (0 for system disk, 1, and 2 for whatever else you wish to use them for).

2.4 VIDEO OUTPUT

C-Net uses the 80 Column video chip exclusively for screen output. You MUST be using an RGB monitor or a specially created MONOCHROME (one color only) cable plugged into the RGB output driving a composite monitor. This cable may be made by connecting pin 7 of the RGB output port to the tip of an RCA connector and pin 1 to the ground of the same plug. Also, the 40/80 column key at the top of the 128's keyboard must be depressed at all times.

2.5 CARTRIDGES

No form of "FAST LOAD, MACH128 etc.." or other types of software cartridge can be successfully used with C-Net 128 v6.0, but will only interfere and cause numerous problems.

3.0 SOFTWARE CONFIGURATION

This section covers the configuration of the program, explaining step by step the procedure that you must follow before the program will be ready to place "on-line."

3.1 LOADING THE SYSTEM CONFIGURATION PROGRAM

The 3.50" master diskette, unless specified otherwise, is in Commodore 1581 format. You must be using a 1581 for proper loading and copying of the software.

NOTE: For Lt. Kernal users, your first task should be to copy the ENTIRE master diskette to LU 0 of your hard drive (configured as device 8), then create a BASIC file called "autostart" containing the single line:

```
1 bload"intro":sys14336
```

C-Net will automatically boot from the Lt. Kernal when powered on with this file in place. For floppy users, insert the C-Net master diskette into device 0, and power-up the Commodore 128. Soon, the following menu of options will appear:

(1) Set-up the C-Net BBS
(2) System configuration

Select system configuration (2) by pressing the down arrow key (the second key in the set of arrows at the top of the keyboard) once to move the light bar pointer down, then the RETURN key. Once the system configuration program has finished loading, you will be instructed to insert all system disks, and then to press RETURN. You should remove the C-Net program disk, then insert blank or erasable disks into every disk drive connected to the system. After pressing the RETURN key, C-Net will let you know that the system is not yet configured, then a menu of eight options will appear. To properly configure the system, you must select the options in the order following.

3.2 FORMAT DISKS

Disks must be formatted and completely empty before they may be used with C-Net. Systems with only hard drives may skip this section. Press RETURN with the lightbar at the first option to begin formatting disks. You will be asked for the DEVICE and DRIVE location of each disk that is to be formatted. After a disk is formatted, you will be informed of the disk drive status. If there is an error, you should first try another erasable disk before having the disk drive unit checked for problems. Continue to select device and drive numbers until all disk drives contain empty, newly formatted, error-free disks. Go back to the menu by

pressing RETURN when you are asked for another device for formatting.

3.3 GENERAL PARAMETERS

Now move the lightbar to the second option, and press RETURN. For this screen and the following configuration screens, you will be given cursor control using the four control arrows at the top of the keyboard. To change an item on the screen, simply begin typing and press the RETURN key when finished. To exit a screen, press the ESC key, which is located at the top left corner of the keyboard. While exiting a screen, you will be asked if you would like to save what you have changed. You should answer "yes" by entering the letter "y" and then pressing RETURN.

The following information is configured at the general parameters screen:

1) System disk -- device and drive number for storage of all system information (user files, help files, etc.). If you are using a Lt. Kernal, your system disk MUST be configured to either an LU 0 or a 1.
2) E-Mail disk -- device and drive number for storage of all inter-user messages. If you are using a Lt. Kernal, your E-Mail disk must be configured to either an LU 0 or a 1.
3) Etcetera disk __ device and drive number for storage of all system logs (file transfer log, call log, error log, feedback, new user information, etc).
4) G-Files disk __ device and drive number for storage of C-Net's general text and information file system.
5) P-Files disk -- device and drive number for storage of all program modules (the system's modules, and on-line games).
6) Output FEEDBACK, LOGS -- The two numbers on line 6 tell C-Net where to direct system files. The first number directs written text messages such as feedback and new user information. The second number directs the "logs" of caller signon/signoff activity as well as system errors.
   (1) in a position here indicates disk file output
   (to the Etcetera Disk)
   (2) indicates printer output
   (3) indicates output to both disk and printer
   (0) indicates no output at all.
7) Login identifier -- The login identifier is a two character prefix to all user ID's of the system. Both characters must be uppercase letters, or numbers. Do not use punctuation symbols. (eg.,

"CC" is used on my system, because it's name is "CompuCenter").

8) DCD invert -- This entry should ALWAYS be set to 0 if you are using modem type 0, 1 or 3, but can be either a 0 or a 16 for modem type 2 and 4, depending on your RS-232 interface, and whether it supports normal or inverted carrier detection. If your modem was connected when you ran the configuration program, DCD invert should have been automatically set to the correct value for you.

9) Printer device -- usually 4 or 5. Check your printer interface instructions to be sure.

10) Printer secondary (address) -- usually 7, but check your printer interface instructions to be sure.

11) Modem type -- set according to the following list:
(0) Mitey Mo, Hesmodem II
(1) 1650, Westridge, Total Telecommunications, Video 7
(2) Hayes compatibles (extended return code set and non-verbose mode must be supported). C-Net waits fora ring, sends ATA, then waits for a connect code --1 for 300 baud, 5 for 1200 baud, or 10 for 2400 baud. "+++" and ATH are send to hang up. If a dip switch for DTR exists, set it for always on (true.)
(3) Commodore 1670 (this modem does not support ATA while the phone is ringing -- so must always be set to auto-answer mode.)
(4) A Hayes compatible (type 2) modem with DTR (Data Terminal Ready) control ability for fast hang-ups. The RS-232 interface must also support the DTR pin connection to the modem. If a dip switch for DTR exists, set it for line signal (not always on). If a dip switch exists on any modem for CD (carrier detection), insure that it is set for line signal (not always on).

12) Idle baud rate -- baud rate at which the computer should conduct conversation with the modem while the system is waiting for a call. Many 2400 baud modems (including the Hayes itself) require that you select 2400 here. 300 baud modems must select 300. 1200 baud modems may work at either 300 or 1200 here.

13) Default text color -- a color code (0 to 15) for color of all system prompts and status displays. I would suggest against usion 0, black, as a default text color!

14) Drive secondary address -- When writing to files,

1571's tend to write faster (when writing to the back side with the old bug-filled ROM's) with a SA of 1. Most other drives don't mind this 1. The Lt. Kernal will not function with SA of 1, so you must change the 1 on this line to a 2 if you are using the Lt. Kernal.

15) Network/amaint hour -- This is the time of day (hour in military time, 0 is midnight, 12 is noon, etc.) that automaintenace will occur. Automaintenace is described more fully in chapter 17.

When you have finished with this screen, press ESC.

3.4 USER DATA FILES

You should now select the third option. You will be warned that this will erase any existing user data. Enter a "y" to go on. You will be asked for a number of user accounts to initially reserve disk space for -- it is a good idea to slightly overestimate this number. After this number of user accounts is exceeded, however, the files should automatically grow to accommodate any new accounts. It will take several minutes to create the user data files. NOTE: some disk drives may not like to expand the user data files on an as-needed basis, so it may be a good idea to reserve all of the space you think you will ever require right now! Each complete user account requires slightly less than one disk block.

3.5 UNDERSTANDING ACCESS GROUPS

C-Net allows you to have up to 15 separate access groupings, numbered 0 to 14. New users to the system are always placed into group 0. You do not have to use all of the groups -- the ones that you do use need not be consecutive or in any specific ordering. You should choose one of the access groups to be the system operator's group (for you, and maybe a small select group of highly trusted) having highest system privileges. For each group you use, you can specify the following information:

Group name: a title used on the system instead of simply an access group number.

CD: number of calls per day that the group can make. 0 indicates infinite.

MC: how many minutes per call will be allowed. 0 indicates infinite.

I: how many minutes idle will be allowed (how many minutes may pass without hitting any keys before the system will automatically hang up). May NOT be 0!

DL: how many files may be downloaded per call. 0 indicates infinite.

UL: how many files may be uploaded per call.. 0 indicates infinite.

RA: a download ration -- how many blocks may be downloaded in return for every block uploaded. (A user is allowed to exceed this ratio by 1 file of any length at all times). 0 indicates no restriction on downloading based on uploaded blocks.

MS: how many messages may be left per call. 0 indicates infinite.

PF: number of minutes that may be spent in the p-files section of the system per call. 0 indicates infinite.

FB: number of "feedbacks" a user may leave per call. 0 here means 0.

ED: number of lines that may be normally used when writing a message in the editor, unless limited by some other factor, such as disk space. Only settings from 7 to 100 are valid. The value given for group 0 will be used also for the "personal statement" section of new user login.

MxM: minutes per day maximum that may be spent on the system, assuming the user has enough calls/days and minutes/call to reach this limit. 0 indicates infinite here.

$Min: per minute system access charge in 1/1000 of a dollar (part of the accounting system, which will be described fully in a chapter to follow).

$Dbt: the maximum debt a user may accumulate on the system, in 1/100 of a dollar. Again, this function will also be described fully in a subsequent chapter.

12345678: eight flags, each having a value 0 or 1, enabling (1) or disabling (0) a system function. The eight system function flags are as follows:

1: System Maintenance (system operators only)
2: Electronic (private user to user) Mail
3: The user listing and search system
4: Editing parameters (password, etc.)
5: General message subboard, file transfer, p-file, and g-file systems maintenance (maintenance features for each system described in their respective chapters).
6: Allows use of MCI commands BCFHKNORU and Z only. See section 14.0 for further MCI information.
7: Allows use of ALL MCI commands.
8: Allows the user the ability to "re-logon" to the system -- described further in another chapter.

To actually edit your access groups, see chapter 16.3 "Editing accoutns and Groups", once the system is online.

3.6 SUBBOARDS AND UPLOAD/DOWNLOAD BOARDS

For each subboard that you wish to open, you must supply a descriptive title, a device and drive number to tell C-Net where to store the data for the message base, and an access code to tell C-Net which user groups may have access to it. You must use subboards in sequential numerical order, beginning at number 1 -- not haphazardly around the screen. To determine which number to enter for as an access code, you can use the following chart:

Group	Code	Group	Code	Group	Code
0	0	1	1	2	2
3	3	4	4	5	5
6	6	7	7	8	8
9	9	10	A	11	B
12	C	13	D	14	E

To formulate an access number, first decide which groups get access to the subboard, then when asked for access groups, enter the groups allowed access. For example, if you wanted subboard number 3 to be accessible by only groups 3, 4, and 5, you would look at the chart, and enter "3;4;5" An access code giving access to all 15 access groups would be "0123456789ABCDE" all of the codes on the chart.

```
      x     group x only
    ,y      from beginning to group y
    x,      from group x to end
    x,y     from group x to group y
  x;y,z   group x and group y to group z
  w,x;y,z groups w-x and groups y-z
```

To actually edit the subboard and file areas you will need to complete setting up the system, and once actually online, you will need to refer to chapter 13.5 "Maintenance Commands". This will fully explain how to set up your subboard and file transfer bases.

3.7 TRANSFER C-NET FILES

At this point, you may press the RESET button to return to BASIC. To avoid having your Lt. Kernal boot C-Net after you have pressed RESET, press the RUN/STOP key after the Commodore copyright message is displayed, and hold it down until the BASIC cursor appears.

If you have a 1700 or 1750 RAM expander, C-Net is able to make use of it to store three types of files:

(1) program modules (prg. files)

(2) file transfer protocols and machine language overlays (proto files)
(3) sequential files which are read by the system from start to finish, that is, any completely NON-DATA SEQ files (such as menus, g-files, welcome and exit files, not including subboard entry files). Sequential files stored in the expander may not exceed 10,240 bytes (approximately 40 disk blocks).

The RAM expanders are divided into banks of 64k bytes (approximately 256 disk blocks). The 1700 has 2 of these banks; the 1750 has 8. C-Net is not able to load a file partially into one bank, and continue it into another -- a file must fit entirely into one bank. This means that if as C-Net loads a file into the expander, it finds not enough room in the current bank for the file it is attempting to load, it will move to the next bank, leaving some memory in the previous bank unused. The result is this: optimally, a 1700 can store 512 blocks, but because some of the memory at the end of each of its two banks must be wasted, the 1700 may only be good for 480, or even 430 blocks. The same situation holds for the 1750, which can (under optimal circumstances) hold 2048 blocks. You will have to observe the loading process (next chapter) to see if you have over-extended the memory or your expander.

To use a RAM expander, designate a blank and formatted disk as you "RAM loading disk" and copy to it all files you wish to load into the RAM expander, as well as the files "prg.setup" and "m5" from the C-Net master disk. You may use multiple disks for program/proto files, and a separate disk for sequential files. If you use multiple disks, you need only include "m5" on your sequential files disk, and "prg.setup" on the last disk you will be loading from (this is your sequential files disk if you are using a separate disk for them).

Any files NOT included on these disk(s) for loading into the RAM expander must be copied to the appropriate disk(s) in the same manner that one who is not using a RAM expander would.

Note: if you are using a Lt. Kernal, and you have copied the C-Net master disk completely to LU 0, and have configured your system disk and p-files disk to be on the same LU, you have then already completed the following procedures!

WARNING: DO NOT USE A "FAST HACK 'EM" FILES COPIER TO TRANSFER FILES FROM THE C-NET MASTER DISK -- THEY HAVE BEEN

PROVEN TO BE VERY UNRELIABLE AND DANGEROUS TO DATA INTEGRITY!

You should load and use a file copier program such as Jim Butterfield's "copyall" or the 1571 "unicopy" to transfer the following program modules from the C-Net master disk to your designated p-files disk:

prg.maint	prg.term	prg.u/d	prg.email
prg.ulist	prg.new user	prg.news	prg.subs
prg.files	prg.logon	prg.utilities	*prg.vote
*prg.dating	*prg.avalid	prg.umaint	*prg.collect
*prg.charges	*prg.profile	*prg.bbs list	prg.services
prg.amaint.1	prg.amaint.2	prg.setup	prg.gedit
prg.profile	prg.smaint	prg.umaint	prg.ram
prg.copyfiles	prg.dos	prg.uedit	prg.brain
prg.vdata	prg.logoff	prg.searctext	prg.res entry

Files preceded by an asterisk (*) are actually optional files. Not including one or more of these files simply disables the associated main level command(s). Each file will be mentioned as its associated command is described in a later chapter.

Next, you should copy the following system files from the C-Net program disk to your designated system disk.

sys.menu 1	sys.menu 2	sys.menu 3	sys.menu 4
sys.menu 5	sys.menu 6	sys.menu 7	sys.menu 2a
sys.menu 2b	proto 0	proto 1	proto 4
proto 5	proto 6	proto 7	proto 8
proto 9	proto 10	subs.o	uds.o
tratbl 0	tratbl 1		

Also, copy all files beginning "sys.help." to your system disk for a fully operational HELP system.

If you wish to configure a separate "boot" disk (if for instance you are using a Lt. Kernal, and have your system disk and p-files disk configured to LU's other than your boot disk) the following files must be installed on a disk for use in device 8, drive (or LU) 0:

intro	m1	c1	cn
d	m2	m3	su
prg.setup	*m5		

* m5 must only be included if you are reading sequential files into the RAM expander from the same disk.

4.0 GOING ONLINE

This chapter tells you how to put an already configured system on-line and get it set to receive calls.

4.1 BOOTING THE PROGRAM

C-Net must be booted from device 8. If you have either a 1571 or 1581 master, insert the master disk into the appropriate disk drive. If you have a two disk 1541 master, insert disk "one" into either a 1541 or 1571 drive. If you have a device 8 Lt. Kernal, and have copied the master disk to LU 0, and have created the autostart file described in chapter 3, you need not insert any disks. Now, power up the computer. If for any reason you are booting from a copy of the boot files in any other format, the command:

boot"intro"

should be all that is needed to get things moving.

When the light bar menu appears, press RETURN to select "Set-up the C-Net BBS."

If no activity is detected from the keyboard at this light bar menu for a period of approximately 30 seconds, C-Net will automatically skip the date entry prompts, and skip the "insert disks" prompts in an effort to put itself on-line. What this means is, if your system will autoboot when powered-on, and all of the boot files are present on device 8, C-Net will take itself the rest of the way to "waiting for call" in the event of a power failure. The date used for set-up will be either the last date entered by yourself, or the date of the last user's sign-off. A command is provided in system maintenance to change the date on-line.

4.2 SETTING THE DATE AND TIME

First the month will be set. Use the up and down arrows to change the month displayed. If for any reason any characters other than a valid month is displayed in the month location, insure that a fresh copy of the file "d" is placed on your boot disk, and re-boot the system. When the correct month abbreviation is displayed, press the RETURN key. Now you must set the date. To change the date, use the number keys, either on the numeric keypad or at the top of the keyboard. When the correct date is displayed, press the RETURN key. Enter the year, hour, and minute in the same manner. Finally, you must press either "A" or "P" to select AM or PM, respectively. The date you enter will be stored in the file "d" on your boot disk.

NOTE: To protect the boot code from ever becoming overwritten by saved program code on the master disk (or a back-up), never validate (collect) the disk.

4.3 LOAD AND RUN C-NET

When you have finished setting the date and time, another menu will be displayed, giving you a chance to correct the date and time if you have made a mistake. If the date and time are correct, select the option to "Load and Run C-Net" to continue. If the load proceeds correctly, several seconds later, C-Net will clear the screen and ask you if you would like to load PRG files into the RAM expander. If you will not be using the RAM expander, simply press RETURN to continue.

If you intend to load any p-files into the RAM expander, first remove the C-Net master disk from the drive, then insert your RAM loading disk. Press Y to begin loading p-files. As p-files are loaded, each file name and stored location in the RAM expander will be displayed. The bank number will always begin at 0, and increment as a bank fills, and another must be used. The 1700 may use only banks 0 and 1; the 1750 may use banks 0 to 7. If you see a bank number appear that is higher than the maximum bank number allowed by your expander, you are attempting to store more in the RAM expander than it is capable of holding. You must halt the process, and remove some of the files from your RAM loading disk, and place them on appropriate p-files or system disk instead. Then, re-start the boot process.

Once one disk of p-files has been loaded, you will be given the option to load the p-files from another disk. If you intend to do so, remove the first disk, and then insert the next before answering Y. Once you are finished loading p-files, you are then given the option to load sequential files. If you intend to load sequential files into the expander, remove the p-files loading disk and insert the sequential files loading disk before answering Y at the prompt. DO NOT FORGET TO INCLUDE THE FILE "M5" AND "PRG.SETUP" AS PRESCRIBED IN CHAPTER 3. Note that you must load at least one p-file before being able to load any sequential files into RAM.

If you have selected not to load p-files into RAM, or if you have finished filling the expander, you will next be instructed to insert all system disks, and press RETURN. Before pressing RETURN, insure that the disks that you configured the system onto are placed into their correct drives, the disk drives are all on, and your modem is turned on, if it has a power switch. If the system has been configured correctly, the disks will spin for several minutes as the program goes through all set-up routines. Soon, the "C-Net: Waiting for call" message and SAM screen

will be displayed. At this point, we will sidestep to explain everything you now see on the screen.

4.4 THE STATUS WINDOW

The status window consists of the bottom five lines of the screen, which is displayed at all times, except during usage of C-Net's built-in terminal program. When a user calls into the system, the status window will display many variables and statistics of his account. His stats will remain displayed even after he signs off--up until another user calls in.

The first half of the first line contains the "on-line' functions menu, "SY AC TS CH NE PR UD U1 U2" which is explained in detail in chapter 5. At the far right of the first line, appears the number of minutes remaining for the user until automatic log-off (TIME= xx). If a user has no time limit, TIME= 95 will constantly be displayed. Between the on-line functions menu and the time remaining display, exists space, which will, while a user is using the system, contain the most recently executed command, and the system prompt the command was entered from.

The next three lines will contain information about the most recent user's account, which will be separated into sections for easy interpretation. The sections are coded as follows:

ID The user's ID number, then chosen HANDLE (name used on the system). An ID number of 0 always indicates that the user HAS NO ACCOUNT--he's just browsing the system.

AC The user's access group (0-15), followed by the user's real name. Access groups 10 to 15 are displayed as a single HEX digit, "a" to "f."

TZ The user's TIME ZONE (-23 to 23; your time zone is always 0), followed by the user's phone number, then birthdate.

CALL Will be a series of numbers of the form CCC:TTTT DD/MM:EEEE, such as 086:51866 01/03:0012, where CCC is the number of calls your system has received since setup, TTTTT is the number of calls your system has ever received, DD is the number of calls the user has made today, MM is the maximum number he can make in one day, and EEEE is the number of calls he has ever made to the system.

LAST Is simply the date and time of the user's last call to the system.

PARM Contains the user's screen dimensions, in the form WW:LL, where WW is the width in columns, and LL is the length in lines or rows.

ON@ Simply tells the time at which the user connected.

BAL Is a positive or negative measure of the user's account balance (for the accounting system, described further later), measured in cents (1/100) of a dollar.

CMP Is the user's computer type, abbreviated to 5 letters.
IDLE Is the number of minutes and seconds the user has sat at a command prompt without pressing a key. If this timer reaches the maximum number of minutes idle (I) that has been specified for the user's access group, the system will automatically log the user off.
MIN Minutes used by the user during previous calls today, followed by the maximum number of minutes the user may use in one day, as specified by his access group setting.
CPS Characters per second (the user's connect baud rate, divided by 10).
USR The number of user accounts being used on your system (including deleted accounts).
MR Check marked if the "more?" mode is enabled.
CG Check marked if the user has selected Commodore graphics.
XP Check marked if the user has selected Novice experience; an ! appears if the user has selected full expert mode.
LF If line-feeds are sent after each carriage return.
UC Check marked if the user has only upper case.
UP The number of blocks the user has ever uploaded.
DN The number of blocks the user has ever downloaded.
PV The number of private messages the user has ever left.
PB The number of public messages the user has ever left.
PAGE The letters 'PAGE' will flash if the user has requested to chat with you.

The space following 'PAGE' is reserved for the user's reason for chatting.

4.5 THE SYSTEM ACTIVITY MONITOR

While waiting for a call, the text output window will be filled with System Activity Monitor (SAM, for short) information. Three separate SAM screens are available. To change screens (only when "C-Net: Waiting for call" is displayed), press the appropriate screen number:

(1) SAM variables. SAM keeps track of 16 system activities: feedback, e-mail sent, e-mail sent to the sysop, subboard posts, responses to posts, g-files read, p-files ran, system errors, new users, files uploaded, blocks uploaded, files downloaded, blocks downloaded, minutes of system usage, minutes of system idleness, and accounting system total charges. Each of these variables is tracked in five different ways:

LAST: what the last user of the system did on-line.
SETUP: what has been done by all users since the system was last set-up.
PERIOD: this column of numbers only re-sets when you

want it to -- by pressing C=P described below.

TOTAL: running totals of everything that has happened on the system since first configuring it.

CURRENT: tells you the amount of an item present at any given time. For example, a number 5 under CURRENT across from feedback tells you that you now have 5 pieces of feedback waiting to be read. The total number of files and blocks present in the file transfer system are placed under CURRENT across from files uploaded and blocks uploaded. These numbers are not repeated (and wouldn't make any sense) following files and blocks downloaded.

In the upper right corner, SAM will display the number of free blocks on all devices and drives (or LU's) used with the system. In the lower right corner, SAM displays the dates and times that each of the four accumulating columns has last been reset.

(2) SAM Communications statistics, number of local calls, 2400 users, 1200 users, 300 users, carrier disconnects, chat disconnects, exceeded time logoffs, RES users, avalid attempts, avalid failures, network linkups,

(3) The large digit time of day clock. Neat to watch!

(4) The System Activity Graph. Each 20 minute period of the day is marked along the x-axis (the horizontal bar at the bottom of the window), beginning with midnight, noon in the center, and 11:40 PM at the far right. For each of these 20 minute periods, a vertical column shows how active the system has been (ie, a user logged on) during this time of the day as a percentage of the total minutes the system has been on-line during this time of the day. At a quick glance, you are able to determine your system's busiest and least busy times during the day.

Other commands available while the system is waiting for a call are as follows:

C=P Hold the commodore key and press P to reset the SAM PERIOD column to all zeros.

C=C Hold the Commodore key and press C to cause C-Net to run through all system files re-tallying the CURRENT column. If the system has crashed or been subject to power loss, the SAM current column may eventually become erroneous.

<- Press the arrow key under the ESC key in the upper left

corner of the keyboard to toggle screen blanking on and off. With screen blanking enabled, your screen will automatically become blank if more than approximately 15 seconds passes with the system waiting for a call and no activity from the keyboard.

4.5 MONITORING AND CONTROL SYSTEM (M.A.C.S.)

To display the MACS control panel, press C=M from the waiting for call screen. There are 24 system options available from this screen, each of which you may configure for your individual system needs. These include:

1. Phone number check at logon
2. Reserved accounts
3. The Wall feature
4. 3-Day new log
5. C-Net networking
6. Main MACROS
7. Today in history
8. Statistics at logon
9. Scan for new at logon
10. Quote of the day
11. Allow 'GUEST' users
12. Status window OFF at logon
13. Feedback goes to sysop mailbox
14. Status window OFF at logon for ID 1
15. User list at LOGON prompt
16. 80 column sys.start

To activate/deactivate any one of these options, press the corresponding letter or number appearing on the screen. To exit MACS, press the back-arrow key.

For more advanced users, you may wish to add your own variables to this list, by editing PRG.SERVICES, listing following line 63000. The variable MA(x) determine whether a feature is SET ON or OFF.

4.6 LOGGING ON TO THE SYSTEM

At this point, the system is ready for a caller. You may either wait for someone to call in "remotely" (through your phone modem) or sign on to the system from "local" mode. To call "locally" you must move the small on-line functions lightbar to LO by pressing the right arrow key (above INST/DEL) twice, then activate it by using the cursor up key.

When someone has called, either remotely or locally, the program's copyright message will be displayed, then the user will be asked to press his backspace key. By analyzing the character that is received here, C-Net is able to determine

whether the caller is using a Commodore color & graphics translation. The file "sys.start" (if present on the system disk--see system maintenance, chapter 16 for instructions on how to write a file) will be displayed here.

Next, the program will instruct the user to enter his handle or login ID. If the user makes a mistake entering any of this information, or simply presses RETURN here, he will be told to enter NEW in order to receive an account, and is then given another chance to enter his logon information. If the user makes four incorrect login attempts, without entering NEW, the system will automatically disconnect him.

A way to INSTANTLY log on from local mode as account number 1 (presumably your account) is to hold down the CONTROL key as you select the LOC option on the on-line functions menu, and keep the CONTROL held down until the cursor drops to the middle of the screen. All logon prompts are skipped by doing this. If you continue to hold down the CONTROL key while the system reads your account from disk, all other logon procedures will also be avoided, taking you instead directly to the system maintenance prompt.

4.7 NEW USER APPLICATION

Entering NEW (which you will have to do initially to become a user of your own system) will begin the new user application process. The status window will display "new user login in progress" to the left of the time remaining (TIME=) display until the new user login process has been completed, or, if it is aborted, another user logs on. The file "sys.new user" (if present on your system disk) will be displayed at this time. The new user login process consists of these four parts:

(1) General information (a handle to use on the system, a real name, a phone number, a password, two lines of address, and a birthdate)
(2) Terminal parameters (computer type, whether or not lower case will be used, screen width in columns, screen length in rows, whether or not linefeeds are required after carriage returns, whether or not the "More?" option will be used, the user's chosen level of system help, the user's time zone, and whether or not the user is "paranoid"). Several of these parameters require further explanation:

"MORE?" OPTION: if enabled, will cause screen output to be paused after the screen is filled, until the user presses a key. If the N key is pressed at a "More?" prompt, an attempt will be made to abort the output.

HELP LEVEL: if set at "beginner" will cause the system

to display important commands before every command level prompt. If set at "novice" these command helps are suppressed. If set at "expert" other system files, such as entry information to subboards and file transfer areas is also suppressed.

TIME ZONE: a user may select a number of hours (-23 to +23) that his particular time zone is different relative to the system will display all dates (normally displayed in system time) relative to any given user's time zone--as if the system were in his own time zone.

PARANOID: if a user selects that he is NOT paranoid, all other users are able to perform commands to display his real name, address, phone number and birthdate. That is, the user does not mind that other people on your system can view his normally confidential information.

(3) Miscellaneous questions. As initially programmed, the system requests the user's occupation and favorite color for your information. This information (along with the personal statement to follow) is written into a file for your review--it is not retained by the system. You may alter the miscellaneous questions by changing the DATA statement on line 62048 of the file "prg.new user." The first data element, an integer, tells how many questions(in quotation marks) are to follow.

(4) A personal statement (a chance to type a paragraph or two briefly explaining anything else that needs explaining).

If you create a file "sys.badnames" on your system disk, the system will allow you to disallow certain handles or handle fragments from being used on the system. Again, refer to section 16.1 for information about creating files. Each line of the file should be written to contain a separate pattern. Use the left arrow character (underneath the ESC key) to represent spaces, before, after, or contained within patterns. For example, if you enter TOM on one line, the system will not allow TOM TURKEY, ATOM, or ATOMIZER to be used as handles. Using _TOM instead will allow ATOM and ATOMIZER, but not TOM TURKEY because the line _TOM must match a space before TOM. Entering _BAG_ will not allow handles containing the word BAG, but will allow BAGGAGE and ABAGALE, because the line _BAG_ must match spaces on either side of the word BAG.

When the new user process has completely finished, the user is automatically given an access grouping of 0. Local callers, however, may have a way around this!

When the system is fully operational, you may configure a feature known as AUTO CALL-BACK VALIDATION. Auto call-back validation allows you to have your system automatically use the modem to call new users back who live within your system's local calling area, and give them a predetermined access grouping other than zero. Use the program file "prg.utilities" to configure this feature. A program file like prg.utilities must be added to a system p-files library and executed (see chapter 11) to be usable. This feature is only available for use with the Hayes compatible and the 1670 modems. If there are prefixes of another area code besides your own that are also local to you, you must enter the second area code followed immediately by the prefix within the second area code for each such prefix when asked for prefixes by the prg.utilities configuration program.

4.8 FURTHER LOGIN PROCEDURES

The following occur once a user has successfully logged on to the system (not aborted by INSTANT login):

(1) The user is informed of the number of calls that he has remaining to make to the system this day (only if not an infinite number more).

(2) The file "sys.welcome" will be displayed (if present on the system disk). Note: if the user used ! following his login ID when signing on, this file will be suppressed.

(3) The system will check the directory of system news files, to see if there are any new files to be displayed to the user. If so, there will be at this time.

(4) If the user hasn't called since his last birthday, the system will greet him with "Happy Birthday!" All new users fall into this category.

(5) The system will offer to check all message bases for new messages. If the user selects to do so, the system will construct a table of subboard names, the number of messages on each, followed by the number of new messages on each.

(6) If the user has mail waiting for him, he will be given the option to immediately move to the electronic mail subsystem to read it. If the user selects to do so, he'll be taken to the e-mail system, given a list of

all e-mail subjects and authors, then have the first one displayed automatically.

The MAIN command level is where the user is normally placed after this has been completed.

5.0 ONLINE FUNCTIONS

You are able to change a user's access group, how much time he has remaining, and toggle on or off several other system functions at any time without interfering with the system's operation. The menu of these functions is located at the upper left corner of the status window. A function is "activated" if there is a checkmark to the left of the function's abbreviation on the menu. To move the light bar across the menu, use the left and right arrow keys. To activate or deactivate any function, use the up arrow key. The online functions menu is not active while the system is "thinking"-- only when printing information or waiting at a command prompt.

5.1 (SY) SYSOP STATUS

Activating this function indicates to users that you are available for on-line conversation with them. With this function activated, a user requesting chat mode will be given the message "Ringing SysOp!" and a whistle will be made on your monitor if the volume is turned up. Otherwise, the user will be told that you are not available, and will be asked if he would like to leave feedback, instead.

5.2 (AC) ACCESS CHANGE

When active, this function allows you to change the user's access group while on-line -- sometimes known as "on-line validation." Use the left and right arrow keys to change the access group number. In order for a user to take full advantage of his new access group, he must execute the ST command at the main command level, which forces C-Net to reconfigure all access group variables.

5.3 (LO) LOCAL MODE

Activate this function from the "waiting for call" screen to log on to the system in local mode. 'Activating this function while a user is remotely on the system will cause the system to enter local mode, disabling his terminal completely, until you deactivate the function. If you are logged on in local mode, deactivating this function will cause the system to reset and return to the "waiting for call" screen without logging your call to disk -- use O! to log off normally.

5.4 (TR) TIME STILL REMAINING

When this function is activated, you are able to use the left and right arrow keys to change the number of minutes that the user has remaining on the system for his current call. The time remaining change will simultaneously be reflected on the top line of the status window. When

altering the time remaining, you may use the down arrow key to immediately bring the time remaining to 0 -- usually immediately logging the user off of the system.

5.5 (CH) CHAT MODE

Activating this function while at any input prompt, will display the message "Chatting with SysOp," and place the user into "chat mode." In chat mode, you and the user may freely type to one another until the chat mode is deactivated, when the message "Returning to system" will be displayed, and the user will be placed at the command prompt from which he came. During chat mode, the user's time remaining will not decrease.

5.6 (NW) NEW USERS

Activating this function will make your system a "private" system. That is, callers will not be able to log on as NEW to become a user of your system--only previously registered users will be able to log on.

5.7 (PR) PRINTER

While this function is active, complete lines of text that are printed to the screen will also be sent to the printer. The printer must be turned on, and configured correctly (refer to section 3.3).

5.8 (UD) UPLOAD/DOWNLOAD

While this function is active, all users will be denied access to the file transfer section of C-Net regardless of which access group they are a member of.

5.9 (U1) USER DEFINED FUNCTION 1

5.10 (U2) USER DEFINED FUNCTION 2

5.11 UPLOAD CREDITS

At times it may be convenient to add or subtract from the number of credits a user on-line has (this appears in the lower left corner of the status box labeled U:). For instance, if a user is allowed to download 10 blocks for each block uploaded, and has overextended that ratio, and you wish to increase his "credit" while he's on-line, you may do so. Here's how: hold down the ALT key, and then use the left and right arrow keys to add or subtract credits. Once activated, the number of credits will be replaced by an offset number that ranges from -128 to +127. As soon as a command is entered, this offset number will be added to the number of credits the user owns and the new total will appear in place of the offset number.

5.12 REMOVING THE STATUS WINDOW

The status window may be toggled on and off by holding down the C= key and tapping the CONTROL key. The status window is automatically removed when entering either terminal mode or the visual editor, or if specified in the M.A.C.S. to turn off after the sysop or users logon. While using terminal mode or the visual editor, the status window CAN NOT be replaced using C= CONTROL.

6.0 COMMANDS AVAILABLE AT ALL LEVELS

There are several commands which are available to a user no matter which command level (main, bulletin board, electronic mail, system news, general text files, file transfer, program files, or system maintenance, etc.) he is currently at. Each of these commands will be explained in this chapter.

There are several commands throughout the system that require "verification." That is, the system will pause to ask "Are you sure?" before executing many unrecoverable commands such as deletions, replacements, logoffs, etc. You may avoid these verifications, however, by adding "!" to the end of a command which would normally pause for verification. For example, O! will logoff without asking "Want to logoff the system?" and K4! will kill the fourth bulletin in a message base without asking "Want to kill this bulletin?" etc.

If you ever wish to enter several commands at once, you may type them all at any command prompt, substituting the character "^" (up arrow) where the RETURN key would normally be used. The character "^" is not required to separate commands which do not require a RETURN. For example, O^YN will select logoff, answer Y when asked "Want to logoff the system?: then answer N when asked "Want to leave feedback?" This "command stacking" ability is only limited by the amount of room you have to type at a command prompt.

6.1 CHAT REQUEST/CHAT MODE

The "C" command allows a user to request a chat with the system operator. If the SYS function on the online menu is activated, the message "Paging sysop!" will be displayed, and a whistle will be made on the system monitor. If SYS is not activated, the message "Paging sysop!" will be displayed, and a whistle will be made on the system monitor. If SYS is not activated, the user will be told that you are not available, and will be asked if he would like to leave feedback instead. In either case, the word "PAGE" at the bottom of the status window will flash to let you know that the user has requested a chat with you. The first time that a chat is requested, the user will be asked for a reason why he wants to chat, which will be displayed in the status window next to the flashing word PAGE. The second and third chat requests will not prompt for a reason. If a user requests a chat a fourth time, he is obviously being a pest, so the system will inform him to "Enter 'C' to logoff the system." If the user persists and requests a chat a fifth time, he will be automatically logged off of the system.

6.2 FEEDBACK

Feedback is a message sent directly to the system operator; it is often faster and easier to use than electronic mail. The "F" command is used to leave feedback from any command level. the user will be placed into the editor subsystem to write his message. Feedback is read by the system operator using a command at the system maintenance command level.

6.3 HELP

Many specific definitions of terms and descriptions of commands are available through the help utility. The "H" or "HELP" command is used to enter the help utility from any command level. There are several topics that the system can offer help with. After one help file has been displayed, the user is prompted for another topic. If the help topic is already known, the help command may be entered in the form HELP TOPIC. For example, instead of entering HELP, waiting for completion of the introductory help file, then entering BBS to find out about the BBS section, simply entering HELP BBS will immediately supply a description of the BBS section.

6.4 SYSTEM INFORMATION

The "I" command displays the file "sys.info" from the system disk if it has been written. Generally, this file is used to contain general information about your system -- what it is running o (hardware and software), as well as anything else interesting about it. Don't forget to mention C-Net and where you got it!

6.5 LAST CALL DATE

A user can change his effective last call date by using the "LD" command at any command level. C-Net uses the last call date to determine which messages are new since a user's last call. Changing your last call date will change which messages are termed as "new" and which are termed to be "old." If a user logs off before he reads all new messages, he may use the "LD" command the next time he calls to move his effective last call date back.

6.6 NEW USER FILE

The "NU" command displays the "sys.new user" that was initially displayed to the user when he logged on as "NEW" to the system.

6.7 LOGOFF

The "O" command is used to leave the system. Before the user is logged off, he is asked if he really wants to. If so, he is able to first leave feedback to the system operators.

6.8 PASSWORD CHANGE

A user with the proper access can change his password from any command level by using the "PW" command. Before the password may be changed, the current password must be entered, followed by the new password twice, to insure that no errors were made.

6.9 QUIT

The "Q" command from any command level will return the user to the main command level. If "Q" is used at the main command level, the user will be taken to logoff.

6.10 STATUS

The "ST" command at any command level will display the user's current status on the system. A user's status includes his handle, phone number, real name, address, login ID, access group name, last call date, number of calls to the system today, number of calls he has made total to the system, and the total number of calls the system itself has ever received. In addition, a table of numbers is also displayed, which concisely details file transfer (blocks and files) and message (public and private) activity, for all that has ever occurred, for the current call, and what remains that he is still able to do on this call. If a value is infinite, a dash (-) will be substituted.

6.11 TIME AND CHARGES

The "T" command at any command level displays time and date information: the current time, the time of log on, the number of minutes since logon, and the number of minutes remaining on the system for this call. User accounting system information is also displayed (to be discussed more fully in a chapter to follow): the user's per minute access rate, the charges resulting from connection, a combined charges and credits figure resulting from other system activity, the user's maximum allowed negative balance, and finally his current balance.

6.12 USER INFORMATION

A user can find out information about any other user account by using the "UI" command at any command level, or UI followed by the ID number of the account to examine. User information given includes Login ID, handle, last call date, area code, and computer type. System operators using the "UI" command also always receive the real name, address, birthdate, phone number and access group of the account. If a UI is performed on a non-paranoid user's account, any user

may view the real name, address, birthdate and phone number of that account.

6.13 COLOR/GRAPHICS MODE

Color/graphics mode allows users of Commodore computers using color/graphic capable terminal packages to see text and the Commodore keyboard graphic characters in all 16 colors available for text on the Commodore computers. Color/graphics mode was initially selected at login by the pressing of the backspace key. It becomes necessary, however, to sometimes toggle this mode on or off. The "AT" command may be used from any command level to do this.

6.14 ACTIVITY QUEUE

The AQ command, used at any command prompt, will display a list of the last 15 commands that have been used by the user. The real teleology of this command is realized by the error logging routine--when a system error occurs, the AQ is written to the disk following the error description. This information has proved to be immensely helpful in tracking down problems.

6.15 SUMMARY OF COMMANDS

For a summary of commands that are available at any given command level, a user may enter a question mare ("?") which displays the appropriate menu file from the system disk.

6.16 CONTROL CHARACTERS

There are several control characters that are useful throughout the system. They are the following:
CONTROL S -- may be used to pause the output from C-Net. In local mode, and when using many Commodore terminal packages, the CLR/HOME key may be used instead. Any key may be used to re-start the output.

CONTROL V -- may be used to "verify" the current input line by reprinting it. If there is a lot of "line noise" interference, verifying the input line helps to insure correct input.

CONTROL W -- may be used to delete an entire word on the current input line.

CONTROL X -- may be used to cancel the current input line entirely, to begin from a blank line.

To abort many messages, either the space bar or the "/" character may be used.

7.0 THE MAIN COMMAND LEVEL

The main command level is the "central point" of the system. From here, a user may branch to any one of the many other system command levels.

7.1 BULLETIN BOARD

The bulletin board command level is C-Net's public message base, where public conversations may take place. Entering B from the main command level will move the user to the bulletin board command level, at the first subboard which has been "joined" (see chapter 13.2 for "join" details). A user may request moving to a specific subboard by appending the subboard number to the end of the B command. For example, using B7 moves the user to subboard seven. If the user does not have access to the subboard that he specifies, he will be moved to subboard one. Furthermore, if the user has access to no subboards at all, he will be told that the bulletin board system is empty, and will be returned to the main command level. See chapter 13.0 for bulletin board subsystem details.

7.2 EDIT TERMINAL PARAMETERS

The ET command from the main level will display all of the user's current terminal parameter settings, and then give the user an opportunity to change as many of his parameter settings as he desires. For a review of all of the terminal parameters, consult the section concerning new user login, 4.7.

7.3 GENERAL TEXT FILES

The G command from the main level will take the user to the general text file system. See chapter 11 for general text file system details.

7.4 ELECTRONIC MAIL

The MS command from the main level will take the user to the inter-user message "electronic mail" system. See chapter 9 for a detailed discussion of the electronic mail system.

7.5 SYSTEM NEWS

The N command from the main level will take the user to the system news system. Refer to chapter 12 for a detailed discussion of the system news system.

7.6 PROGRAM FILES

The P command from the main level will take the user to the program file system. See chapter 11 for program file system details.

7.7 SYSTEM MAINTENANCE

The SM command from the main level will take a user (with proper access group having system maintenance access) to the system maintenance system. Refer to chapter 16 for a complete description of the system maintenance system.

7.8 UPLOADING/DOWNLOADING

The UD command used from the main level will take the user to the file transfer level, at the first "joined" (see chapter 12 for details) subboard. A user may request to move to a specific subboard by appending a subboard number to the end of the UD command. For example, using UD7 will move the user to subboard seven. If the user does not have access to the subboard that he specifies, an attempt will be made to move to subboard one instead. Furthermore, if the user has access to no subboards at all, he will be told that the file transfer system is empty, and will be returned to the main command level. Remember that no users will be allowed to enter the file transfer area if the "U/D" function of the on-line functions menu is checkmarked. See chapter 12 for complete details of file transfer system.

7.9 USER LIST

The UL command from the main level will take the user to the user list system. See chapter 10 for further user list system details.

7.10 DATING SYSTEM

The D command from the main level will take the user to the dating system. The dating system must first be configured by a sysop (simply entering using the D command) before other users may use the system. Once configured, a sysop may change the access group setting of the system by using the A command at the dating prompt. The configured dating system creates a new system file "sys.dating" to hold information that the users enter--age range, weight range, interests--the usual dating type of information. Only users who use the dating system become participants of the system. A user may even delete himself from participation in the dating system by using the K command. For a complete list of other dating commands, use the ? command. If you do not wish to use the dating system on your system, simply do not have the file "prg.dating" on your p-files disk or RAM expander.

7.11 VOTING SYSTEM

The V command from the main level will take the user to the voting system. Users are allowed to vote on topics entered by the sysops. Once the user has voted (at most once per topic) a tally of percentages for each vote choice is displayed. The program is fairly user-friendly and easy to use. If you do not wish to use the voting system on your system, simply do not have the file "prg.vote" on your p-files disk or RAM expander.

7.12 BBS LISTING SYSTEM

A full featured BBS listing system is available to users by using the L command from the main level prompt. This program uses a B-tree data structure, which should allow more than 20,000 BBS listings to be entered, stored in numerical order, edited, deleted, and searched for. Each entry includes location, baud rate, and a space for comments. Whenever this program asks for a number, a literal 10 digit phone number is what is being requested, without spaces or other delimiters. If you do not wish to use the BBS listing system on your system, simply do no have the file "prg.bbs list" on your p-files disk or in your RAM expander.

7.13 EDIT PROFILE

The EP command from the main level will allow a user to change what he had previously entered as his real name, phone number, address, and even handle without sysop intervention. This was designed to avoid the ever popular feedback "please change my handle" and "I've moved--please change my address and phone number" requests. Of course, this feature may not be suitable for your needs and system. If you do not wish to use the edit profile system on your system, simply do not have the file "prg.profile" on your p-files disk or in your RAM expander.

7.14 AUTOVALIDATION

If a user wishes to be autovalidated (that is, have the system call him back by modem to verify the phone number he entered as a new user, then assign him a predetermined access group, as was described in the new user login section, 4.7), but failed to take advantage of the opportunity then, may now have a second chance to do so now by using the X command from the main level prompt. To operate correctly, the auto callback validation system must be configured, the user must be in your local calling area, and he must have new user (group 0) status. If you do not wish to use the autovalidation system on your system, simply do not include the file "prg.avalid" on your p-files disk or in your RAM expander.

7.15 ACCOUNTING SUMMARY

C-Net allows you to attach a charge or credit to 15 different system functions, including the use of p-files per minute, the reading of g-files per minute, per every line of text posted in the message base, per every block uploaded or downloaded, and more. See the complete description of the accounting system in chapter 8 for more details. By using the A command from the main level, a user is able to display the amounts that you are charging (or crediting) him for each of these 15 system activities. If a sysop uses the A command, he will first be asked if he would like to edit the table of charges for all access groups. If you do not wish to use the accounting summary command on your system, simply do not have the file "prg.charges" on your p-files disk or in your RAM expander.

7.16 RELOGON

The R command from the main level will allow a user to sign off the system, and return him to the initial sign-on prompt, "press your backspace key" without ever disconnecting the modem. This is useful if several users are at one place, or if users are allowed to hold multiple accounts. A user must belong to an access group with access to the relogon command (one of the several 0 or 1 settings) in order to be able to use it.

7.17 ACCOUNT SUMMARY

One feature that AS offers is a table of numbers which details file transfer and message activity, for all that has occurred, for the current call, and what he is still able to do on this call. If a value is infinite, a dash (-) will be substituted.

7.18 ACTIVITY QUEUE

The AQ command displays the last 16 commands that have been used by the user. The real technology of this command is realized by the error logging routine; when a system error occurs, the AQ is written to the disk along with the error's description. This information can be immensely helpful in tracking down problems.

7.19 TODAYS CALLERS

The TC command displays a list of that day's callers after system cleanup.

7.20 IMMEDIATE PROCESSING

There are several commands that require an answer to an "are you sure?" before executing, such as when deleting a post.

You may avoid these verifications by adding a "!" to the ends of your commands. For example, O! will log off without asking "are you sure?" and will also bypass the option for the user to leave feedback before disconnection.

7.21 COMMAND STACKING

C=Net allows you the ability to enter several commands at once ("stack" them), by typing them all at any command prompt, substituting the character "^" (up arrow) where the RETURN key would normally be used. The up arrow is not required for commands where returns are not needed. For example entering O^YN will select O at the current prompt, select Y at the "are you sure?" prompt, and will answer N for the feedback option.

7.22 MAINTENANCE COMMANDS

Several commands that are only accessible to system operators are available exclusively at the Main command prompt.

ID To use any of the following commands you must use the ID command first. After selecting ID, the system will ask for a password. The default password is "PASS". There is a command in system maintenance to change this. It is not necessary to use this command when the user is logged on in local mode.

EX Execute a pfile. This provides you with the ability to run a prg.file without having to add it to a p-file directory beforehand. When asked for the p-file name, type in the name of the prg.file leaving off the "prg." prefix.

SM Move to the system maintenance subsystem. (chapter 16)

SY Enter the BASIC shell and Monitor. Here, you may actually use BASIC online! You may use the shell to write programs, edit programs (even C-Net files), and even run programs. The used areas in the 128's memory banks 0 and 1 are "blocked off" from BASIC access by manipulation of the start of basic text and variables memory locations. All BASIC I/O, however, is still routed through C-Net's ML, allowing ctrl+s pausing, SPACEBAR aborting of text output, ect... C-Net runs in COMPLETE and total Commodore screen emulation, allowing cursor movement, quote mode, insert mode, and everything else. CTerm has been adapted to do the same (using the CG+ mode). Because C-Net itself must still reside in BASIC memory, there are restrictions. These include:

(1) Lt. Kernal commands MAY NOT be used (because of

conflict of memory problems). Use DLOAD, SCRATCH, DSAVE, DIRECTORY instead.

(2) Files #131, #6, and #4 may not be used (a CLOSE131 or CLOSE6 will disable you system completely).

(3) Graphics/Music/Sprites will cause sure disaster! A simple matter of no extra memory to put that type of program.

(4) Poke/SYS calls are asking for trouble. Even SYSO isn't guaranteed to work; this means that MCI commands are not usable. Use control codes directly within PRINT statements to move the cursor or change colors.

(5) Approximately 85 blocks (the same as for a p-file) is the amount of BASIC workspace available. Attempting to DLOAD a file that is too long will crash the system.

(6) To exit back to the Main command level, enter "q" (must be lowercase) at the fist column of a BASIC input line.

8.0 THE ACCOUNTING SYSTEM

You may use C-Net's accounting system to "charge" users or to give them "credit" for thirteen items:

1) For each minute connected to the system
2) For each minute using the "p-files" section
3) For each minute using the "g-files" section
4) For each line of post in the bulletin board system
5) For each line of response in the BBS
6) For each 20 lines read in the bulletin board system
7) For each line of private e-mail sent
8) For each 20 lines of e-mail received
9) For each block downloaded
10) For each block uploaded
11) For each minute using the UL (user list) system
12) For each vote cast in the vote system
13) For each BBS added to the BBS list system

For now, ignore references to "expansion" charges--they may be used sometime in the future for new system features.

To edit these charges, use the A command (prg.charges) from the main level, and then press Y at the "edit charges?" prompt. Each group of users may have a set of charges different from the other groups. The numbers you enter here are by default CHARGES (that is, subtracted from the user's account balance) unless a number is made negative, in which case that amount is made a CREDIT (that is, added to the user's account). In addition, these numbers are in units of 1/10000ths (one ten-thousandths) of a dollar, or 1/100ths of a penny. For example, the number 1000 represent a dime, the number 33 about a third of a penny, the number -250 a two and a half cent CREDIT. All charges except the first (per screen. To change per minute access, you must use the G command (edit access group data) from system maintenance, or the access group configuration screen of the system utilities program. The "$/Mn" option (per minute access) works the same way as the other charges (in 1/10000 of a dollar) except it may NOT be a negative number--you may not credit users for access to the system. The maximum value for per minute access is 9999, which is $0.9999 (very close to $1!)

In order to track each user's "spending" and "savings," each user's account is given a BALANCE. The RANGE for a user's balance is from -$49.99 to +$49.99. When a new user logs on, his balance is set to $0. To manually alter a user's balance, you must use the A (account edit) command from system maintenance, or the E command while reading feedback

or new user information. The balance here is represented in CENTS (1/00 of $1). Give a user a balance of 2500 to represent $25.00, or a balance of -50 to represent a balance of -$0.50. Remember, the balance must be within -4999 and 4999 at all times.

One other thing-- in order to restrict the extent to which a user's balance may drop below zero (be negative), you may specify a MAXIMUM DEBT ($Dbt) for each access group. This option appears on the access group configurations screen (the G command here, or with system utilities). $Dbt, like the balance, is measured in CENTS. $Dbt may only be positive, from 0000 to 9999. A value of 3400 represents a maximum debt of $34.00 (a minimum balance of -$34.00). Because a user's balance may not drop below -$49.99, a $Dbt setting of anything above $49.99 will still allow a user to "spend" until that debt value on a given call to the system, but after he signs off, his balance will be re-set to the lowest value, -4999 (-$49.99). Also, if credits are accumulated above $49.99, the balance will be limited to 4999 ($49.99). This may be useful if you want to run the accounting system, but never actually RESTRICT the user from access.

If you are charging a user for access to your system (per minute access is not 0), access time to the system will be restricted if the user doesn't have enough money in his account. In addition, before a user is able to perform any function with a CHARGE attached to it, his balance will be examined. If he hasn't enough money, that function will be denied. A user may display the amounts that you are charging (or crediting) him for each system function by using the A command from the main level. The T command, will, in addition to displaying the time and date information, display information about the users balance and charges. Here, the per minute access charge is given for the user's access group, and the charges that have been incurred for this call due to this charge. A composite total of charges and credits for all of the other system functions is given in a value "other charges." The access charges and other charges are summed to produce a "cost of this call" value. Taking these charges into consideration, the user is then informed of his remaining balance. In addition, he is given his maximum credit ($Dbt) value, telling him how far below $0 he may spend.

You may, of course, actually use this system for money--add money to a user's account when he sends you a check or something. However, the entire accounting system may simply be used as a type of CREDIT system, where the credits are in units of dollars and cents. When used as a credit system, the possibilities for control over user activities are endless!

For example, if you wish to allow an access group to be able to download exactly 6 blocks for every block that he uploads, with no "free" blocks at all, simply set that group's per block uploaded CREDIT to -600, and per block downloaded CHARGE to 100. Also make sure you don't allow a DEBT value (set to 0000). $0.06 is credited when a block is uploaded, and $0.01 is charged when a block is downloaded. You may set these charges and credits to tenths or hundredths of a penny, but, remember that the user's balance will be rounded to the nearest penny when he logs off. If you want to give the user 10 "free" blocks to begin with, for this example, set the $Dbt value for his group to 0010 ($0.10).

Many other relationships such as this one may be established through the accounting system--post a certain number of lines in the BBS before downloading so many blocks, upload so many blocks before being able to use so many minutes worth of time in the p-files section, etc. Be creative!

9.0 ELECTRONIC MAIL SUBSYSTEM

The electronic mail ("e-mail") subsystem is C-Net's inter-user private message exchange system. Access to the e-mail subsystem is controlled by a flag in an access group's configuration. Entering the e-mail subsystem, the user is told how many messages there are waiting for him, and of those, how many are new since his last call.

9.1 LISTING MESSAGES

To obtain a list of the messages a user has waiting for him, the L command is used. A message number may be appended to the end of the L command to begin listing at any specific message. E-mail messages are always displayed in the order opposite of the order in which they were received.

9.2 READING MESSAGES

If you haven't read any of your messages yet, simply pressing RETURN will display the first of them. Each consecutive RETURN will cause the following message to be displayed will display the message "that was the last message." Pressing RETURN yet again will begin the cycle through the messages once more.

To read any specific message, simply enter its number at the MAIL prompt.

To read all new messages without prompts between messages, use the N command.

To read all messages without prompts between messages, use the A command.

To display information about (see section 6.12) the user who wrote the message that you've just read, enter the U command at the MAIL prompt. Follow the U command with a message number to display information about the writer of any specific message.

9.3 RESPONDING TO A MESSAGE

To respond to the message that you've just read, use the R command at the MAIL prompt. Follow the R command with a Message number to respond to any specific message. See section 9.4 for further e-mail sending details.

9.4 SENDING A PRIVATE MESSAGE

To send e-mail to another user, use the S command at the MAIL prompt. Follow the S command with a user's account ID number if it is know. If an account number does not follow the S command, the system will request either a handle or a

user ID number to send the message to. Appending ! to the end of an account number here will avoid having the system verify the recipient's handle before continuing. For example, if the first user on your system were BIG BROTHER, the command S1! requests to send mail to his account without ever prompting "Is Frank Hunnell correct?" When you send (or reply to) an e-mail message, there are two features which may be applied to it: If you would like, you may have the system send you a message stating "your message was read, but not replied to" if the recipient of your message reads your message but fails to reply to it.

You may have your message "returned" with any reply made to it. That is, when you receive a reply, the message that the user replied to (which was your original message) will be displayed preceding the reply. This is excellent when you receive large quantities or mail simply containing expressions such as "Ok" or "thanks" when you have absolutely no recollection of what you wrote to the user that initiated the reply in the first place!

9.5 DELETING MAIL

The D command may be used to delete all of you message. Any specific message may be deleted by appending a message number to the end of the D command. The system will verify a delete request unless ! is used following the command.

You may "forward" any one of your messages to another user's account by using the M command followed by a message number. A forwarded message is simultaneously removed from your account.

After responding to a message that the sender has requested be returned with your response (see section 9.4), it is at the same time removed from your account.

9.6 VERIFYING MAIL

To verify e-mail means to read, edit, or delete e-mail that you have previously sent. Often verifying is useful to check on whether a user has replied to or deleted a message that you've sent to him. To verify another user's mail, use the jV command from the MAIL prompt. Follow the V command with a user's account ID number if it is known. If an account number does not follow the V command, the system will request either a handle or a user ID for mail verifying. Appending ! to the end of an account number here (such as the command V1!) will avoid having the system prompt something like "Is Frank Hunnell correct?" to insure that you have the right account number. If the verified account contains no message (or no editable messages) you will be returned to the MAIL prompt. You may only verify message that you have written. If you are a system

operator, however, you may verify any message on the system. If editable messages exist, a list will be displayed. Messages may now be read, edited or deleted.

9.7 ELECTRONIC MAIL MAINTENANCE

System operators may use the Y command to display e-mail on all user accounts. The YN command, instead, will only display the new ones. Follow either the Y or the YN command with an account number to begin displaying at any specific account number. The spacebar will abort at any time.

10.0 USER LIST

Using the user list system, you are able to perform a search for a very specifically defined group of users, list account data in tabular form, or simply display a list of handles.

10.1 OUTPUT ORDER AND TRAVERSE DIRECTION

Searching and listing of accounts can be performed in either alphabetic user handle order, or in user ID number order. Alphabetic handle order searches and listings cause C-Net to have to jump all around the user data file according to the alphabetic order of your user's handles--THE BORDER, then THE BOSS, then THE BOTHER, etc. To perform an ID number order search or listing, C-Net merely has to move through the user data file in a sequential manner--account number 1, then 2, etc. If you are searching your entire user base for an end list of matching accounts that is anticipated to be very small, ID number searching is generally much faster and easier on the disk drive than is alphabetic searching.

You also have an option to move through (traverse) the data in either ascending or descending order. Descending order will search and list in DECREASING ED number order or alphabetic handles order.

10.2 QUICK LIST

You are given the option to perform a simple "quick list" by selecting Y at a prompt "List handles & ID's only?" This type of searching and listing is generally much faster than a normal search because only the handle of each account is read from the disk and displayed. If search restrictions are set for the search, the quick list's speed benefits are lost, however, because C-Net must again examine entire user records to see if restrictions are satisfied.

10.3 SEARCH RESTRICTIONS

You may set search restrictions on a listing to find specified characters within a handle or real name, access group, computer type or area code. Only system operators may set restrictions on characters in the real name and access groups. A very elaborate combination of these fields may have restrictions set upon them. A list of the fields that may have restrictions set upon them will be displayed to pick from. Press RETURN when asked for another restriction variable to end the "set" of restrictions.

A search may consist of several "sets" of search restrictions. An account is matched and displayed if it matches the restrictions set in ANY one of the search sets that is specified (an OR condition). When you do not wish

to specify another set of restrictions, press RETURN when you are asked if you want "Another set of restrictions?"

Any given set of restrictions will only be matched if every variable component of the set is matched (an AND condition).

Each variable of any given set may have one or several possibilities of text to match because you may set multiple restrictions on the same variable of any given set. Each restriction of the same variable in a given set is taken as an OR condition.

With this ability, it is possible to search for such combinations as:

```
          (SET  1)
ACCESS = 5 OR ACCESS = 7
             AND
AREA = 313 OR AREA = 517
          --  OR  --
          (SET  2)
ACCESS = 1 OR ACCESS = 2
             AND
NAME = TOM OR NAME = JIM
```

10.4 WHERE THE SEARCH BEGINS

If the search is by ID number order, you must specify a user account number to start listing or searching from. If the search is alphabetic handle order, you must specify a handle to begin listing or searching from. For example, entering D would begin with users whose handles begin with D, entering THE would begin with users whose handles begin with THE, etc.

10.5 THE LISTING

Before the search begins, the set restrictions information is summarized. Once the search has begun, user information is displayed across the screen in tabular 80 column format if the user's defined column width is anything less than 80. The ID number, handle, last call date, phone number, access (under the A column), computer type (under the C column), real name, and birthdate are displayed. If the user performing the search is not a system operator, and a user whose account is being displayed has selected that he is paranoid, the phone number will only display the area code, and the real name and birthdate will not be displayed at all. Only system operators will be able to see the access group at all times.

The search ends when either the end of the user data file has been reached or the user hits the space bar or / key. When the search is finished, the user is returned to the main command level.

11.0 G-FILES AND P-FILES SUBSYSTEMS

C-Net's G-Files and P-Files systems use the same command structure, so will be discussed together in this chapter.

11.1 LEVEL COMMANDS

A Add an item to the list. When you choose to add a new item to the list, you'll be prompted for a title. Secondly you'll be prompted if this is a new subdirectory, then a short description, and if the entry is a program file, next to allow word wrapping, and line inserts, then a date to when the file appeared, a password, lock out time, so that a user cannot read/run the file until a certain amount of time has passed, access groups, age requirements, to lock "close" a file, and what disk, and device the file is located, and to put this item in last, or alphabetically.

Ex Edit an item on the list. A user with P-File/G-File maintenance privileges can change any of the above data, that was entered when first added.

Kx Kill an item on the list. A user with P-File/G-File maintenance privileges can delete an item from the list by using the command "K" followed by the number of the entry he wishes to kill.

S/L Scan the available items. Shows the files available to the user. A user with P-File/G-File maintenance privileges can see all the files available.

Xx Move a file from the list to the bottom of the list. By using the "X" command followed by the number of the entry he wishes to move, the user can move files around, top to bottom.

N Read about the new file. This command lets the user read a SEQ file that the SYSOP must install that can detail a new file, or give instructions.

V List with Access Requirements. Usually a directory is shown without access requirements this lets a user with G-File/P-File maintenance privileges see what the actual access requirements are for each entry, works similar to the "S" command or the "L" command.

- Read the G-File/P-File execution log. This log simply shows who accessed what, and at what time. The option to restart the log is prompted when the log has been completely read back to a user with G-File/P-File maintenance privileges.

Z Edit the entry file for the current area, or subdirectory of an area. The entry files are displayed to users as the enter the area, unless their help levels are set to "expert"

11.2 SELECTING AN ITEM

An item may be "selected" (G-Files read, P-Files ran) by entering its number from the list of items at the command prompt.

11.3 ADDITIONAL COMMANDS AVAILABLE IN G-FILES/P-FILES

In addition, many other commands which are listed under the main menu are also available here. These include: Chat, Feedback, Help, MSend, STatus, Time.

12. NEWS SYSTEM

The news subsystem is where all system news files and news bulletins are written and read. All new news messages are automatically displayed to a user as soon as he signs on. Use the N command from MAIN to enter the news subsystem. Only news files that you have access to will appear as part of the news subsystem. If you are not a system operator, and there are no accessible system news files, you will be told "the news subsystem is empty" and returned to the MAIN prompt. If news files exist, you will be told how many there are, and of those, how many are new since your last call, before being placed at the NEWS prompt.

12.1 LISTING NEWS FILES

Use the L command to display a list of news files, the dates they were created, and, if you are a system operator, the access coding and individual message "type" (to be discussed soon) of each. Follow the L command with a file number to begin the listing at any specific news file. Messages which have been posted with future dates, and are not yet accessible by any users, are marked with an asterisk (*).

12.2 READING NEWS FILES

To read a specific news file, enter its file number at the NEWS prompt. By appending a news file number to the end of the N command from the MAIN prompt, any specific news file may be displayed immediately after entering the news subsystem.

12.3 ADDING NEWS FILES

A system operator may use the A command to create a new news file. First, a title and access coding must be selected for the file. There are three news file "types" you must then choose from:

UNAB unabortable. Answer Y at the prompt to have your file "force-read." When a user reads this file for the first time, he will be unable to press the spacebar to abort it.

RECU recurring. Answer Y at the prompt to have your file recurring. The file will be displayed to users each time they sign on, new or not. The first time it appears, it will be unabortable as well.

NORM normal. Do not select either of the above news types. The news file will be displayed abortable once when new.

After using the editor subsystem to write the text of the news file, you must select two "date offsets" for the file.

The first is the number of days by which to alter the "posting" date. Simply pressing RETURN here will use today's date as the date of creation for the news file. Entering a positive number (in days) will hold the news file invisible to users until the specified number of days has gone by. You may instead enter a negative number to have it seem that the news file was created any number of days in the past.

The second offset may be used to specify the life span of the news file in days. Simply pressing RETURN here will cause the news file to remain indefinitely (until it is killed, section 12.4). Entering a positive number (of days) will cause the file to be automatically deleted (by automaintenance, section 17.0) after that number of days from TODAY'S date.

12.4 KILLING NEWS FILES

To remove a system news file, use the K command followed by the news file number. Only system operators may remove files.

12.5 EDITING NEWS FILES

By using the E command followed by the news file number, a system operator is able to change anything about an existing news files. First, the title and access coding may be changed. By pressing RETURN when asked for either a new title or news access coding, the old value is retained. Next, you must select again if the file will be force-read or recurring. You may NOT press RETURN here to retain old values--what you enter will replace the file's previous "type" status. Then, the editor subsystem may be used to change the file's contents. After exiting from the editor, you then have the option to reset the dates (post date, and auto-delete date) of the file.

13.0 THE MESSAGE AND FILE BASES

C-Net's filing system uses a subdirectory system, which makes possible an infinite number of subboards. Each subboard list may contain a maximum of at least 40 subboards, some or all of which may be subdirectories. There are two separate "base" areas, the UDBase and the Message Base. There is one special type of UDBase subboard, the "direct exchange" which will be discussed later in this chapter.

Each message base my house up to 232 posts, and a total of 718 messages (posts and responses). Each UDBase may house a total of 143 files.

Entering the Base or UDBase, you may optionally add a subboard number, or path of subboard numbers (in the case of subdirectories) to the command to move immediately into a particular subboard. For example, to move immediately to the 5 subboard, type: B5
Or to move to the 3rd, which is a subdirectory, and then to the 6th subboard in that subdirectory, type: B3;6

13.1 ESSENTIAL COMMANDS

If you wish to simply read the next item, you may press RETURN at any time. When all items have been read, reading will begin again from the beginning. All commands that act on an individual item will default to the previous item read, unless an item number is specified following the command. Here are the more important of the Base commands:

R n Read an item and its responses, if any. First, the "header" of the message will be read, consisting of the name of the author (or uploader), the date the item was created, and an optional "to" heading. If the item is a file, additional information such as the length of the file, its last download, number of downloads, and estimated time of download will also be displayed. If responses are enabled for this subboard, a prompt "End of item option?" will be displayed following the reading of any item.

Most of the commands listed below are available from this prompt (About, Download, Extract, Grab, etc.) in addition to several others, namely:

P n Leave a private message for the author of response #n (just entering P will allow you to leave a message to the author of the item itself).
R Respond to the item. See the Post command below for some of the message options.
U n Receive User Information about the author of

response #n (just entering U will display information about the author of the item itself)

S n Scan item titles (beginning at item). "Scanning" will display the item's title, as well as the number of responses, and of those, how many are new. Additionally, if the item is a, the length in blocks and the item's "short description" will also be displayed.

P Post a new item. This command is only active on a subboard which allows messages. You will be asked for a title, and depending on various privilege and subboard flags:

(1) If you would like to address this message to a user. The benefit here is that the user you address the message to will be informed of its presence at logon. The message is NOT automatically a private one. Others can still read it.
(2) If you would like to use an alias. With proper access, you can write a message under someone else's account. If you have several accounts for the system operators, this might be a handy feature for you.
(3) If you would like the message to be private. If the subboard is so configured, you may leave "private" messages in the public message area. Only the intended recipient of such messages will be able to view them. In the case of a file, only this person will be able to download it!
(4) If you would like the message to be anonymous. The subboard must allow anonymous messages, and the user must have the access to leave anonymous messages. Someone with "trace anonymous" access will be able to view the name of an anonymous author, having a "*" placed beside his name to signify his intentions.

D n Download an item's file. If an item has an attached file (in the case of a files only area, they probably all do), this will allow a user to request to download a particular file. Such a request may be denied for MANY reasons, including not enough time, not enough credits according to either the byte ratio or the file ratio, time-of-day restrictions, the item is private, and others-the appropriate condition will be reported to the user. If all is OK, the user may be given several options before actually commencing the transfer, such as changing protocol, etc.

Credits are subtracted ONLY if the transfer was successful, in full. If an item is marked as a free download (see the Y

command), no credits or accounting will be altered. When a user is a system operator, or a sub-operator of a particular board, credits or charges will NEVER be subtracted for downloads from (or uploads to) a file area.

U Upload a file to the system. When the subboard allows files, a user may use the U command to send files to the system.

UM For Punter and Ymodem, this will allow the user to upload MULTIPLE files to the system at once. The user's terminal program must support this feature.

Note that when a file is unvalidated, either because it was uploaded to a subboard which requires validation, or a description was not provided, credits for the file will NOT be awarded until these conditions are each met.

RN n Read all NEW items (beginning at item number, normally 1). Items will be displayed that are new since your NewItems date. New responses to old items will also be displayed. SN (scan all subboards) is a variation of this command.

SE Search items for occurrences of text. This feature will search text messages for several specified text strings. The search is NOT case sensitive. You will be prompted to an item number, or A for all items, or G for global (all subboards accessible from the current list of subboards).

Q Quit back to the MAIN prompt.

13.2 MOVING AROUND THE BASE

L List available subboards. Along with the list of subboards, the messages "DWN" (meaning the subboard is closed, see the EL command), and "DIR" (the item is actually a subdirectory, housing more subboards) are printed. In order to move from one subboard to another, it is only necessary to enter that subboard number (from the list of subboards) at the prompt.

>or< Move to the next of previous subboard according to their order on the list of available subboards.

? If inside of a subdirectory, this command will immediately return to the listing from which that subdirectory was chosen. That is, in the "path" of subdirectories you chose to arrive where you are now. This will "back up" one step.

B/UD If you are in the UDBase, UD will simply read the subboard information (see the maintenance section below). If you are in the base, UD will transport you to the UDBase directly, bypassing MAIN. The same holds true for the B command. In the Base, this will read

the subboard information. In the UDBase this will transport you to the Message Base.

PF Move directly to the PFiles area, bypassing MAIN. See the maintenance section to select a default PFile path to move to.

J n Join/drop a subboard (which subboard, defaults to the current subboard). When a subboard is "dropped," all commands which globally process (such as Read All, Search Globally, and others) will skip that subboard. In addition, the > and < commands will "go around" dropped subboards.

VI View the name of the sub-operators. If you have designated individuals to be "sub-operators" for a particular subboard, this command will list these people. See the EL command for information concerning adding sub-operators.

M Mail to a sub-operator. Again, the View list will be displayed, and a prompt will be given to choose which one of the sub-operators you would like to leave mail for. Generally, it is desirable that users leave the suboperator messages concerning his subboard, instead of leaving them in general feedback.

+,- Forward, reverse read direction. Normally the order of reading messages and scanning their titles is in the "forward" direction, from 1 to 2, to 3, etc. The - command can be used to reverse this, reading from the newest (highest numbered) to the oldest. + will restore things to normal.

WU n Write to the uploader of file number n in the UDBase.

AR Read the list of archived files in the UDBase.

BL Display the number of free blocks on the UDBase subboard's drive.

13.3 SELECTING ITEMS

* n Select or unselect an item. This option simply adds an item to a list of "selected" items which may be operated on as a group. If an item is again selected, the effect is actually to "unselect" it. Note that a selection request may be denied for the same reasons that a download request may be.

SS Scan selections displays the list of selected items so far. A summary is displayed of the total number of items, their length in bytes, and estimated download time.

DS Download selected files. If you are using a batch protocol (Ymodem or MultiPunter), this command may be used to transfer all files at once. As a file is successfully transferred, it is removed from the selection list so that transfer may be resumed if ever it is interrupted.

*C Clear selection list resets the selection list. Note

that selecting to Download a single file using the D command, or uploading will automatically reset the selection list.

13.4 OTHER COMMANDS

ED n Edit the contents of a Post in the Message Base.

N n This command is equivalent to the Read command with the exception that only New responses will be displayed. If there are no new responses, this command is completely equivalent to the Read command.

G n Grab an item's contents. You will be prompted as to whether you'd like an ASCII or a Hex display. Only text files meant to be read (typed) may be displayed legibly in ASCII.

K n Kill an item. A system operator, or a user with the proper privilege flag set may delete any file or item. In addition, a user with the proper privilege flag set may delete his own files and messages. At this time, individual responses to an item may not be killed.

When a file is killed, an option is provided to be able to "remove" upload credits that were given for a file. Credits subtracted in this way will take effect the next time the user calls.

Y n Edit item's attributes. Using this command, a system operator (or suboperator) can mark any file with any of several flags, or edit parts of its header.

- F Free download. Credits will not be subtracted, and charges will not be made for such a file
- P Protected. Auto-maintenance will "skip" this file, even if it is "old"
- R Responses disabled. Only system operators will be able to respond to this item.
- S Sysop favorite. When a user reads this item "sysop favorite" will be displayed.
- N Re-name the item.
- I Change the short description of a file
- D Change the date of an item

A n About an item. This provides a simple tabular list of all users who have written responses for the item, along with the dates of these messages.

W n Write file info after upload. In the case of a batch upload, and the user misses his chance to add descriptions to his uploads immediately after the upload (ran out of time or simply aborted the process), he may use this command to "go back" and provide the descriptions necessary to receive credit for his uploads.

Note that in addition, many other important commands which are listed on the main level menu are also available here. These include: Chat, Feedback, Help, MSend, Off, STatus, Time. See chapter 6 for a complete list.

13.5 MAINTENANCE COMMANDS

AL Add a subboard to the current list of subboards. Note that it is necessary that you NOT be "within" a subboard at the time you use this command. You must either be at the BASE or UDBASE prompt, or just have entered a subdirectory. You will only be prompted for a title--what you'd like to call it. Note that ALL subboard titles must be unique, regardless of whether they are members of subdirectories or not.

If you wish to edit any one of the many other subboard configuration options, you must use the EL command.

AO Adopt orphan files. When you first configure you C-Net BBS, or anytime after that point you wish to add new files into the list of items for a subboard, you may do so with this command, and the proper privilege flag set. First copy the file(s) into the subboard's directory, then select the command. After asking for a filename pattern (press RETURN for all files), C-Net will prompt you with the files on the directory (that aren't already part of the subboard). It will then allow you to select whether you'd like to add them.

V Validate a file. This command provides that last step subboard on which you require validation. Once all of the requirements are met for file validation, credits will be added to the uploader's account.

MO n Move an item to another subboard.

KL n Kill subboard from list (you must specify which one). In order to use this command, it is necessary that you not be "within" a subboard, but rather at the BASE, UDBASE, or a subdirectory prompt. All files contained within the subdirectory for this subboard will be erased, including the subdirectory itself. If you wish to save any files, you must copy them out first!

EL n Edit subboard (which subboard, defaults to the current subboard). This command can be used to change many of the subboard's options. These include:

N The name of the subboard. C-Net will attempt to rename subdirectory files if the location of the subboard is the default UDBASE or BASE location.

L The location. If you change the location, you are responsible for the creation of whatever subdirectories you specify. See the AL command.

S Suboperators. You may specify up to 5

suboperators per subboard, each having complete maintenance access for that area. This includes unlimited u/d ratios, validating files, providing descriptions for files, and killing files.

B Board type. A subboard may be file transfer only, messages only, "static" meaning that no one can post or upload, or RPG, and NET, (see chapter 18).

P Password. If you select a password for you subboard, a user must supply it each time he wishes to enter. System operators will have the password displayed to them when they enter the subboard.

E Entry access. The list of access groups which may enter the subboard.

W Write access. The list of access groups which may Upload or Post on the subboard.

Y Youngest age in years of a user to be able to enter this subboard.

O Oldest age in years of a user to be able to enter this subboard.

I Inactive days. This determines the number of days that a post may go un-responded to, or a file may go un-downloaded before it is automatically deleted by auto-maintenance. Files that have been "protected" are excluded (see the Y command in the last section).

C Closed. You may temporarily close the subboard for maintenance operations. Note that system operators and suboperators are always allowed entry.

V Verification. If you select that you wish new uploads to require validation first before other users may use them, you will need to use the V maintenance command to validate new files. Users will not be given credit for files unless they are validated. A user privilege exists which overrides this for his uploads.

DE Storage status. Using this "storage status" system of the subboard, the subboard operator is able to control exactly how many disk blocks his subboard will occupy. Disk space here is measured in "lines" (a "line" here is not necessarily analogous to a line in the editor--it may consist of 1 80 column line, 2 40 column lines, or even 40 2 character lines.).

For each subboard, a MAXLINES setting specifies how many lines maximum a subboard may contain (each 100 lines in MAXLINES is approximately equal to 33 disk blocks). A second measure, LINES USED, tells you how many lines have actually contained text at some point. LINES USED is never more than MAXLINES. LINES USED does not decrease. LINES USED may actually be a misnomer, because USED lines are not necessarily IN USE at all times--some may currently be

DELETED (no longer part of a message) lines. This brings us to a third storage status measure, DELETE LINES, which tells you how many lines out of the LINES USED are not currently occupied by valid subboard message text. DELETED LINES, therefore, will never exceed LINES USED. DELETED LINES are now available for new text posts or responses. When a message is deleted, the number of lines that it occupied is added to DELETED LINES. When a message is added to a subboard, it must be placed contiguously (all together, not part here, part there) in the relative file. Because messages are generally deleted in an order differing from that which they were written in, DELETED LINES may be found in several different places throughout the file, in varying lengths. (if two adjoining messages are deleted from the message base, their lengths are summed as one larger DELETED LINES location). The file measure LARGEST AVAILABLE is simply the largest patch of DELETED LINES among all DELETED LINES. This is important to know since only contiguous deleted space is any use, because a message may only be placed contiguously.

Now, in determining the maximum of editor lines that should be made available to a user writing a message, we have two limiting factors--the number of "unused lines" (that is, MAXLINES - LINES USED) and the LARGEST AVAILABLE patch of DELETED LINES. If either is greater than 100, 100 will be the limit for the editor. If neither is greater than 6, the user will not be able to write his message, given the error "not enough disk space." If everything else is still in check, the greater of the two will be used.

To add to the number of maxlines, hit Y at the "change maxlines?" prompt.

R Reorganize text. This command will attempt to rewrite the entire subboard relative file, moving all DELETED LINES patches contiguously to the end of the file, so that they may all be used together for new messages. Reorganizing text may take some time! Once finished, you may have to reset maxlines from the storage status option.

Z Write or edit the subboard's "entry" file. Entry files are displayed to users as they enter the subboard. The exception is that the user has selected "expert" help level, in which case entry files will be replaced with simply the name of the subboard or subdirectory. The B command from the prompt will always display the entry file, however.

13.6 THE DIRECT DISK EXCHANGE MODE

C-Net provides a way for you to operate a subboard which requires no special "adopting" of files in order for them to

be used. If you run this subboard on a floppy disk you are able to directly swap disks in and out while users are on-line, and possibly "trade" with them in this way.

The disadvantage of this type of subboard is the fact that it doesn't track the uploader's name with the file (although it still will enter into the logs), or provide some secondary information (long descriptions, number of times downloaded, last download, etc.) C-Net is also unable to use it as a verification subboard, or kill the files during automaintenance. However, the following command variations are made while in a direct mode subboard:

S Scan items will actually read the titles from the disk, and also display filenotes, is available.
* Select will prompt for a file pattern, and prompt for files to select directly from the disk directory.

In addition, such commands as Download and Kill will prompt for a filename to act upon.

14.0 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). Outside of the editor system, this key may not be used. Within the editor 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 and misused. These commands can be placed anywhere in the 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 indicating 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 l green N lt blue  O grey 3
```

On the 128, 8 is dark purple, and K is dark 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 spaces, 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

#Rn reverse video control. 1=RVS on, 0=RVS off. Note that a carriage return also cancels RVS mode.

#Sn 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 #T23# 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$ (subboard number for entry files and number of caller 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)
j The user's password
k Current access group name

#Wn Used to wait a number of seconds.

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#T1Y##E1#X1
#L1
I am glad that you can make it #V2.
How many people are you bringing? #I1
Do you own your own car? #I1
#L0
Ok, Thanks again, #V2, a SysOp will be contacting
you at #V4...
```

15.0 THE EDITOR SYSTEM

C-Net's text editor is 100% machine language for fast, powerful text entry and manipulation (file proto 7). A maximum number of lines is set for the editor by different sections of the program. For a new user's initial personal statement, up to 30 lines of text may be entered. For feedback, news files and entry files, 100 lines may be used. For the electronic mail and message subboards, the maximum number of lines is set according to the amount of free disk and file space.

When a user runs out of time while in the editor system, 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 system 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, hit backspace, or another period to put a period at the first column. For example, "." followed by ">" will allow a user to change the right hand margin for text manipulation and shaping functions.

15.1 SAVING/LOADING TEXT IN 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 on the system, is the same as aborting. .N may be used to start over. This will erase all text that was entered.

To read any C-Net compatible file into the editor, .G (Get) may be used. Follow the command with a filename. The default drive unit is 8. Follow the filename with a comma then an alternate unit specification if necessary. Similarly, .P is used to put the text from the editor into a sequential file. Alternate device specification may be used as with .G. Precede the filename with a plus sign (+) to append to an existing file. These functions are only accessible by system operators.

15.2 SEEING WHAT HAS BEEN ENTERED

.R is used to read the text. Read will print text as it will appear as a formatted message (see section 15.6). .L is used to list the text. List prints lines exactly as they were entered, except that it will print the line number before each line and a reverse video left arrow at the end if that line marks the end of a paragraph. .M is used exactly like

read, except text is put through C-Net's Message Command Interpreter (MCI) described in chapter 14. Not specifying a range for .R, .L, or .M will cause all of text to be displayed.

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. 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, press the period key at the first column to display ">>Exit" then press RETURN.

.K is used to replace lines. What is entered will replace the old lines. If no range is specified, .K will replace the last line of text. To abort a replace range, press the period key at the first column to display ">>Exit" then press RETURN.

.F is used to search for a string of characters within text, and .$ to search and then replace that string. The search and replace commands will not locate text that is broken from the end of one line to the beginning of the next.

.C is used to copy text. This command will copy the selected line range to the end of text, or to the insert point if insert mode is on.

15.4 INSERT MODE

.I followed by a line is used to insert text before a 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 displayed before the line number.

15.6 WORD WRAPAROUND/TEXT FORMATTING

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.

C-Net has been designed to automatically format text for the current user's column width, so as to avoid broken words at the end of lines, regardless of what column width it was written with. To effectively accomplish this, it is necessary that the editor system know where paragraph breaks are. Whenever the RETURN key is pressed in the editor, it is assumed that the user is at the end of a paragraph, and will always perform a carriage return during output. Conversely, all lines which required a word to be wrapped to the next line will be taken as paragraph body and will be printed as to fill the current reader's column width as far as possible. .T (toggle) may be used to place or remove paragraph markers from specific lines.

15.7 SHAPING THE TEXT

.B is used to place a border around the entire text. C-Net will first check to see that there are two free lines for the top and bottom border.

.J is used to justify text. There are five ways to justify text: left, right, center, expand, and pack. 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), C must be used to center justify text (move to the center of the screen), P must be hit to pack text (remove all extra spaces between words), or E must be hit to expand text (insert spaces between words to align text along both the left and right margins).

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
x;y,z	line x and line y to line z
w,x;y,z	lines w-x and lines y-z

15.9 VT-100 VISUAL EDITOR

A very powerful feature of the C-Net 128 is its VT-100 visual editor implementation. .V is used to enter the visual

editor. It may always be used in local mode, but may only be used on-line if the caller is using a DEC VT-100 compatible terminal emulator program. Such terminal emulators are available for most personal computers. Once in the visual editor, full cursor movement is possible throughout the document. There are several control code commands available in the visual editor. They are as follows:

Control X — Exit the visual editor mode and return to the standard line editor.

Control K — Kill the current line and pull all following text up one line.

Control L — Insert a blank line at the current cursor position moving all following text down one line.

Control I — Insert a single space at the current cursor position. (Shift INS/DEL from local mode)

Control D — Delete a character at the current cursor position. That is, pull text into the cursor. (Hex $FF DEL may be used from remote)

Control H — Backspace and pull text back one space, deleting the preceding character. (Most terminals have a BACKSPACE key or INS/DEL from local mode.)

Control R — Reprints the current line only to verify its contents or to mend damage caused by line noise.

Control S — Clear and re-print the entire screen from the beginning of the text buffer.

16.0 MAINTENANCE SYSTEM

Access to the maintenance system is controlled by a flag in the access group configuration. The maintenance system should be reserved for use by the system operators ("sysops") of the system only.

Access configuration here, and in the rest of the system must be entered using a comma/semicolon range scheme. For example:

```
0,15        all 15 access groups
1,10;15     groups 1 through ten, and 15
2,7;9,14    groups 2 through 7 and 9 through 14
4,9;10;15   groups 4, 9, 10, and 15 only
```

16.1 DOS CONTROL

@ Send a disk command. Commands to the disk drive or hard drive are communicated this way. If the command has spaces in it then you will need to add quote ("") marks to it to ensure that it is issued correctly.

$ Read disk directory. You can specify a pattern by adding * or ? to the command.

CD Change the current drive. (ie: cd 9,0) changes the default device 9, drive 0.

BF Blocks free. You can check the free blocks on all drives. C-Net usually checks all the drives for free space during log-off procedures, however, you may force an update at anytime by just adding the ! to the command (ie; BF!)

RF Read a file. You will be prompted for a filename or path to read. Adding +p will force the file read to read a PRG file or +b to force read the file as a BASIC file.

WF Write/edit a file. You will be prompted for a filename (or path) to edit. The file will be loaded into memory for editing. If you "abort" the file, you will have an opportunity to delete it altogether. This provides an easy way to edit menus and other text files on-line.

MF Move Files. Example (MF 9,0 sys.*) specifies that all files on the default drive with the sys. prefix be copied onto drive 9,0.

16.2 SYSTEM ACTIVITY GRAPH AND MONITOR

AG System activity graph. This feature monitors usage compared to non-usage of the system over the course of the day, broken into 72 20-minute periods. When displayed with percentage along the 'Y' access and the day along the 'X' access, one can easily determine the busiest and least-busy times for the system. Users may wish to use this information to attempt to avoid the busy signal. The graph is continually running, and should become smoother as more system time is logged.

The graph can be reset to all 0's by resetting the SAM period while waiting for a call. See chapter 3 for more detail on doing this.

AM The System Activity Monitor. This will display the screen of information that is normally displayed while the system is waiting for a call. SAM monitors many system activities, through several separate "time frames" of reference--last call, since setup, specific time period, total, and current.

16.3 EDITING ACCOUNTS AND GROUPS

EA n Edit a user's account (which account). This will allow you the ability to edit a user's access, password, calls today, total calls, minutes today, balance (cents), Game points, network credits, u/d counters, as well as his custom ratios and privilege flags (see EG for a complete list of these). The basic idea is that you can edit everything that the user can't edit himself. You are also able to Kill an account from here.

EG n Edit an access group (which group). This will allow you to change any of the default values for an access group, including the title of the group. You will be able to edit the following ratios and limits:

Calls per day	:	0 = infinite
Minutes per call	:	999 = infinite
Minutes per day	:	0 = infinite
Downloads/call	:	0 = infinite
Uploads/call	:	0 = infinite
U/D File ratio	:	0 = infinite. The number of files that one is able to download for every file that is uploaded. Note that if this value is NON-ZERO, a user MUST upload at least ONE file before downloading at all!
UD/ Byte ratio	:	0 = infinite. The number of bytes that one is able to download for every byte that is uploaded.
Free Bytes	:	The number of bytes one may download before the u/d byte ratio comes into effect.
Messages/call	:	The number of posts, responses and e-mail one may leave per call. 0 = infinite.
Feedbacks/call	:	The number of feedbacks one may leave per call. No infinite value possible.
Editor Lines	:	A value between 7 and 250, for the maximum number of lines a user may use in the editor.

And the following privilege flags:

Use of the e-mail system.
Use of the pfiles (on-line games) system.
Use of the gfiles (on-line text files) system.
User list command
MCI level 1 (most commands)
MCI level 2 (sysop or privileged access commands)
Ability to relogon to the system
Ability to edit personal data (the Z command)
System maintenance (sysop)
Bypass of U/D ratios
Bypass of calls per day
Bypass of minutes per call
Bypass fo all time restrictions
Ability to send Urgent mail
Ability to Alias when writing messages (use someone else's name as the author)
Ability to "adopt orphins"--that is, allow files to be added from the disk into the list of items for an area.
Read private messages, if private messages are allowed in your message base.
Delete any U/D file
Delete you own U/D files
No inactive purge (won't be autodeleted by automaintenance)
Autovalidate files--user's files are instantly validated even in areas requiring validation.
Write anonymous messages, and then, only if anonymous messages are allowed in a particular message area.
Trace anonymous--ability to see the author of anonymous messages. Anonymous messages are marked with "*" beside the author's name.
Ability to leave private messages in the public message areas. This includes private uploads.
Forward your mail to their accounts.
Ability to write to the wall.
Ability to restart the wall.

16.4 EDITING SAM AND TIME RESTRICTIONS

ES n Edit a SAM variable (which variable). If you notice that any one of your SAM "current" values has become inaccurate, you can manually adjust it by using this command. Use n=0 for feedbacks, n=1 for mail sent, etc.

ER The ER command has the ability to restrict by particular access groups or restrict access to the UD area by particular access groups during certain hours of the day. Also, 300 baud may be excluded from either at any hour. To edit the current time restrictions, use the . command. Once the screen has been displayed, enter the hour number for AM or hour number followed by a letter P for PM hours. Then, enter strings of 15 0's and 1's -- moving from group 0 to 14, putting a 0 to deny access, or a 1 to allow access. Simply press Y to

allow 300 baud callers, if desired, when prompted. For example, a value of 111111111111111 denotes all 15 access groups have access, while 000001111111111 denotes that only groups 5 and higher have access, etc.

16.5 FORCED MAIL OPTIONS

Mc Forced mail creation. A forced mail file is a file that is read to a user as soon as he signs on to the system. Forced mail may not be aborted. To create a forced mail file for a user, use the MC command. To remove a forced mail file use the MR command.

There are four meta-commands that maybe used in a forced mail file. Each command used must be placed on a line by itself.

%e Will erase the file after the user has read it.
%o Will disconnect after the user has read the file.
%s Will suspend a user after he has read the file until a specific date. The date should be laced immediately following the %s command YYMMDD format, such as 920101 for January 1st, 1992.
%f Will give the user option of leaving feedback before continuing with the rest of the file.

16.6 ACTIVITY LOGS

LA Read/reset log of auto-maintenance. This file contains information detailing the works of the auto-maintenance function. If files are deleted, or users purged, a note of it will be made in this file.

LC Read/reset log of callers. For every logon or logoff to the system, a note is made into this file. At the beginning of the line is the serial caller number, noting the total number of calls to your system. Because local calls do not count towards this total, a -1 will be displayed for local call. Several various signon and signoff methods are also noted in the log. Here's a key:

SON	Normal signon
REL	Relogon command used
NEW	New user
ACB	Auto-called back
TIM	Ran out of time
CAR	Carrier was dropped
ACB	Auto-call back failed to make connection
IDL	Idle timer ran out
INS	Used instant logoff (O!)
REL	Relogged onto the system
SOF	Normal sign-off
INF	Informational entry to the log

LG Read/reset log of G-File and P-File activity. Each time a user accesses a G-File or P-File it is noted in this log.

LU Read/reset logs of uploads and downloads. Notes will be made to this file detailing the who, what, and where of a file transfer.

LE Read/reset the log of system errors. Two types of errors are placed in this file; DISK errors, and PROGRAM errors.

LN Read the master log of new user applications. This file comes in handy when a user goes and changes all of his account information to invalid information and then precedes to cause problems to the users and the board itself. You can go back and use the file as a reference to the persons' real name, and phone number.

16.7 CREATING NEW ACCOUNTS/RESERVATIONS

NA Create New Account. This lets the operator create a new account without the hassle of going through the new user logon.

RE 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 you Handle or Login ID" prompt after which he will be asked to enter his invitation number. If this is a valid reservation number, he will then be asked to enter his temporary re-assigned password (which should usually be his name). If the password is valid, he will then be taken through the normal new user applications, and then be given instant access to the system. The RES system is even available when the Private System option is active.

16.8 TIME CORRECTIONS

SE Time correction. This will let the operator correct the time and date.

16.9 REMOTE PASSWORD CHANGE

SP Set the REMOTE password. This password must be entered if you are calling from a remote system and have system operator access. You cannot access the SM or any DOS command until you have entered the SP command from the main. REMEMBER this does not apply if you are calling from the local mode.

16.10 CURRENT VERSION/HELP

VE Version. This yields the current version of C-Net that you are operating.

16.11 READING FEEDBACK/NEW USER INFORMATION

VF View feedback. This will let you read the feedback that users left using the F command.

VN View New User applications. This will read new user applications.

Each message is displayed beginning with a header, containing the user's name, ID number, real name, phone number & birthdate, and date the message was sent. At the end of each message, there are several one key options available:

- A Again. Re-read the message.
- R Reply. To write a message to the user in e-mail
- S Send. to send the message to any user's e-mail account (your own account included)
- E Edit. to edit the user's entire account (to delete it, change his handle, etc.)
- K Keep. to save that message and go on to the next one
- N Next. just to go on to the next message (the message will be deleted if the Q command is never used).
- Q Quit. abort and return to the system maintenance command prompt -- no messages will be deleted

16.12 EDITING THE FUNCTION KEY MACROS

Using your text editor, you can edit the file "sys.fkeys" to change the function key macros. Each line of this file represents a function key, numbered from 1 to 8. For example, create a logon macro for yourself (your ID number). You may define the eight function keys at the top right corner of the keyboard to print any text you desire. This file must contain no more than eight lines, one line for each function key. You may use the arrow key at the top left corner of the keyboard to represent a carriage return. The length of all function keys combined must not exceed 254 characters. You are not required to define all eight of the function keys.

17.0 CONFIGURATION OF AUTOMAINTENANCE

Automaintenance is a very powerful C-Net feature which allows your system to perform several maintenance functions at a specified time during the day. Set this time from the general parameters screen of system configuration (see section 3.3). C-Net will limit callers before this hour to insure that automaintenance occurs at the proper time. Automaintenance must occur each day--so the file prg.amaint must be placed on your p-files disk or into your RAM expander at all times. The functions that automaintenance performs include:

(1) News file weed. If you selected for news files to be deleted after a specified number of days when you added them, it is automaintenance which checks the news directory and removes old files.
(2) Message base subboard weeds. If any of your subboards have "inactivity day" settings, automaintenance will search for and remove old posts and old responses to posts from those subboards.
(3) File transfer subboard weeds. If any of your UD subboards have "delete days" settings, automaintenance will search for and remove old files from those subboards.

Additional automaintenance features that may be enabled by using the "prg.utilities" menu option to do so include:

(1) User weed. Automaintenance is able to perform check for users who haven't called for a specified number of days or more, and delete them. A starting account number and an access coding (weed only certain groups) many also be specified.
(2) Display SAM table, with the option to reset the period column on a specific day of the week, or every day.
(3) Display the System Activity Graph, with the option to reset the graph to all zeros on a specific day of week, or on every day.
(4) Display and delete the call log.
(5) Display and delete the error log.
(6) Display and delete the feedback.
(7) Display and delete the new user information.
(8) Display and delete the main file transfer log.
(9) Validate (COLLECT) a series of disk drives.

If your printer is connected (and powered on), C-Net will print everything that has been chosen to be "displayed." In this manner, you may have your call log printed and restarted, automatically, each day.

C-Net will keep a log of everything that occurred during the last automaintenance occurrence in the file "sys.am log."

Everything that is "displayed" will NOT be written to this log. Its purpose is mainly to inform you of deletions (user weeds, message and file weeds) if they are not logged to printer.

18.0 NETWORKING

Welcome to the world of networking! Multi-Net is an extremely powerful, and economical networking package designed with you, the SysOp, in mind. It has many features that make it very simple to operate, as much of the hard work is built-in to the package. First, an introduction to the software, what it can do, and then we will describe what you can do.

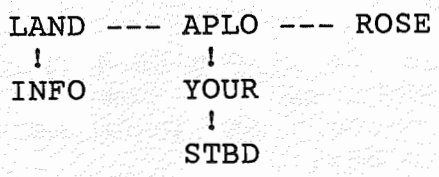
18.1 WHAT IS A NETWORK?

Simply put, a network is a means by which two computers can automatically pass information. It is automated to the point that there need not be a human sitting at either computer, the computer has the ability to 'think' for itself, and based on a variety of possibilities, can come to the desired conclusion.

Multi-Net can do all of that, with both public and private messages. It is fully automated in that it is nearly totally transparent to the user. In fact, your users only need to learn one more C-Net command, and they have mastered Multi-Net. The new command is NS (for Net-mail Send), to send a private (E-mail) message to another user on another system. Public messages are posted and responded to in the usual way with C-Net, without the user having to know what system to send it to, or execute a separate p-file, or any other difficult (or awkward) commands.

18.2 NETWORK MAPPING

Using a mapping routine similar to several IBM-style network systems, Multi-Net uses a multiple-branching system of mapping messages throughout its network. Below is a sample of what a typical map might look like. In this map, keep in mind that the system titled YOUR can be your BBS system.



Now, it might seem that it would be impossible to get a message quickly from the system labeled INFO to the one labeled STBD. In fact, it is very simple for Multi-Net to do this, and takes no more time for it to figure out how to get it to there, as it does to get from INFO to LAND. This brief example is merely a reference to show you what a map MIGHT look like if you were to draw one out. It can be as complicated or as simple as you would like it to be.

It is also economical to use, as messages only go to those systems who either the message is intended, or is in the routing of each message. Take again the example of INFO to STBD. The message would never be sent to ROSE, as it is not in the shortest path to STBD, yet, if it were to go from INFO to LAND, it would go no farther than those two systems. In this way, Multi-Net is able to keep the cost of sending messages to a minimum.

18.3 NETWORK SECURITY

Great care has been taken to discourage a hacker from breaking into your computer through the network. Using special characters to indicate a Multi-Net call, passwords, and close-tolerant timing, it is difficult to say the least to 'hack' your way into the Multi-Net network.

18.4 COMMON QUESTIONS ASKED

Are there any complicated steps to using Multi-Net?
No, as we mentioned, almost all the guesswork has been taken care of in the network. In this way, you (the SysOp) can enjoy the network as much as your users can by spending more time in your message bases, rather than wondering what went wrong.

Is it possible for the network to 'hang' when calling?
We have taken as many precautions as possible to prevent this from happening, however, it would be impractical (and nearly impossible) to prevent it from EVER happening. It is unlikely that the network would, under most conditions, 'hang' with the modem connected. The receiver would eventually 'time-out' and would break the connection should the sending system hang. In the event that the receiver be the one to 'crash', the sender would run out of time waiting for the receiver to figure out it was being called.

18.5 MULTI-NET SUPPORT

The Service Station BBS (405)/670-5664 (Formerly known as The InfoMaineIac! BBS) is the home of Multi-Net, and support can be found there. Any problems that might occur can be resolved on this BBS.

18.6 SETTING UP MULTI-NET

Of the files you downloaded or received on your disk, please note the following filenames, and where they should go:

sys.menu 4.....Your System Drive
All files beginning with prg.<filename>...Your P-files Drive

It is important to note that some of your prg.files will be

replaced to incorporate the network. We felt that some of the changes to be made were simply too big to be done as mod.files, so we elected to just replace the entire file. There is NO additional mods, or colors added to the new files, and you are free to put those mods and colors back in. Keep in mind the length of the files are little longer, and you'll have less room to work.

That is originally all you need to do to set Multi-Net up. Next, Call the Service Station, and leave the Sysop this information either in feedback, or in your new user comment area:

Handle you use on YOUR BBS
Your BBS Name
Your BBS Number
Where you are geographically located
A four-letter ID that you would like to have your system known as (for example, the Service Station is known as 'SERV')
Your Maximum Baud Rate
And optionally:
Your voice telephone number (used if we need to contact you).

Within a few days, after you advise the Node Administrator that you have the software, and have it installed on your system, you will receive a call from who your 'previous connection' will be (covered later on in this manual). Once your system is 'activated', you'll be able to set up the remainder of your network node.

It would be foolish to think that every one can have the network and not have a long distance connection. There simply aren't enough C-Net BBS systems in America to support that idea. When you consider having the network on your system, it would be prudent for you to consider the probability of your having a long distance connection. If there are several C-Net 128 Systems in your local calling area, it is possible that one could carry the majority of the message traffic, and the remainder of the Systems would simply be run off that one connection. Please refer to the end of the network documentation for other suggestions in this area of networking.

18.7 NETWORK MAINTENANCE

Almost all Net-Work Maintenance commands are located within your System Maintenance Area, and below are brief descriptions of each:

Now that we are activated we can edit our portion of the network. It would be best to start by editing our own system. To do so, enter the command NP at the System

Maintenance prompt. Below is a list of the possible commands and a brief explanation of each:

A Is your System Identifier for the network (not to be confused with the two-letter identifier you created in the setup utility). It tells other systems where the messages are coming from, and also contains your place in the network. This is shown for your info only, and cannot be changed.

B System Name: The name of your BBS. This you may change, should you ever change the name of your BBS.

C System Location: Where your System is located, in reference to a town or city. This you may change in the event you move.

D Compile Time: This is the minute after the hour that you wish for Multi-Net to take the BBS down to compile messages. It is not necessary to change this, but, is allowed if you feel the need to. It defaults to 30 minutes past the hour for every hour you wish for Multi-Net to compile messages.

E System Password: This command is to allow you to enter a password that your connections will need to connect and transfer messages to you and beyond (if any systems are 'after' yours). It is suggested that you use a password not related to your system (or any of your connections), and that you spell it out to each of your connections when it is given to them.

F Net-Access: What access groups you wish to have access to the functions of the network. This requires a bit of explaining. Lets assume you don't want access groups 0 or 1 to have access to the network. This means you do not want either of these access groups to have access to INITIATE sending a private or public message through the network. It does NOT mean that Multi-Net will discard any message that is sent to them on your system, but, Multi-Net WILL allow them to respond to a private message that is sent to them. Their access to the functions of the network is limited to only responding to messages left to them (with the exception of the public message bases, as you are able to limit their access there through editing each subboard detail.

G Net-News Parameters: Occasionally, the Node Administrator will send down a news file, of varying subjects, and this is where you will be allowed to set up what access groups will have access to reading it, and whether or not it is recurring, etc, as in the 'normal' news routines.

H System Tagline: This option is presently not used by this version of Multi-Net. It is there for future expansion. For more information on taglines, please refer to the section dealing with setting up your networked message bases.

1-24 The numbers side of the screen is for setting up what hours you wish to have Multi-Net take the BBS down to compile messages. If you do NOT wish for Multi-Net to compile during a certain hour, type that number to toggle it off. For example, you may not wish to have the network do anything but save messages to its temporary files during prime time hours, and compile the messages going out after midnight. Multi-Net is 'smart' enough to do that, if you wish.

18.8 GENERAL NETWORK COMMANDS IN SYSTEM MAINTENANCE

NL Will display a concise report on the activities of the Network, specifically, its calling out and receiving activity. The number of posts/responses, and number of Private message traffic, map updates, connect and disconnect times for each system, will also be displayed from this command.

NC Edit your net-connections. This command is rather long, and you may wish to follow along with your system running to follow along as each option is explained: The most important thing to remember about your net-connections is that your previous connection MUST be the first connection you have listed in the NC command. The first thing to do is decide which of your connections you want to edit. Each one is edited the same way, so just which one to edit is not important. Simply select one from the list by number, and in a moment, it will be displayed for you. Each parameter on the edit connection screen is edited by number, with the exception of the right side of the screen (covered momentarily). If you wish to have another connection there, select option one, and when prompted for a new System ID, enter the 4 letter ID of the new system (or, to kill this connection, enter KILL) ask if you would like to load new parameters for that node. Each of the commands that follow it (numerically) are self-explanatory, and need no real explanation other than the following:

Password: This is the password that you will need to get from the other connections you have, so that they will be able to pass messages onto your system. At the same time they give you their password, you will need to give them one as well.

Flags: At the present, only two of the twelve flags are used for Multi-Net. The remaining are in-place for future expansion. The first flag is for Sendback-Files, or a two way transfer on the same call. This system is designed to help cut costs for all users, and is recommended to be used by all network nodes.

(Suggestion: Have all your connections use the send-back files option, and each system can call every other night, thereby keeping each system liable for half of the cost of running the network.)

The other flag is to simply turn off that particular node without having to re-accomplish this next part of editing the node:

A-G Each of the letter commands are to control WHEN Multi-Net will call that particular node. The letter is equal to the day of the week that you are editing (A=Sunday, G= Saturday), and the following covers each of the other headings:

CD: Calls per Day. How many times should Multi-Net be allowed to call this system on this day (each day is adjustable)? for a local system, it might be beneficial to have it call whenever there are new messages to go out to it, and on the weekends, it might be beneficial to pass more messages more often to any long distance connections you might have. Multi-Net will not call more times per day than it is allowed to. If the Calls per day are set to zero (0), it will NOT call that system, and conversely, if it is set to 9, it will call everytime it compiles and has something to send

FH: First Calling Hour Allowed: When Multi-Net begins to pack up messages to go out, it will first distribute all messages to go out to where, and then look at each connection to see if it is allowed to call any of them. Each connection that you might have may or may not be active, at that hour, however, to make the network as fast as possible, we still keep packing the messages whenever Multi-Net is allowed to compile them. If, when it completes

compiling messages, it finds that is allowed to call, it will make three attempts to connect to that system. The FC column holds that hour of the day that will allow Multi-Net to call out. There is a catch to this and the last hour. The hour is during that day ONLY, meaning if you want it to call from 11:00 PM until 6 AM the next morning, you will have to use 11 PM on the first day, and as the last hour (LH) you need to use 2400 (or midnight), OTHERWISE, Multi-Net will attempt to call from 6 AM until 11PM (exactly the opposite). The window you define for each System will need to fit into each day. (Recommendation: Use 1AM to 6AM for your long distance Connection windows. It will attempt to call (if there is anything for it, and it still has another call allowed) every hour from 1 AM until 6:59 AM.

LH: Last Calling hour: This is the last hour of the day that Multi-Net will attempt to call that particular connection. It is important to remember that it will try to call to the 59th minute of that hour, so, if you don't want it to call starting at 7 AM (for example), remember to set the Last Hour at 6 AM. When you are finished editing that connection, entering RETURN at the 'Item to Change' prompt will cause the network to ask if you would like to save any changes you might have made, and upon your answer, save (if told to), and return to the list of your connections.

18.9 EDITING YOUR PARAMETERS

NB This command will allow you to 'manually' initiate breaking down a waiting E-Mail file destined for your BBS. This command is normally done automatically if Multi-Net finds the file after a network call from another system. Configuring the Message Bases for Multi-Net Once you have been 'activated' into the network, and have all your connections configured, have yourself configured as you desire, it is time to install the message bases into the network. It is important to remember that for the most part, once a message base is configured for the network, it SHOULDN'T need to be configured again, unless you need to change something (a node drops out of the network, etc). To edit a

Network message base, you must first tell it that it is one, as message base editing is done through the EL (subboard #) command. At first, it will look like any other message base, but, by changing the Type of board to a network message base (4), you will have more editing commands available to you underneath the 'normal' editing parameters.

The first one you'll want to change is the 'COMPLIMENT' of the message base. This is what Multi-Net looks at when it is deciding what message base to put the messages in. To the network, there are two (2) names to every networked message base, that which you want your users to see it as, and what the network will see it as. This was done so that there would be no need to have all the systems in the network to have to carry the identical message base names. Your general message area can be called whatever you would like to call it, but, as far as the network is concerned, it is known as 'GENERAL'.

To change the 'Compliment' of the message base, first type 'C'. It will ask you for the compliment (network name) for that message base. BE CAREFUL to enter the name properly, otherwise, no messages will be installed, and no messages sent out from your system will be installed on other systems.

The next part below the Compliment is who else in the network you wish to send the messages. To change it, you must enter 'X' and then the number next to the X that you wish to edit. It is NOT necessary that you fill this in the order shown, it will pass messages to all the nodes that you specify (with a few exceptions to this rule). If every one of your Direct Connections is going to carry every message base that you wish to run on your system, then you must put all of your direct connections in all the message bases. Lets draw a short example, and then we will show you what happens under several circumstances:

Let us suppose you have two message bases that you wish to be in the network, GENERAL, and FOR SALE. Now, let us also assume you have two connections (please refer to the map example at the beginning of the manual for Multi-Net), APLO and STBD. Lets further assume that BOTH APLO and STBD want to carry the GENERAL message base, but, only STBD wants to carry the FOR SALE base. However, ROSE wants to network the FORSALE base with you. The solution is as follows: First, since BOTH your direct connections want to carry the GENERAL message base, you would want to put them both in the configuration screen for that message base. BUT, since APLO doesn't want the FOR SALE base, and ROSE does, you would put STBD and ROSE in the FOR SALE base, because the map knows that in order

to get messages from your system to ROSE, it HAS to pass them through APLO. Sounds difficult, but if your lost, don't worry about it, the network knows exactly how to do it.

System Tag Line:

The System Tag Line is a line of text that you may edit for each subboard, and will be appended to each message that goes out from your system to all the other systems in the network. If you do not wish to have a tag line, it is not required. A typical tag line is either a humorous saying or it could be an advertisement for your system. What you put there is entirely up to you, but remember that you are limited to 74 characters (MCI is allowed on the tag line).

18.10 SAVING YOUR NETWORK MESSAGE BASE

Just like you would save a non-networked message base, simply hit RETURN at the change prompt, and all changes to the normal and network parameters of that sub will be resaved.

18.11 CHANGING A NETWORKED SUB INTO A "NORMAL" SUB

Just like you changed a normal sub to a network sub, so would you change a networked sub into a normal one. Simply change the type of subboard to other than a network sub, and it will be removed from the network.

18.12 MULTI-NET AND THE E-MAIL SYSTEM

Multi-Net is capable of private E-Mail between two or more systems, and is activated by the ONLY new command that Multi-Net incorporates into C-Net, the command 'NS'. To send email to another system, the user must enter this command, and C-Net will prompt the user for the handle of whom the intended receiver is, and what system he is trying to send it to. To get the message to that user without any sysop intervention, he must have these parameters correct, else the message will be put into a 'deadmail' file. This will be handled in a future version of Multi-Net.

If a user would like to send a message to the SysOp of another BBS, he may address the message to 'SYSOP' and it will AUTOMATICALLY go to the sysop of the destination system. It is NOT possible to send mail to ALL sysops on ALL systems within the network at once.

18.13 THE FUTURE OF MULTI-NET

Multi-Net is a full-fledged network package for C-Net, yet,

it is not limited to its present form. There are a multitude of changes that could be made to make it faster, even more reliable, and a more envious package for other BBS Systems. Below are a few guidelines for modifying Multi-Net:

It is NOT RECOMMENDED that the original files for Multi-Net be altered in any way. The files as they stand work very well, both together and alone. If you wish to modify Multi-Net, it is recommended that you to contact the authors and run the idea by them. They would know almost immediately if the idea would conflict with the rest of the network, and could offer suggestions to get around any possible shortfalls they might think of.

If, after talking with one of the authors of Multi-Net, you feel that you could enhance the system, there are a few variables that you may NOT alter (due to their being integral to the network), as follows:

nw$ (this variable is DIMensioned out to 40, yet, the first 8 or 10 are NOT to be played with at all!) You might corrupt the ENTIRE network by altering any of these! You may use nw$(11) and on as you see fit, but, PLEASE don't alter the first 10!

There are NO Special ml routines within Multi-Net, it uses any routines that C-Net is generally capable of in itself. No special protocols are used, and the entire system is based on a 'multiple wagon-wheel' approach to mapping its messages out. The only 'special' routine developed was the routine that the network uses to map its messages out, and it is buried in one of the files that it uses when compiling messages.

Our vision of Multi-Net:

We envision several upgrades and enhancements to Multi-Net, such as 'Bridge Connections', or the ability to directly connect to another system without using the map (good for a one time transfer of a large message package). We also foresee the ability to send program files through the network (good for sending out updated files from the authors without having to first send mail, asking you to call up and download them).

18.14 MULTI-NET QUESTIONS AND ANSWERS

Should you encounter difficulty with anything in this manual for Multi-Net, please call The Service Station BBS and leave feedback to Grease Monkey. Please include the nature of the problem, any particular circumstances leading up to the problem, and the line number that contains the error (if one exists). Most problems can be solved almost immediately, with little trouble on your

part. The important thing to remember is what we are asking for should you encounter trouble, if we have any questions, we will ask you about them. It is not necessary, however, if you include an evening number we might be able to contact you, that would be beneficial as well.

Most problems we have found stem from non-familiarity with the software. This is an extremely powerful system, with a bright future, and it can be complicated to those not familiar with a network system. We do know, however, that Mulit-Net DOES work, it has been running on at least 8 systems for 6 months without a major flaw. There were some minor flaws that needed immediate attention, but, nothing that was fatal to the network. Some of the most common problems we have found are:

I just got the software, and it doesn't compile:

Remember, you must be 'activated' by the system that is your previous connection. Until that time, Multi-Net will sit dormant on your system. It is very important that you do NOT install any part of the network on your system until the activation file is complete.

How does my previous connection know what password I will use before I'm activated?

In order for your previous connection to call you and activate your system, you will not need a password. The only file that will be sent initially is the activation file for your system. After your system configures itself, you'll want to call the other system and trade passwords.

18.15 WHAT HAPPENS WHEN THE NETWORK RUNS

The conditions under which the program net-assemble runs is varied and dependant on two conditions:

1. A Net-Call is made to your system.
2. Net-Assemble is allowed to run (its hourly check set up by you in System Maintenance).

For the purposes of this portion of the manual, we will assume that the network will find a file for every portion of the BBS that is supported by the network.

The very first thing it looks for on your system drive is a new file to update the map. If found, it will install it, and distribute it to all of your connections except the one it just came from. This ensures that any other files found are also distributed to those systems as well, such as a new node connected to your system.

The next part that it will look for is any mail that is addressed to your system, and send it to your users mailbox. If it cannot find the handle that the message is addressed to, it will write the message to a 'Dead Mail' file on your system drive.

Third, it looks for either of two files for the message bases, if either is found, it will run the appropriate file and either compile or break down the message bases, distributing it to any/all systems you have attached to that message base except the one it originated from.

Fourth, it will look for and map out files written to a file where the network writes what files need to go where. This is done just prior to running the calling out file specifically to help the network run and send messages as fast as possible.

The last file that the assembler will run is the calling out file (both conditions). It is done (again) to keep the message-waiting to a minimum. If allowed, it will send then receive any files that are ready for it on the receivers system. In order to keep from being stuck in a long loop, if any files are downloaded, they will not be broken down until the next time the network is allowed to assemble its files, or it receives a call from another system.

18.16 NETWORK GUIDELINES

As with many functions of the BBS, your personal tastes, and the respect for other systems, this chapter will help you in determining what should and should not 'go out through the network'. At the end of this chapter, are what you can expect to have happen should any of these guidelines be disrupted.

First, lets go over some of the do's and don'ts:

In any other than an adult message base, there will be no profanity. There may well be an occasional 'damn' or two, those can be tolerated to a degree, however, there will be NO hard-core profanity at any time in a public message base that the majority of your users will see.

Messages should not contain inflammatory remarks regarding sex, color, race, religious beliefs, national origin, etc. You just never know who is going to be on your BBS as far as a user goes.

'Graphic Handles' should be kept to an absolute minimum. Some users have long and lengthy handles, and while they look nice, they just tend to get expensive to send out from

system to system. Remember, one of Multi-Net's features is its cost-saving ability.

Absolutely NO copywrited software will be transferred through the network. This is a violation of Federal Law, and is not THAT difficult to determine where the file originated from. C-Net mods, games, etc aren't a problem as long as it doesn't get out of hand. The ability to send program files has been added to send out updates without the need for everyone to call out and get it.

One of the Message Bases available for ALL Network SysOps is net-titled 'PEARAKO'. This sub is primarily for BOTH Sysops *AND* Co-SysOps. The reason this sub was originally created was to have a forum to discuss problems and offer suggestions to improve the network (either technical or user related). If your Co-SysOp has access to this sub, he or she may post and respond as they see fit.

And under the 'Do' heading:

Encourage your users to participate in the network. There will be LOTS of messages floating around the network (most of the systems we have had in the network tend to produce upwards of 60 messages per week. 60 * 10 systems is a lot of messages).

Promote the network to other C-Net Sysops. Be honest with them, telling them what you like about Multi-Net, and if there is something you don't like, tell them that, too (and tell us, too!)

Try to resolve a problem with another BBS between yourselves first, if you don't get the desired results, then bring it to the attention of the System Administrator.

Finally, the 'Punishment list':

Most punishments will take the form of the following steps:

First offense: A letter of reprisal will find its way to your E-Mail Box telling you what is originating from your system isn't tolerated, and an urging to cease. If it is an abusive user, you will be advised to send that user mail to cease. If that user in your opinion is abusing the network, you should remove the network from that user before it gets to this point.

Second offense: Your node in the network will be closed for a week or two, depending on the severity of the abuse.

Third offense: Your permanent removal from the network.

Any and all questions may be directed to the System Administrator.

19.0 C-TERMINAL

For added convenience, the C-Net BBS is equipped with a built-in terminal program. To activate the terminal, you must be at the waiting for a call screen and press the left arrow key, which is located in 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.

20.0 TECHNICAL INFORMATION

The information in this section is provided for any user interested in making modifications to the C-Net program, or just to better understand how it all operates.

20.1 PROGRAMMING TIPS

Here are some tips for "safe" C-Net modification and application programming:

1) Before you begin, define your variables on paper, their purpose, and check with the BASIC Variables chapter to insure the safety of their use.
2) Memory is not an infinite resource, especially on the 128. As a general rule, the size (in blocks) of the CN file added to the size of your largest PFile, pluse 84 should not exceed 245. Unexplained "hangs" will occur if this rule is not adhered to!
3) Attempt to avoid infinite loops. Specifically, this means you should somehow account for the chance that the user will simply "hang up" during a GOSUB2100 (input) or GOSUB2200 (get one character), C-Net immediately returns control to BASIC, with an effective input of null (" "), or chr$ (1 (RETURN)) for GOSUB2200. If your routine loops around waiting for the user to enter either Y or N, for example, the program will loop without escape. If you must have an input (RETURN isn't enough) for a default of something, giving AUTOMATIC fall-through for user-hang-ups, you must then insert a check for a carrier. This is done as follows:

```
10 GOSUB2100: IF TR%=0 THEN 30
20 IF AN$ <> "Y" AND AN$ <> "N" THEN PRINT "TRY
AGAIN":GOTO 10
30 .......
```

Actually, if you FORGET this protection, C-Net will automatically break out of the infinite loop after seven iterations. This, however, results in a "can't continue" error to be logged by C-Net. The error line number will ALWAYS be 2102 or 2202. Therefore, from the log alone, it is not possible to determine exactly where the infinite loop occurs in the program.

20.2 MEMORY MAP

This is how memory is utilized in the Commodore 128 version of C-Net:

RAM BANK 0

$0000 - $03FF	C-128 usage
$0400 - $04EF	C-Net "m4.0" file

$04FO - $05E9	C-Net Editor Paragraph Markers
$05EA - $05EE	UNUSED?
$05EF - $06E9	C-Net Editor Direct-Color Entry Codes
$06EA - $06EE	UNUSED?
$06EF - $07FF	C-Net Usage
$08OO - 09FF	BASIC Usage
$0AOO - $0AFF	C-128 usage, however, in practice it has been observed that $0A60 - $0AFF may never be changed during normal C-Net operation. Free for modification use?
$0B00 - $0B3F	C-Net variables usage, maybe some free location scattered throughout here!
$0B40 - $0B9F	C-Net Editor temp string work area
$0BA0 - $0BFF	C-Net Editor current line color codes
$0C00 - $0DFF	C-128 RS-232 I/O Buffers
$0E00 - $0FFF	C-Net "m2" file
$1000 - $10FF	Function Key Information
$1100 - $12FF	Graphics/ Music Area. Since these features of the 128 are unused while running C-Net, it is possible to use this memory for your own purposes. With the exception possible of $1100-$1130, and $1200-$1221 which may also be used by DOS.
$1300 - $1BAF	C-Net "m3" and its future expansion
$1BB0 - $1BFF	C-Net Printer output buffer (80 bytes)
$1C00 - $37FF	C-Net "ml"
$3800 - $53FF	C-Net "proto" files
$5400 - $F4FF	C-Net "cn" file, and one "pfile"
$F500 - $FDDF	C-Net "uds.o" or "subs.o"
$FDE0 - $FFFF	C-128 Usage

RAM BANK 1

$0000 - $03FF	Always the same as Bank 0
$0400 - $0BF0	C-Net "sys.pointers" file
$0BF1 - $0FFF	C-Net relative file directories (del.email, and the first part of subboard header files...)
$1000 - $57FF	C-Net subboards and U/D header files
$5800 - $FEFF	Normal BASIC Variable Usage
$FF00 - $FFFF	C-128 Usage

20.3 PEEK AND POKES COMMANDS

Here's how some of that memory is used by C-Net, through BASIC by the use of PEEK and POKE commands. For example, POKE 231, 11%-1 will set the right border of the output window to the user's line length setting (less 1, because screen measurements include 0), and PEEK(7518) can be used to see whether the checkmark is set next to the on-line function "U/D" etc...

Memory Addr	Usage
47,8	Pointer, start of BASIC variable

51,2	Pointer, end of BASIC arrays +1
125,6	End of BASIC stack (reset during error trap)
135,7	# of bytes transferred upload/download, also used to count position in SEQ when reading it from RAMEX
138,42	Other protocol counters
141	Status word for Kernal I/O
174,5	Pointer; program end (of last load)
198,9	Bank # for load/save, and filename
208	Index to keyboard buffer queue
229	Upper boarder of window
231	Right border of window (user line length)
236	Current cursor position, column
254	Communication location for several ML routines
512	After upload/download, =1=aborted
991	Overflow marker of FAC1 (reset at error trap)
1036	Is status window on? 19=yes, >19=no.
1264	Editor's paragraph markers (250 bytes) 1=CR pressed
1280	Used by Punter during file transfer
1304	... This too, probably the "block length"
1309,10	... Punter stuff again
1775	Storage for 56577 location (to put modem on-line)
1776	Storage for LD$ (so ML can compare date) (11 bytes)
1787	Modem type (1=1650, 2=Hayes, etc.)
1788	Minutes on-line this call
1789	# of files in the RAM expander
1790	Connect baud rate, 3, 12, 24, 96=local mode
2584,5	RS-232 index to the start/end of the input buffer
2816	User's minute per call
2817	User's call per day
2818	User's allowed minutes at idle before logoff
2819	User's allowed number of files to download
2820	User's allowed number of files to upload
2821	User's upload/download ratio
2822	User's allowed public messages per call
2823	User's allowed minutes in the pfiles/day
2824	User's allowed feedbacks (by access group)
2825	User's allowed editor lines (by access group)
2826	Number of feedbacks user has left so far this call
2827	Number of minutes user has spent in pfiles this call
2828	Number of files uploaded this call
2829	Number of files downloaded this call
2832	Wait for call rate, 3, 12, 24
2833	Hour for amaint (military)
3598,9	Vars, last 51,52 values
7168	More? mode, 0=no
7169	Current # of lines printed since last More?

	or input
7170	Flag: N was pressed at the More? prompt
7261,2	Baud rate constant for ML, 7262=1=2400 baud
7263,4	Starting address for pfiles
7265,6	Starting address for proto file loads
7267	0 or 16, carrier detect "inverting" register
7268	Local Mode, 1=yes
7269	Color/graphics mode, 1=yes
7271	Chat "page" flag, 1=on
7273	Time still remaining on-line (same as tr%)
7276	For input, maximum # of characters to accept
7278	For input, return code, signal chat mode
7284	Length of the ML a$ in storage (7286)
7286	84 bytes storage for ML's copy of a$
7376	Length of ML an$ in storage
7377	84 bytes for ML an$ (used for inputs, etc.)
7462	User's number of screen rows
7465	Flag: file is being read from memory, not disk
7507	User's time zone. Signed, $ff=-1, etc.
7511	10 bytes flags for the "on-line functions menu"... 7511=Sysop is in, 7516=New Users Disabled, 7517=Print is on, 7518=UD disabled, 7519, 7520=U1 and U2
7523	DoMCI flag ... 0=PrintMCI, 1=InputMCI, 1 or the other!
7524	Cursorcolor ($1f selects flashing white), this register MAY no longer be used in 4.0 or 5.0!
7525	For MCI: printmode
7526	For MCI: cmpflag (=1 if last /t1 worked)
7527	For MCI: printer is on flag
7528	For MCI: last command
7529	For MCI: Last command's argument
7531	Internal flag, print TAB spaces
7533	Wordwrap flag, return immediately from line input?
7543	The current 6 digit date (in BCD), so 01 12 03 89 12 42 is Sun 3-Dec-1989, 12:42 a.m.
7555	Terminal buffer, flag =1=open
7558	Current date is 11 digit format
7596	Flag, user has sysop access (for the MCI Test during file reads...)
7604	Flag, linefeeds 1=yes
7608	Flag, ANSI mode, 1=yes
7612	Flag, file abortion has been disabled (using /a1)
7616	Default RGB coding fo the default color
7620	Default color (0 to 15)
7632	Password mask ($2e normally ".") ... here it is! Poke this with an ASCII character value to change the password mask character!!
7687	Scrtbl, 256 bytes for screen output translation

7943	Tratbl, 256 bytes for Commodore->ASCII translation
8199	Rectbl, 128 bytes for ASCII->Commodore translation
8410,1	Upload block counter (signed, $ff=-1), and flag for change, after you do "on-line credits changing"
14339	For editor, number of lines maximum
14340	For editor, number of lines maximum-1
14341	For editor, right column
14342	For editor, access flags (Sysop, MCI, etc.)
14343	For editor, device for reading sys.menu 3
14345,6	For editor, pointer to base of TT$(1) array
14347	For editor, number of lines coming out, going in
56328,31	System clock, may be read to figure time for downloads, etc.
56577	Data port (RS-232) for testing carrier, DTR hangups
56579	Data direction (RS-232), set which bits input/output
62720	Start location of the "subs.o" and "uds.o" files, used to see if one's already loaded.

20.4 BASIC SYS COMMANDS

This chapter details each of the BASIC SYS commands found throughout C-Net. For example, SYS4894 will cause the Chat Whistle to ring. headers are also provided to show the files in which the various routines are located. Where appropriate, the input and output of the routines area is also noted.

SYS #	DESCRIPTION	FUNCTION
0		The BASIC variable "o" should be permanently set at the value 7171, to output the contents of the variable a$ to the screen and modem (GOSUB40 also).
	NOTES: input±	lp=1 ... Carriage Return after Output
		mw=1 ... Allow abort anywhere in input
	output:	rc=1 ... SPACEBAR was pressed
		sh=47... / key was pressed
	-- m4.0 --	
1024	Savescreen	Go to 24 line screen
1027	Restorescreen	Go back to 19 line screen
1030	Savecursor	Save current cursor position. V 4.0 uses the BASIC cursor to draw everything, so must keep track of where it goes back

		after writing in the status window, etc.
1033	Restorecursor	Restore last saved cursor position.
	-- m2 --	
3584	Directory	Disk directory, after open 2,8,0,"$"
3590	Putvars	Marks which variables are currently in memory so that next Flush (4919) can wipe out any new ones
4864	Alphafind	Find the pointer position of a given ID within the sys.pointers input: p1%=id to location output: p2%=the pointer to match the ID
4867	Alphafind	Move the pointer file up one position to make room for a new pointer. Input: p2%=the pointer position
4870	Alphadelete	Remove the pointer at a given position, move others down to fill the gap. input: p2%=the pointer position
4873	Alpharead	Obtain the ID number associated with a pointer. input: p2%=pointer to lookup output: p2%=the counter number
4876	Alphaput	To place an ID number at a particular pointer location. input: p1%=the ID number output: p2%=the pointer at which to put it
4879	Getrecord	Read 23 bytes from file 2 into a$, regardless of the character codes, even CR (reads packed data in the user files).
4882	Copy	Used in the maintenance sections to copy from one file stream to another.
4891	Clearstack	Used during the error trap to remove GOSUBS and FOR/NEXTs from the BASIC stack.
4894	Ringsysop	The Chat Whistle!
4897	Directoryfile	Read the next file on the directory list. Used with selections of which files to copy/dload.
4903	300BAUD	Set baud rate 300

4906	1200BAUD	Set baud rate 1200
4912	2400BAUD	Set baud rate 2400
4916	Startup	Used to load "prg.ram" at program start.
4919	Flush	Remove all added variables since 3590
4922	L80	RAM Expander, load SEQ to bank 1
4925	L81	RAM Expander, reset this to bank 0
4928	Putc0	Move what's at c0 real memory to d0
4931	Putd0	Move what's at d0 real memory to c0
4936	Screenbeep	Flash the screen. Those of you who don't like this, maybe inserting an RTS ($60) at the appropriate place here will appease! (Then re-save the file)
	-- ml --	
7171	Output	Print a$ to screen.
7174	ResetMCI	Return all MCI things back to default (in most cases off).
7177	Put1	Output the single character ASCII found at location 254.
7183	Onechar	Wait for 1 character to be pressed, don't print anything to the screen, used with gosub2200
7186	Input	Wait for a line to be entered, used with line 2100 routine. inputs: at 7276, the # of chars to enter returns: Note that the "output" is placed on an internal "stack" and to retrieve it, INPUT#6, (ar) must be used ...
7189	Password	Wait for a password to be entered (mask the output to hide the password) ...
7195	Chatmode	Enter chat mode (line 7000).
7198	Cmpdates	Compare the LD$ ML variable to what's in a$, see line 10000.
7201	Diskina	Read a line from the open file #2, returns: stack variable
7204	Readfilec	Read the open file #5 from disk, or from RAMEX, clear screen first, see gosub15000.
7207	Readfile	Same as above, but don't clear screen.

7210	Getdate	Convert 11 digit date to verbose form input: an$=date like 18912030110 output: stack var like 3-Dic-1989 1:10a
7216	Fourty	Print enough spaces to align at the column 40 (for two column lists for 80 column users).
7219	Loadmod	Load a pfile (see gosub5500).
7222	Loadpro	Load a proto file (see gosub881).
7228	Setwindow	Set window borders and clear screen.
7231	Setdate	Set the date from the information entered in the C-Net boot program.
7240	Drawscreen0	Draw the system status window.
7243	Drawscreen1	Update the system status window as necessary at logoff.
7246	Dnpcheck	Check to see if a device is present. input: 7531=device# output: 144=system status word
7252	Pageon	Enable the flashing chat message on screen.
7255	Readnoabort	Read a disk file without aborting ability for new user file during new user logon.
7258	Readfile2	Read a disk file, but using file 2, not 5.
7540	Service	Update the menu and clock when we have the time (not in the interrupt like older 64 versions)!
7639	Movea	Moves a$ into the ML a$ storage location.
7642	Geta	Puts the ML a$ onto the "stack" for INPUT#6'ing.
7651	aout	Output the ML a$ directly without having to set a$ in BASIC (faster for scanning message titles, etc.)
8454	Tvarlc	Translate a$ into lower case/upper mix input: a$ from BASIC output: stack variable

-- protos --

14336	proto1:	XRecvFile	xmodem
14339	proto1:	XSendFile	xmodem
	proto9:	BasicShell	

```
          proto0:   PunterRecv      Punter
14342     proto9:   GetInfo         For BBS list, get a line
          proto0:   PunterSend      Punter
14345     proto9:   PutInfo         For BBS list, put a line
          proto0:   PunterInitRecv  Punter
14348     proto7:   ClearText       Editor
          proto9:   RunBASIC
          proto0:   PunterInitSend  Punter
11357     proto7:   LineEd          Enter the editor (see
                    gosub 11060).
          proto0:   PunterHandshake
14360     proto7:   L11085          Re-enter editor (see
                    gosub11085).
14363     proto7:   FindSpot        Relative files, (see
                    gosub8190).
14366     proto7:   DeleteSpot      Relative files, (see
                    gosub8200).
14369     proto7:   FindMax         Relative files, (see
                    gosub8350).
11372     proto7:   GetNums         Relative files, find
                    maxlines, lines used, etc.
14375     proto7:   PutNames        Relative files, put these
                    values.
14378     proto7:   PInit           Relative files, init
                    locations.

   -- uds.o, subs.o --
62722       Uds.o:    GetIt
62725       Uds.o:    PutIt
62726       Subs.o:   GetInfo
62728       Uds.o:    GetPDI
62729       Subs.o:   PutInfo
62731       Uds.o:    PutPDI
62732       Subs.o:   GetFlags
62734       Uds.o:    GetInfo
62735       Subs.o:   AddResponse
62737       Uds.o:    PutInfo
62738       Subs.o:   AddPost
62740       Uds.o:    SetDates
62741       Subs.o:   DeleteResp
62743       Uds.o:    DeleteFiles
62744       Subs.o:   DelPosts
62746       Uds.o:    Validate
62747       Subs.o:   SetDates
62749       Uds.o:    IncDLs (Increment a times dload counter)
62750       Subs.o:   GetTotal
62752       Uds.o:    GScan
62753       Subs.o:   GetTitle
62756       Subs.o:   PutTitle
62759       Subs.o:   GScan
62762       Subs.o:   FindNew
62801       Subs.o:   GetSum
62830       Uds.o:    GetSum
```

-- ROM Kernal --

63465 Used by Punter, an RS-232 primitive
65466 SETLFS, A=files#, X=device#, Y=command channel.
65469 SETNAM, A=length, X=<name, Y=>name
65472 OPEN, A=length of name, X=>name, Y=<name
65484 CLRCHN, clear i/o channels,print/input from screen
65493 LOAD, A=0, X=>start, Y=<start.
65496 SAVE, A=zpage location of pointer to start of save, x=>end, Y=<end.

20.5 BASIC VARIABLE

This section contains a list of the most common BASIC variables that are in use in the stock C-Net 128 version 4.0 and 5.0. Each variable is given along with a description of how it is used throughout the program.

Version 4.0 and 5.0 are different from older 128 versions in the sense that variables created in sub-program modules (BBS, Mail, etc.) that aren't used by the main program are automatically eliminated from existence when the Main prompt is again reached. For this reason, you will notice only a small number of variables listed here that are SAFE for your uses. Variables now fall into one of several distinct classes:

1) In a BASIC pfile, you may use absolutely ANY variable names and number of variables for your purposes. These variables are automatically removed from the system when the pfile is exited. The one drawback, of course, is that useful variables (such as NA$, etc.) can not be used in these files.

2) In a C-Net pfile, a LOCAL, or AUTOMATIC variable. Generally, you may use any variable name you wish, as long as it is not found in this list with a (!) next to it. If you suspect that a C-Net BASIC subroutine uses one of the variables marked (-), simply choose another one that's not on this list. NEW variables CREATED by these files are automatically removed from the system when the pfile is exited.

3) STATIC variables, ones that aren't destroyed by C-Net as pfiles are exited. These variables are desirable for pfile mods which must extend between pfiles are callers (scores in games, or tracking how many times a user has played a game, for example). C-Net sets the "cut-off" point for variables that will survive through the execution of a pfile as those which are present in memory when the pfile is initiated. To create your own static variables, you must "instance" them somewhere before this point, possible in prg.setup, or prg.logon after line 61025. This is exactly the purpose of line 61077 in prg.setup.

4) New mod variables "created" in the CN file itself automatically become static. If it is not your intention that these variables last forever, it is a good idea to pick (carefully) from the following list for CN file mods to avoid leaving "trash" in the system, which may slow things down.

Here's a key to the symbols used next to variable names:

" " Denotes an operating system variable, which must not be interfered with by external programming! There is no problem, however, with reading these variables or using them in calculations, as long as no assignment to them occurs.

"*" Denotes a variable which is used by the P-File support routines. If you exit your P-File via "goto5650" then these variables must NOT be used by external programming.

"-" Denotes a variable that is used and/or altered by one or more system subroutines. Depending on which subroutines your modifications make, it may be unsafe to use any of these variables for more than very temporary work.

-	A	temp
	A5(5)	gosub 750 "," and ";" routine, temp use.
	A%	temp, usually an OUTPUT buffer (syso). MCI variable 5
	A1%	Last configured access - used for on-line access changes
	AC%	Access group of user on-line 0 to 14. 0 is new user.
*	AC%(41)	For subboards, others, list of entry access codes.
	AC$(14)	ac$(0) - ac$(14) is access group information. byte 1 - minutes per call byte 2 - call per day byte 3 - minutes max idle byte 4 - dloads per call byte 5 - uloads per call byte 6 - u/d ratio byte 7 - messages per call byte 8 - pfiles (minutes) per call byte 9 - feedbacks per call byte 10- editor lines maximum byte 11- sf% flags byte 12-14 (ASCII) minutes per day byte 15-18 (ASCII) 1/100 cents per minute byte 19-22 (ASCII) ag$ group name
	AG	Age (years) of the user on-line
	AG$	Access group name for access of user on-line:

		MCI variable
	AK$	Thirty-eight =’s followed by a carriage return.
	AM(15,5)	SAM variables AM(x,0) last caller counter AM(x,1) since setup counter AM(x,2) since period reset counter AM(x,3) totals counter AM(x,4) currents counter Where x is 0=Feedback, 1=Mail sent, 2=Mail to ID1, 3=Posts, 4=Responses, 5=Gfiles read, 6=Pfiles ran, 7=System errors, 8=New users, 9=Uploaded files, 10=Uploaded blocks, 11=Downloaded files, 12=Downloaded blocks, 13=New Users, 14=Minutes used, 15=Charges. AM(x,5) is used by the ML to keep the dates for "LAST, SETU, PERI, and TOTL".
-	AN$	Temp, usually an INPUT buffer; MCI variable 7
-	B	Temp
	B%(10)	Gosub750 parser, temp use
-	B$	Gosub3 error name, temp use, MCI variable 6
-	B1$	In subboards, title of current subboard (filename).
	BD$	User’s birthday, 6 digits YYMMDD
	BN	In the subboards, current subboard number.
*	BR	In most systems, last read/manipulated list item, in p-files/g-files, number of items in current list.
	BZ	In the subboards, U/D number of subboards.
	C	Temp
-	C$	Temp
	C0%	Tracks the current position in the ring buffer LP$() for the last 16 commands.
	CA	Total number of system calls.
	CB	Number of public messages posted by the user before his current call.
	CC	Tracks charges for individual system functions, before later being rounded to the penny and added to Z6%.
	CC%	Flag for u/d, email, and subboard systems, if cc%=0 no charges were made, if non-zero, directory and pointers files must be re-saved before exiting.
	CC%(14,14)	The accounting system variables, 1st index is the access group, 2nd is the item (see a command from the Main menu).
	CD	Number of blocks that the user has downloaded before his current call
	CH%	Number of times that chat has been requested. When ch% gets to be 5, the user is logged off the system. When chat mode is enabled, ch% is reset.
*	CM$	Set to the current subsystem’s name, such as "E-Mail", "Sub 1", or "Pfiles".

	CN	Number of calls since the system was set-up!
	CO%	Current user's computer type
	CP$(10)	List of computer types (see prg.setup for definition)
	CR	Pfiles/Gfiles, the current rate charged per minute
-	CR%(251)	If the editor is used, these are flags telling whether or not RETURN was pressed on each line. 1=yes, 0=no.
	CS	Tracks the time at which a user entered the pfiles area, to do accounting calculations later.
	CT%	Number of calls the user has made today.
	CU	Number of blocks that the user has uploaded before his current call.
	CV	Number of private messages that the user has written before his current call.
	D	Temp use.
*	D%(41)	Temp use.
	D$	Temp use.
	DO	In subboards, current subboard # + 6.
-	D1%	Used to represent a device number. In maintenance and term, the current work device.
	D1$	The current date and time, the string is 11 ASCII characters in length, in the form WYYYMMDDHHMM where W is the day of the week (1-7), 1=Sunday, YY is the year, MM the month, DD the date, HH the hour (80 is added if the hour is PM), and MM is the minutes, MCI variable 0.
-	D2%	Used to represent a drive number. In maintenance, the current work drive.
	D2$	MCI V8, subboard name for entry files.
	D3$	MCI V9, last caller for sys.welcome.
*	DC	When entering subs/uds/files, tracks the number of paths requested (like B4;6;7 has 3 paths).
*	DC%	The counter, counts up to DC.
	DF	Number of files user has downloaded.
	DN	Number of blocks user has downloaded, including his current call. (Number of blocks this call is obtained by dn-cd).
	DP%	Default protocol user has selected (see tp$() list).
	DS	Disk drive error number.
	DS$	Error channel reading.
	DT$(20)	Temp use.
	DV%(46)	Device numbers. dv%(1)=system disk 1 dv%(2)=email disk 2 dv%(3)=etcetera disk 2 dv%(4)=g-files disk 5 dv%(5)=p-files disk 3

		dv%(6)=feedback printer flags bit 0 disk, bit 1 printer dv%(7)-dv%(46) contain subboard device numbers
	DX	Flag, is email "d." file loaded?
	DZ	In subs, logon, the current "depth" in a global transversal of all subboards including directories
	DZ$	Used with DZ, the current directory name, like d.DZ$
	E	Temp use.
	E$	Temp use.
*	E%(45)	Temp use.
	EF	Unused - once used by ML in older versions.
-	EE	Set to the maximum number of lines (no more than 250) that may be used in editor.
	F$	Temp use, usually fiename in u/d and terms.
	FB(7,9)	Blocks free on any drive, only updated at setup and after logoff of each 5th caller to speed through-put. For example, fb(0,2) is device 8, LU 0.
	FC$	User's first call, 6 digits, YYMMDD.
	FO%	This flag tells whether or not file 7 is open to the current subboard's relative file. 1=Yes, saves time, not having to re-open the file each bulletin read.
	G	Temp use
	GG	The file status byte (st) after a gosub7 to read a line from a file
*	GS$(30)	In subboards, acts as a "stack" to move through all subboards, as in RA, etc., g/pfiles also
	HD$	Temp use
*	HD$(51)	Temp use
	HI%	Maximum for gosub750, temp use
-	HJ$(5)	Used in the 2850 routine when doing +,- scans through the user files to find a handle
	ID	The user's ID (account) number
*	ID$	In p/g-files, "P" or "G" to distinguish
	II$	The system's login identifier
-	IM%	Temp use
-	IP%	Gosub 2100: if the input ended with "!" ip%=1
	JU$	An 80 bit (ten byte) string containing 80 flags for joined or unjoined status of the 40 subboards and 40 possible "root" upload/download libraries.
-	KK	Gosub11060; returns from the editor with the number of text lines used in the editor array tt$(). kk=0 if the editor was "aborted"; counters.
	KK$	Temp use
	L1$	User's address, line 1
	L2$	User's address, line 1
	LC$(16)	The activity queue (last 16 commands)

	LD$	Last call date/time for the current user, see D1$ for date format; MCI variable 1
	LF	Line Feeds required (1=yes)
*	LL	In p/g-files, number of subdirectories deep (each directory appears in dt$())
	LL%	User's line length (22 to 80 columns)
	LN%	Temp use
-	LP	Gosub40; set LP=1 before a gosub40 to automatically carriage return after a$ is output.
	LP%	The last PROTO file number loaded, to prevent re-loading
	LT$	Sign-on date/time for the current user, see D1$ for the date and time format
	MF	Flag: note missing files as missing when doing a file read (gosub 15000, 16000)
	MI$	Used to hold multiple command input, holds the text entered following the " @+@ " character in the input. Gosub2100,2200 check this string for input before keyboard or modem input.
	MR%	First mail record in the email's relative file for the current user. =0 if he has no mail.
	MU(71,1)	Activity graph counters. 1st index is for each 20 minute period during the day, 2nd is for time spent.
-	MW	Gosub40; if mw is set to 1 before a gosub40, a spacebar or "/" press will immediately abort the output where the key was pressed
	N%	Temp use
	N%(81)	Temp use
	NA$	The user's handle: MCI variable 2
	NL	"More?" prompt option selected, 1=yes
	NM%	In the subboards, the number of message headers (posts + responses)
*	NN$(102)	In p/g-files, the "source" column in the list
	O	ALWAYS set to the ML output routine (7171)
-	P1%	Used often or ML communications
	P%()	Alphabetical arrangement for ID numbers
	PA%	Paranoid flag
	PB%	Number of public messages user has left
	PH$	Phone number of user
	PL	PL=1 before input indicates all uppercase
	PR$	Current PRG file name
	PV%	Number of private messages user has left
	PW$	Password of user
	RC	=1 if space bar or / pressed during gosub40
	RN$	Real name of user
	SF%	Contains access group flags
	SH	=47 if / pressed during output
	SI$()	Holds u/d and subboard configuration data
	SR%	Number of screen rows
	SY$	Name of last config file (U/D or Sub)

TC%	Total calls
TR%	Time remaining in minutes
TT$()	The editor text array
UF%	Number of files uploaded
UL	Upper/lowercase flag 1=yes
UP%	Number of uploads user has made
UR	Number of user accounts
US%	Used lines in current del file
WW	Word wraparound for input flag
X$	Contains system drive numbers
XM%	Help level
Z1%	Minutes used today in previous calls
Z2%	Money balance for accounting system
Z3%	Maximum minutes per call
Z4%	Charge per minute for the accounting system
Z5%	Maximum debt (credit)
Z6%	Other charges
ZZ	ZZ=1 indicates local mode

20.6 BREAKDOWN OF C-NET MAIN PROGRAM ROUTINES

Line #	Description
2	Position relative file
3	Read error channel
4	Check for carrier
7	Read string from disk into a$
9	Expand date in an$
15	Print a period
17	Print one new line
18	Print two new lines
19	Open disk drive command channel
23	Scratch and re-write a file
27	Open etc.recs file
35	Print area in top right corner
40	Output a$
50	Subsystem closed message
220	Initialization/configuration
400	Waiting for call
500	Read free blocks
700	Decipher editor ranges
850	Read a SYS config file
880	Load a U/D protocol program
920	Connection to the system
1300	Main command level
2100	Input a line into an$
2150	Input a password into an$
2200	Get a single character
2250	Read access group information
2300	Various general commands
3000	Check for commands available at all levels
3100	Modem operations
4000	View subop of current subboard
5500	Read a PRG file into memory
6000	Logoff

7000	Chat mode
8000	Enter bulletin board subsystem
8100	Relative file manipulation
8400	Uploading and downloading
10000	Compare dates for new operations
10500	Send electronic mail routine
11000	Editor subsystem operations
60000	Open file routines
61000	PRG loading space

20.7 BASIC ERROR CODES

For reference, here are the error number codes for many of the more frequently encountered BASIC errors:

1	Too many files	2	File open
3	File not open	4	File not found
5	Device not present	6	Not input file
7	Not output file	8	Missing file name
9	Illegal device number	10	Next without for
11	Syntax	12	Return without gosub
13	Out of data	14	Illegal quantity
15	Overflow	16	Out of memory
17	Undef'd statement	18	Bad subscript
19	Redim'd array	20	Division by zero
22	Type mismatch	23	String too long
24	File data	25	Formula too complex
36	Bad disk	41	File read

21.0 ORDERING INFORMATION

This section is included to offer special discounts on C-Net Merchandise, and accessories.

T-SHIRTS:

100% Cotton Blend, with the familiar C-Net Artwork, and the message: "Put your hands on the monitor and feel the power!"
Sizes: S - M - L - XL
Price: 14.95
S/H: 3.10
ITEM NUMBER: 1001

MUGS:

Ceramic mug with the familiar C-Net artwork, and the message: "Put your hands on the monitor and feel the power!"

Price: 9.95
S/H: 3.50
ITEM NUMBER: 1002

DONGLES:

For lost or broken dongles, you may order a replacement. Only works for this version, 6.0.

PRICE: 10.95
S/H: 2.10
ITEM NUMBER: 1003

REPLACEMENT MANUALS:

For a spare or maybe your Co-SysOp, order this replacement manual.

PRICE: 12.95
S/H : 4.05
ITEM NUMBER: 6001

REPLACEMENT MASTER DISKS:

For lost, or damaged diskettes or if you need a different format.

3.5" 1581 PRICE: 5.50 ITEM: 6002
5.25 1541 PRICE: 7.25 ITEM: 6003
5.25 1571 PRICE: 6.00 ITEM: 6005

S/H: 2.00

- ORDER FORM -

NAME: _____ ITEM# _____ PRICE _____
ADDRESS: _____ ITEM# _____ PRICE _____
CITY: _____ STATE: _____ ITEM# _____ PRICE _____
ZIP: _____ TELEPHONE: _____ TTL IT _____ TOTAL _____
C-NET SERIAL #: _____ OHIO ADD 5.75% TAX _____
TOTAL _____

CHECKS, MONEY ORDERs only please!

MAIL TO:

Perspective Software South
P.O. Box 540
Cuyahoga Falls, Ohio 44222-0540

No truly outstanding product can be attributed to one person. This is true of the C-Net Bulletin Board System. Many fine individuals sacrificed part of their lives to bring this product to market. Their hard work cannot adequately be acknowledged in this small section. Perspective Software is deeply grateful to those individuals.

Perspective Software
Post Office Box 540
Cuyahoga Falls, OH 44222

Part#6001