SOFTWARE REFERENCE
MANUAL

HDOS DISK OPERATING SYSTEM

VERSION 3.02

CHAPTER 6

HDOS 3.02 COOKBOOK

HEATH DISK OPERATING SYSTEM

SOFTWARE REFERENCE MANUAL

VERSION 3.02

 Through the years it continued to be improved by successive revisions which included 1.5, 1.6, and finally 2.0. It was entered into public domain on 19 July 1989 per letter by Jim Buszkiewicz, Managing Editor, Heath Users' Group, P.O. Box 217, Benton Harbor, MI 49022-0217 (616)982-3463. A copy of this letter is available for public inspection.

This manual is indicative of further improvements and provides for the latest revision, HDOS 3.0 and HDOS 3.02. Revision 3.0 is detailed in chapters 1, 2, and 3, while chapters 4, 5, 6, 7, 8, and 14, are the kernel of revision 3.02. Chapters 9 through 12, with minor improvements, are essentially picked up from the original HDOS 2.0 manual. Indeed, HDOS is still alive and well!

Chapter 6, HDOS 3.02 Cookbook, alphabetizes and groups first all similiar SYSCMD commands and then all of the PIP commands. This provides a panoramic view of the commands that are available, and provides you with the ability to choose the best command to accomplish your objectives.

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Instead, you are invited to direct any questions concerning the Heath Disk Operating System (HDOS) to Mr. Kirk L. Thompson, Editor "Staunch 89/8" Newsletter, P. O. Box 548, #6 West Branch Mobile Home Village, West Branch, IA 52358.

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INTRODUCTION TO THE CHAPTER

There are many new commands in HDOS 3.02 that will delight the user. This operating system is so far advanced over the original HDOS version 2.0. that once you start using it, you may never return to HDOS 2.0.

This chapter will display the commands of both Syscmd/Plus and Pip/Plus in an alphabetical/functional way, so that all of the commands that perform a certain function will be clustered together. For example, all the CAT commands. This will not only help you to decide which command is the best to use to help solve a certain problem, but also will help you to learn the HDOS 3.02 Operating System faster.

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INTRODUCTION TO THE "COMMAND MODE" COOKBOOK

The terms "Command Mode" indicate that the commands associated are located in the file "SYSCMD.SYS." The heart of the HDOS 3.02 modification is to be found in two main disk files: (1) SYSCMD.SYS and (2) PIP.ABS. In the documentation, these correspond to "SYSCMD/Plus" and "PIP/Plus."

SYSCMD/Plus and PIP/Plus remain co-resident in memory whenever possible. This eliminates the need for slowdowns due to repeated loading and unloading of PIP/Plus, as was the case in HDOS version 2.0.

The following paragraphs comprise a list of HDOS 3.02 commands with brief explanations and examples that will introduce you to the new power and versatility of the HDOS 3.0 Operating System, Version 3.02.

The following conventions apply:

(1) To address a secondary device precede the command with a semicolon. Example: ;PC0<RTN>.

(2) Any command may be preceded by a period [.], which will clear the screen and set hold-screen mode. To advance one line in hold-screen mode, hit the SCROLL key. To advance one screen, hit SHIFT SCROLL.

(3) The command line will be parsed to see if user wants SYSCMD to add device names as arguments. The current default will be used. For example: 1:X.X becomes SY1:X.X.

(4) Multiple commands may be entered on a single command line. Separate them with a backslash. For example: M1\.C1\D1.

(5) The [^] symbol means to type a space. This is a critical matter.

(6) The commands used in SYSCMD/Plus and PIP/Plus may be abbreviated. For example: T[ype]. The characters inside the brackets [ ] do not need to be typed.

****

SYSCMD/Plus

The following is a list of SYSCMD/Plus commands for HDOS 3.02:

BYE	Two primary methods of exiting HDOS.
CAT	Provide a disk directory on the screen.
CHECK	Calculate the CRC checksum for selected files.
CLS	Clear the screen.
COPY	Copy files from one directory device to another.
CRC	Same as CHECK.
DATE	Display or set the system date.
DEFAULT	Display or set the current system default drive.
DELETE	Delete files from a disk.
DEVICES	Display current status of all known device drivers.
DIR	Same as CAT, including file sizes and other data.
DISMOUNT	Dismount a disk from a disk drive.
ERASE	Same as DELETE.
FLAGS	Set or clear flags from disk files.
FLOAD	Load a device driver into RAM, lock, and fix it in memory.
ID	Display the current version information.
LIST	Display an ASCII file on the screen.
LOAD	Load a device driver into RAM and lock it there.
LOG	A TASKing file to keep track of time expended.
MOUNT	Mount a disk on a disk drive.
MOVE	Copy selected files to a destination device, and then erase the source file.
Pn	Set the active list device driver unit number.
PATH	A route for the system to follow to find sub-directories and commands within other user areas.
PIP	Brief method of performing commands.
PRINT	Send a file to the printer.
PRN	Set or display active list device name.
PROMPT	Set, clear, or display your system prompt.
PUSER	Put a file into a user area.
QUIT	Another method for exiting HDOS.
RENAME	Rename a file.
RESET	Dismount old disk; remount new disk.
RUN	Execute a selected file.
RUSER	Remove a file from a user area.
SFLAGS	Set specific flags.
START	Start a TASK file.
TIME	Set or display the current system time.
TYPE	Display an ASCII file on the screen.
UNLOAD	Unload a selected device driver that is loaded.
USER	Set or display the current active user areas.
VERIFY	Used during the COPY process to verify files.
VERSION	Display current SYSCMD/Plus information.

Refer to disk file SYSHELP.DOC for additional commands not covered by this listing.

****

See Also:
HA[lt] or
Q[uit]

BYE
(Terminating the Session)

The command HA[lt] requires only the letters HA to run. The letters inside the brackets are optional. Do not type the brackets.

The command Q[uit] requires only the letter Q to run. The letters inside the brackets are optional. do not type the brackets.

The BYE command is similar to DISMOUNT, except that BYE automatically dismounts ALL mounted devices and prepares the system for a new Bootstrap. For example:

```
'BYE<RTN>'
"Volume 202, Dismounted from SY2:
 Label: TAX SCHEDULES 1986"
"Volume 100, Dismounted from SY1:
 Label: WORKING DISK"
"Volume 001, Dismounted from SY0:
 Label: SYSTEM VOLUME"

"System Down..."
```

You may also use the commands:

HALT<RTN> (HA[lt]<RTN>) or QUIT<RTN> (Q[uit]<RTN>)

to dismount all mounted devices and prepare the system for a new bootstrap. There is a caveat on using HALT; it first runs SHUTDOWN.ABS, or SHUTDOWN.BAT, if present. A hard reset is required to reboot.

.....

See Also:
.C
.C1
.C2
DIR

CAT or C[at]
(Cataloging Non-System Files)

This command requires only the letter C to run. The letters inside the brackets are optional. Do not type the brackets.

The C[AT] command produces a directory listing of information about a file or group of files. You may use it with or without the device specifications 1, 2, ;0, ;1, or ;2. But only one device may be specified at one time. If you do not specify a device, HDOS assumes that you mean SY0:. As before, the period [.] causes the list of files to stop after 24 lines have been printed on the screen.

If you have a disk with only BASIC.ABS on it, type C<RTN>, and the following list will be printed on the console:

CAT or C[at]
(Cataloging Non-System Files)(Cont)

```
Name    .Ext   Size   Created   Time   Flags--- User 0  Date: 17-Nov-88

BASIC   .ABS     42  17-Nov-80  12:00a    C
   1 File, Using 42 Sectors (946 Free)
```

This listing provides information about nonessential files on the disk mounted in SY0:.

To obtain a listing from a disk in another drive, type:

'C1<RTN>' or '.C1 for drive SY1:'
'C2<RTN>' or '.C2 for drive SY2:'

You can also list information about individual .DOC files on SY1: by using the C[at] command. The general format of this command is:

'C1*.DOC<RTN>' or '.C1*.DOC<RTN>'

You may use the C[at] command to print a catalog listing of files on a configured line printer (see the "Peripherals" section of this chapter to configure your line printer). The formats for this use of the C[at] command are:

'C[at] LP:=DVn:<RTN>'
'C[at] LP:=DVn:FNAME.EXT<RTN>'

Note that the command DIR is a synonym for C[at] and works in exactly the same way in all instances.

.....

See Also: C[at]/S or .C[at]/S

CAT/S or C[at]/S
(Cataloging System and Non-System Files)

The C[at]/S command produces a listing of all the files, both system and non-system, on the disk. This list will not be alphabetized. The /S modifier informs HDOS that you wish to display files, the listing of which would normally be suppressed because the "S" flag is SET on them. Type: 'C[at]/S<RTN>' and a list similar to the following list will be printed:

CAT/S or C[at]/S

(Cataloging System and Non-System Files)(Cont)

```
Name    .Ext   Size   Created   Time   Flags--- User 0  Date: 27-Jun-89

HDOS30  .SYS     40  20-May-89  12:20a   SLW C
TT      .DVD     13  20-May-89  12:20a   SLW C
SYSCMD  .SYS     40  20-May-89  12:20a   SLW C
PIP     .ABS     49  20-May-89  12:20a   SLW C
SY      .DVD     20  20-May-89  12:20a   SLW C
AUTOEXEC.BAT      1  28-Apr-89   7:44a
CLOCK   .TAS      3  28-Apr-89   7:44a
ERRORMSG.SYS      8  28-Apr-89   7:44a
SET     .ABS     12  28-Apr-89   7:44a
SYSHELP .19      43  20-May-89  12:20a
HELP    ,19      23  20-May-89  12:20a
LP      .DVD     15  17-Nov-80  12:16a
RGT     .SYS     1   20-May-89  12:16a   SLW C D
GRT     .SYS     1   20-May-89  12:16a   SLW C D
DIRECT  .SYS     24  20-May-89  12:16a   SLW C D

   15 Files, Using 421 Sectors (525 Free)
```

.....

See Also: .C[at]F or C[at]/S/F or .C[at]/S/F

CAT/F or C[at]/F

(Determining File Sector Allocation)

HDOS assigns sectors in groups, or clusters, in order to facilitate the process of extending a file. For details, see "Theory of Operation" in Chapter 6. Thus, the number of sectors HDOS assigns to a file may or may not correspond to the number of sectors that it takes to store the data in the file. The C[at] and C[at]/S commands produce listings in which the size of the file is the number of sectors that it takes to store the data in the file. When appended to the C[at] and C[at]/S commands, the/F switch will produce a listing in which the size of the file reflects the actual number of sectors that have been allocated to the file. The general format for using the /F switch is:

'C[at] DVn:/F<RTN>'

or, more commonly:

'C[at] DVn:/S/F<RTN>'

or '.C/S/F<RTN>'

for SY0:.

CAT/F or C[at]/F
(Determining File Sector Allocation)(Cont)

The following list appears on the screen:

```
Type: Boot     INIT      20-May-89 by HDOS 3.0   User 0  Date:28-Jun-89


Name    .Ext  Size Alloc  Created   Time  Flags   User 0  Accessed  A/C

HDOS30  .SYS   40   42   20-May-89 12:20a SLWC         0  28-Jun-89   2
TT      .DVD   13   18   20-May-89 12:20a SL C D       0  28-Jun-89   2
SYSCMD  .SYS   40   42   20-May-89 12:20a SLWC         0  28-Jun-89  95
PIP     .ABS   49   72   20-May-89 12:20a SL C D       0  28-Jun-89  72
SY      .DVD   20   24   20-May-89 12:20a SL C D       0  28-Jun-89  10
AUTOEXEC.BAT    1    6   28-Apr-89  7:44a C           0  28-Jun-89  20
CLOCK   .TAS    3    6   28-Apr-89  7:44a             0  28-Jun-89  95
DK      .DVD   18   20   20-May-89  7:44a             0   3-Jun-89  13
ERRORMSG.SYS    8   12   28-Apr-89  7:44a             0   3-Jun-89   1
INIT    .ABS   29   32   20-May-89  7:44a             0  28-Jun-89  32
SET     .ABS    8   12   20-Apr-89  7:44a S WC        0  28-Jun-89   4
SYSGEN  .ABS   20   24   28-Apr-89  7:44a             0  28-Jun-89   6
UD      .DVD   15   18   20-May-89 12:20a             0  28-Jun-89  84
RGT     .SYS    1    1   20-May-89 12:20a      01234567  28-Jun-89  25
GRT     .SYS    1    1   20-May-89 12:20a      01234567  28-Jun-89  25
DIRECT  .SYS   24   28   20-May-89 12:20a      01234567  28-Jun-89  25

  16 Files, Using 309 Sectors (637 Free)
```

See Also: CLS, . (Keyboard Dot)

CLS
(Clear Console Screen)

The CLS command clears the console screen. For example, if you obtain a disk directory, and want to continue with the next step in your plan, but the screen is cluttered, you can remove the clutter by simply typing CLS<RTN>. The screen clears, and the cursor moves to the "HOME" position. The alternate command is to just type a dot .<RTN>.

See Also: COPY or CO[py], VERI[fy] or MOV[e]

COPY or CO[py]
(Duplicating Files)

You may wish to have an extra copy of a file for the purposes of modification or safekeeping. Use the COPY command for such purposes. In general, many commands are a form of the COPY command. When you list the contents of a file, you are actually "copying" the file to the system console. When you run a program, you are actually "copying" the

COPY or CO[py]
(Duplicating Files)(Cont)

contents of a file into the memory of the computer and then telling the computer to "jump" to the memory location. This concept will be discussed in more detail in the "Peripheral Interchange" section.

The general format for the COPY command is:

'CO[py] DVn:DESTINATION.EXT=DVn:SOURCE.EXT<RTN>'

The destination and source may be either a filename or a device (such as LP: or TT:) or a combination of the two. You can omit the DVn: portion of both filenames if the source file is on SY0:, and you want the destination file stored there as well. If either of the files is not stored on SY0:, it is good practice to include the DVn: portion with both filenames.

HDOS 3.0 has a unique method of copying files. The general command to copy one file from one drive to another is as follows:

'CO[py] SY1:LP.DVD=SY0:LP.DVD<RTN>'

However, if you want to copy all of the files from one drive to another drive, the simplest command is:

'CO[py] SY1:=SY0:<RTN>' or 'CO[py] SY1:*.*=SY0:*.*<RTN>'

For now, you may copy one of the HDOS files such as BASIC.ABS by typing 'CO[py] TEMP.ABS=BASIC.ABS<RTN>'. The output generated will be as follows:

'CO[py] TEMP.ABS=BASIC.ABS<RTN>'

"1 FILE COPIED"

You have created an exact duplicate on the system volume of the file containing the program BASIC.ABS. The file is executable by means of any of the following commands:

'TEMP<RTN>'
'RUN TEMP<RTN>'
'TEMP.ABS<RTN>'
'RUN TEMP.ABS<RTN>'
'RUN SY0:TEMP.ABS<RTN>'

A copy of a system file, such as HDOS30.SYS, is not at all useful. System files may be copied in a useable form only by means of the program, SYSGEN, as explained in "SYSGEN" in chapters 2 and 3.

COPY or CO[py]
(Duplicating Files)(Cont)

To copy a file to a peripheral, simply specify the peripheral device name in the destination portion of the COPY command. HDOS will treat the device name as it it were a file. For example, to copy a file to the terminal, type:

```
'CO[py] TT:=SYSHELP.DOC<RTN>'
```

Or to copy this file to a printer, type:

```
'CO[py] LPn:=DVn:SYSHELP.DOC<RTN>'
```

It is also possible to copy a file from TT: to disk, as is demonstrated in the following example:

```
'CO[py] TESTFILE.DOC=TT:<RTN>'
'THIS IS A TEST.<RTN>'
'TYPE CTRL-D'
"1 FILE COPIED"
```

If you type C[at]<RTN> after performing this example, the file SY0: TESTFILE.DOC will be included in the catalog listing.

It is also possible to copy from one non-disk device to another. For example:

```
'CO[py] LP:=TT:<RTN>'
'This is another test.<RTN>'
'TYPE CTRL-L and CTRL-D'
"1 FILE COPIED"
```

When you finish entering data for the keyboard, (which was signaled by the CTRL-D command), HDOS will transmit what you typed to the system printer (LPn:).

VERIFY

Within HDOS 3.02, you can have the system verify your file(s) by using the command:

```
'CO SY1:LP.DVD=SY0:LP.DVD^/V[ERIFY]'
```

Or you can turn the VERI[fy] feature on before you copy by using the command:

```
'V[ERIfy] ON<RTN>'  or  'V[ERIfy] OFF<RTN>'
```

Finally, VERIFY may be included in the AUTOEXEC.BAT file.

COPY or CO[py]
(Duplicating Files)(Cont)

MOVE

Also, when you are planning to delete the source file after it has been copied, use the command:

'MOV[e] SY1:LP.DVD=SY0:LP.DVD<RTN>'

.....

See Also:
CH[eck]

CRC
(Provides File Checksum)

The command 'CRC^DVn:FILENAME.EXT<RTN>' provides a CRC (cyclic redundancancy check) for any file. The CRC is a multiple-digit number. On the same file, the CRC should always be the same. If it is different, something bad has happened to the copy. Usually, this indicates that somewhere along the line it has picked up a bad sector.

A similar command is 'CH[eck]^DVn:FILENAME.EXT<RTN>'. This command requires only the letters CH to run. The letters inside the brackets are optional. Do not type the brackets.

.....

DATE or DA[te]
(Manipulates System Date)

This command can do three tasks:

(1) Type 'DA[te]<RTN>', and the system shows you the current system date:

(2) Type 'DA[te]^NO-DATE<RTN>', and the system clears the system date to <NO-DATE>.

(3) Type 'DA[te]^dd-mmm-yy', and the system date is set to the new date that you have typed in.

****

See Also:
ERA[se]

DELETE or DEL[ETE]
(Deleting Files)

This command requires only the letters DEL to run. The letters inside the brackets are optional. Do not type the brackets.

From time to time you may decide that you have too many files on your disk. You can get rid of extraneous files by using the DEL[ete] command. Be forewarned, however, that there is no easy way to recover a file that has been deleted, except to copy it from a "back up" disk, such as the distribution disk. It is for this reason that the HDOS distribution disk and system files are write-protected. Write protection insures that essential system files will not be inadvertently destroyed. As a "safe" example of this command, you may delete the files that you copied in the previous sections by typing:

'DEL[ete] TEST1.DOC,TEMP.ABS<RTN>'

As a more "daring" example, you may want to delete all the files that go by the name "FARM," and reside on SY1:. A word of caution at this time. For purposes of safety, it is a good practice to always obtain a disk directory of the disk files you propose to delete in order to prevent deleting the wrong files. For example, type:

'C[at]^SY1:FARM.*<RTN>'

to see exactly what would be deleted. If all is well, then type:

'DEL[ete]SY1:FARM.*<RTN>'

.....

DEVICES or DEV[ices]
(Provides System Device Data)

This command can do two tasks:

(1) Type 'DEV[ices]', and the system shows device information for all known devices. This is a simple, one-column display.

(2) Type 'DEV[ices] DVn:' and the system shows device information for DVn:.

.....

DISMOUNT
(Dismounting Disks)

When you are finished using the disk mounted in SY1:, SY2:, DK0:, DK1:, or DK2:, etc. you must use the DISMOUNT command to instruct HDOS to restore the directory information from memory to the disk. In HDOS 3.02 there are several methods to dismount a disk:

TABLE 2: Options for Dismounting Disks in HDOS 3.02

DISMOUNTING OPTION	PRIMARY DRIVES	SECONDARY DRIVES
Old Style of Dismounting	DISMOUNT SYn:<RTN>	DISMOUNT DKn:<RTN>
HDOS 3.02 New Style:	**********	**********
Single-Dismount:	Dn<RTN>	;Dn<RTN>
Multiple-Dismount:	MD<RTN>	;MD<RTN>
Quiet-DMount Many Disks:	QD<RTN>	;QD<RTN>

Having dismounted DVn:, you can replace the dismounted disk with another. DO NOT remove the disk before it has been dismounted, or files may be lost.

The mounting of SY0: is automatically accomplished during Bootstrap. You cannot normally use the MOUNT command with SY0:, but you can use the DISMOUNT command.

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COMMAND LINE EDITOR

CTRL-A invokes the command-line editor at the system prompt.

The commands are as follows:

A	Abort and Restart	CTRL-D	Quit Editor
C	Change Mode	nSc	Search for Character
nD	Delete character(s)	X	Extra (Insert Mode)
H	Hack and Insert	ESC	Exit Insert or Change Mode
I	Insert Mode	nSPACE	Move Cursor Right
nKc	Kill character(s)	nBKSP	Move Cursor Left
L	List rest of line	nDEL	Move Left & Delete Chars
Q	quit editor	RET	Accept Command Line

.....

FLAGS

CFLAGS or CF[lags] to Clear: SFLAGS or SF[lags] to Set

(Write Protection)

You may decide to write-protect your files to prevent them from being inadvertently deleted or modified. You can do this by means of the FLAGS program. In HDOS 3.0, the flags available are as follows:

```
A ARCHIVE ......... Not yet supported.
B BAD ............. File has a bad sector in it.
C CONTIGUOUS ...... File recorded continuously on disk.
D DELETE PROTECT ... Cannot delete unless use PIP/FORCE.
L LOCK ............ Unalterable.
S SYSTEM .......... Identifies system files.
W WRITE PROTECT .... Prevents writing to file.
```

TO SET A FLAG:

COMMAND: 'SF^DVn:FILENAME.EXT=n' sets flag n.
COMMAND: 'SF^Filename.Ext=&' sets S, L, W, and D flags at one fell swoop.
COMMAND: 'SF^Filename.Ext=*' sets all possible flags.
COMMAND: 'SF^Filename.Ext=!' sets only selected flags: clears all others, except C.

TO DELETE A FLAG:

COMMAND: 'CF^DVn:' clears all flags on all files, except C, L, and S.
COMMAND: 'CF^DVn:FILENAME.EXT' clears all flags on one file.
COMMAND: 'CF^DVn=n' clears n flags on all files.
COMMAND: 'CF^DVn:FILENAME(S)=n' clears selected flags.

USE OF FLAGS:

Flags are used to control access to files or to identify files.

TO CONTROL ACCESS:

(1) Set the D flag to keep a file from being inadvertently deleted.
(2) Set the W flag to keep a file from being written to.
(3) Set the L flag to keep a file from being altered in any way.
NOTE: The L flag is the most powerful flag of all, since it cannot be deleted except by using the /FORCE command under PIP/Plus.

TO IDENTIFY:

(1) The B flag may be set by the user. It indicates that bad sector(s) have been found in that file.
(2) The C flag is automatically set by HDOS. It indicates that this file has been copied contiguously to the disk. The system files all carry this flag. It occurs automatically during INIT or SYSGEN. Also the C flag may be administered to selected files.
(3) The S flag is automatically set by HDOS. This indicates that the file is a system file.

FLAGS
CFLAGS or CF[lags] to SET: SFLAGS or SF[lags] to Clear
(Write Protection)(Cont)

EXAMPLES:

Setting a flag:

'SF^SY1:OPUS.DOC=D<RTN>'

Clearing a flag:

'CF^SY1:OPUS.DOC=D<RTN>'

See Also:
FL[oad] nn

LOAD or L[oad]
(Loads a Specific Device Driver)

The L[oad] command will load, and lock in memory a specific device driver. It will not fix it in memory like FLOAD will. For example: LOAD LP:<RTN>.

The FL[oad] command will load, lock, and fix in memory a specific device driver. It will not fix it in memory. Example: FL[oad] LP:<RTN>.

See Also:
LOG ON
LOG OFF

LOG
(Enables Logging Tasks)

The command 'LOG ON' enables a logging task (i.e., turns it on.)

The command 'LOG OFF' disables a logging task (i.e., turns it off.)

MOUNT
(Mounting Disks)

The disk drive units are known as directory devices. This means that HDOS maintains a directory for the disks that are mounted on the drives. The operating system also uses a table which "maps" the location of every file on the disk. For the sake of efficiency, parts of the directory and map tables (GRT.SYS) are kept in memory while HDOS is running. When a disk is removed from the system, or dismounted, these directory and table segments must be written from memory back onto the disk. If you add or delete files, you must dismount in order to reflect the most recent changes in the status of various files. But even if you change nothing on the disk, the directory and table segments must be written back to the disk (GRT.SYS) from memory.

MOUNT

(Mounting Disks)(Cont)

CAUTION

If you remove a disk from a drive without first dismounting it, and attempt to install a different disk in that drive, the second disk will NOT BE DESTROYED by HDOS 3.02, as it would be with HDOS 2.0. Instead, an error message will be issued: "? 02 A volume is presently MOUNted on the device." The operating system will refuse to mount your new disk. You may be inconvenienced, but you cannot help but respect the built-in protection provided by 3.02.

In order to repair a disk that has been damaged in this fashion, it requires not only a suitable program, but experience in the details of the HDOS disk structure. Therefore, to save a lot of grief, you MUST use the MOUNT and DISMOUNT commands when you insert and remove the disks.

Use the MOUNT command when you install a disk. Only initialized disks may be mounted. The basic requirements are that there be a disk in the drive, and that the drive door is closed. In HDOS 3.02, there are several methods to mount a disk:

TABLE 1: Options for Mounting Disks Under HDOS 3.02

MOUNTING OPTION	PRIMARY DRIVES	SECONDARY DRIVES
HDOS 2.0 Style of Mounting	MOUNT SY1:<RTN>	MOUNT DK0:<RTN>
HDOS 3.02 New Style	**********	**********
Single-Mount:	M1<RTN>	;M0<RTN>
Multiple-Mount:	MM<RTN>	;MM<RTN>
Quiet-Mount Many Disks:	QM<RTN>	;QM<RTN>

These commands inform HDOS that there is a disk installed in one or more drives. HDOS reads the table and directory segments (GRT.SYS) from the disk(s) into memory in preparation for your file manipulation commands. HDOS will not recognize any commands dealing with the drive(s) until the disk(s) are properly mounted.

See Also:
PA[th] text
PA[th]~

PATH or PA[th]

The PATH command is designed for computer systems with a hard drive. It will also work with computer systems that have high capacity disk drives such as the H37 and H47.

The PATH command is used to Set, display, or clear the system path string. No syntax checking is performed by this command. Any errors will not show up until the path is accessed by SYSCMD. It will issue the phrase, "Check Path," show you the offending characters, and give the appropriate error message.

You may define your PATH string in several ways. The delimiters are the SPACE, the TAB, the COMMA, the COLON, or the SEMICOLON. Therefore, the following examples are all equivalent:

```
SY0: SY1: SY2:   SY0, SY1, SY2   SY0SY1SY2
SY0; SY1; SY2;   SY0 SY1 SY2
```

The command 'PA[th]...TEXT<RTN>' sets the system path. NOTE: The PATH command is executed just like any other command.

To clear the system path, type: 'PA[th]~<RTN>'. (NOTE: The punctuation mark between "PA[th]" and "<RTN>" is a tilde.)

.....

See Also:
PRN LP:
PRN LPn:
PR[int]^Filename.Ext
PCn

PRN (Manipulates Printer)

The command 'PRN<RTN>' shows the current printer driver name and unit.

The command 'PRN LPn:' sets the current loaded printer driver to the default unit number. For example: LP0:.

The command 'PRN LPn:' sets the current loaded printer driver to the desired unit number.

The command 'PR[int]^filename.ext' sends the specified file to the line printer, using the current loaded printer driver.

The command 'PCn' prints the disk catalog of primary device n. If the command is preceded by a semicolon (;), it prints a disk catalog of secondary device n.

.....

See Also:
PRO[mpt] text
PRO[mpt]~

PROMPT or PRO[mpt]

The command 'PRO[mpt]<RTN>' shows the system prompt.

The command 'PRO[mpt]TEXT<RTN>' sets the system prompt. For example: when used within the AUTOEXEC.BAT file, type: PRO JOEY+>

The command 'PRO[mpt]~<RTN>' clears the system prompt.
NOTE: The punctuation mark after PRO[mpt]~ is a tilde.

RENAME or REN
(Renaming Files)

This command requires only the letters REN to run. The letters inside the brackets are optional. Do not type the brackets.

The 'REN[ame]' command is used to change the name of any file except essential system files and other protected files. System files cannot be renamed because they have the W and L flags set. For an explanation of flags, see the "FLAGS" section of this chapter. The general format for the REN[ame] command is:

'REN[ame] DVn:NEWNAME.EXT=DVn:OLDNAME.EXT<RTN>'

The DVn: portion of both filenames must be the same, as in the following example:

'REN[ame] SY1:TAX.DAT=SY1:INCOM79.DAT<RTN>'

You may omit the DVn: portion of both file names if the file you want to rename is stored on the disk in SY0:.

As an example, you can rename the file that you created in the previous section, TESTFILE.DOC, by typing:

'REN[ame] TEST1.DOC=TESTFILE.DOC<RTN>'

RESET or R^DVn:

This command requires only the letter R to run, (i.e., R^[eset]). The letters inside the brackets are optional. Do not type the brackets.

The R[eset] command (i.e., R^[eset]DVn:) first dismounts the disk that is in the drive, instructs you to remove the disk from the drive, and then instructs you to insert the new disk. There is one caution with respect to this command: before you remove the disk, insure that the

RESET or R DVn: (Cont)

RESET command has been given. It is easy if you are in a hurry to skip the command and pull the disk. HDOS 3.02 will not allow you to insert a new disk. Instead, it will give you the following error message:

?02 A volume is presently mounted on the device.

Example of using the RESET command: 'R1^<RTN>'

This command may be used to reset SY1: or SY2:

and ';R^<RTN>'

resets the secondary drives, DK0: or DK1: or DK2:.

.....

See Also: Arguments RUN FNAME[.ABS]

(Running Programs)

The format of the RUN command is:

'RUN DVn:FNAME.EXT<RTN>'

When you initialized your disks in Chapter One, "System Set-Up Procedures," you were instructed to type "INIT." Had you desired, you could have typed:

'RUN SY0:INIT.ABS<RTN>'

HDOS recognizes the contents of any file with the .ABS extension as an executable machine-code program. If you type only the FNAME portion of the filename while in the command mode, HDOS assumes that you mean "RUN SY0:FNAME.EXT." Thus, to run BASIC, simply type:

'BASIC<RTN>' for Benton Harbor BASIC
'MBASIC<RTN>' for Microsoft BASIC

If you tried either preceding example, first type BYE<RTN>. To exit B.H. BASIC, type:'Y<RTN>' when B.H. BASIC prints "Are you sure?" To exit from MBASIC, type 'SYSTEM<RTN>'. This will exit you from BASIC to the HDOS command mode.

NOTE: In calling up a program, you do not need to use the command, RUN. In HDOS the RUN is understood for any .ABS program.

Refer to the appropriate section of your software manual for more information about system resources such as BASIC.

If you wish to run a program with the .ABS extension from a disk mounted on a drive other than SY0:, you would type:

RUN (Cont)

```
'RUN DVn:FNAME<RTN>'
```

or

```
'DVn:FNAME<RTN>'
```

Thus, if you wanted to run BASIC from the disk in drive SY2:, you would enter:

```
'SY2:BASIC<RTN>'
```

All of the following formats are valid for running a program that has the .ABS extension:

```
'FNAME<RTN>'
'FNAME.ABS<RTN>'
'RUN DVn:FNAME<RTN>'
'RUN DVn:FNAME.ABS<RTN>'
```

```
'BASIC<RTN>'              \
'BASIC.ABS<RTN>'           \  All of these commands
'RUN BASIC<RTN>'            |  are equivalent.
'RUN SY0:BASIC<RTN>'       /
'RUN SY0:BASIC.ABS<RTN>' /
```

Some programs are not "interactive," (i.e., they are not designed to ask you questions and wait for your responses to act). This type of program wants all the information it needs to be supplied at the time you run it. This is done by adding "arguments" after the program name. The program "SET.ABS" is an example of such a program. If you just give the command "SET<RTN>," or "RUN SET.ABS<RTN>," the SET program will complain that you didn't provide the data it needs. The following examples are equivalent:

```
'SET^SY:^STEP 20<RTN>'
'SET.ABS^SY:^STEP 20<RTN>'
'RUN^SET^SY:^STEP 20<RTN>'
'RUN^SY0:SET^SY:^STEP 20<RTN>'
'RUN^SY0:SET.ABS^SY:^STEP 20<RTN>'
```

Refer to the SET section of chapters 2 and 3 for more information about the SET command and SET options.

See Also: TIME or TI[me]
TI[me]^/ --------------
TI[me] hh:mmm:ss (Manipulates System Time)

The command 'TI[me]' shows system time.
The command 'TI[me]^/' shows system time continuously.
The command 'TI[me]' hh:mmm:ss allows the user to set the system time.

See Also: TYPE or T[ype]
.TYPE or .T[ype] --------------
LIST or L[ist] (Listing the Contents of a File)

The command requires only the letter T to run. The letters inside the brackets are optional. Do not type the brackets.

This most basic system command allows you to examine the contents of a file on the console terminal. Some files contain text in ASCII, which is meaningful when listed. Such files usually have a .BAS or .DOC extension. Other files are written in binary code, and have no meaning when listed on the console. These files have .ABS or .DVD extensions.

Another feature is provided when using "TYPE." If you first type a . (keyboard period) followed by the T[ype] command, the screen fills 24 lines with the file and then stops to allow you to read the contents. To advance the file one line, just hit the SCROLL key. To advance the file one screen, hit SHIFT-SCROLL.

Example: '.T^SY1:QUERY.DOC<RTN>'.

In HDOS 3.02 there are two files that contain meaningful information. These files are: SYSHELP.DOC, which provides help for the SYSCMD commands, and HELP., which provides help for the PIP commands. To obtain information on any command, just TYPE either of these files, and then control them by the use of the SCROLL key.

See Also: UNLOAD or UNL[oad]
UNL[oad]^* ------------------
(Unloads a specific device driver)

The UNL[oad] command will unload a specific device driver. For example: 'UNL[oad] LP:<RTN>'.

The 'UNL[oad]^*' command will unload all device drivers on disk. Alternately, you may unload the device driver(s) of your choice. If the system has too many device drivers, this command will free up disk space to allow you to run application programs. HDOS 3.02 provides for having nearly unlimited numbers of device drivers on disk, while HDOS 2.0 is limited to only 5 at one time.

See Also:
U[ser]n
PU[ser]FN.EXT=n
RU[ser]FN.EXT
RU[ser]FN.EXT=n

USER or U[ser]
(Refers to User Areas)

(1) The command 'U[ser]' displays the active user areas.

(2) The command 'U[ser]n' sets the active user to be user area n. The term "n" can stand for any number between 0 and 7.

(3) The command 'PU[user]FN.EXT=n' puts selected files into user areas.

(4) The command 'RU[ser]Filename.Extension' removes all of the files from user areas and places them into user area zero.

(5) The command 'RU[ser]Filename.Extension=n' removes certain files from specified user areas.

.....

See Also:
ID

VERSION or VER[sion]
(Shows Version Data)

The VER[sion] command shows brief SYSCMD version data. Example: 'VER[sion]<RTN>'.

The ID command shows extended version data. Example: 'ID<RTN>'.

.....

INTRODUCTION TO THE PIP/PLUS COOKBOOK

HDOS 3.02 uses a set of system programs called PIP/Plus. PIP is an acronym for Peripheral Interchange Program. Since the file in which PIP/Plus resides has the .ABS extension, you may assume by convention that it contains an executable machine-code program. You can therefore enter PIP/Plus by simply typing 'PIP<RTN>' from the command mode. The result will be a prompt as follows:

```
'PIP<RTN>'
"P:"
```

The P: prompt will be displayed at the left margin of the system console whenever the PIP/Plus program is awaiting input.

To exit PIP/Plus, type: 'CTRL-D'.

The legal PIP/Plus commands are somewhat different from "normal" system commands. The general form is the COPY command, where a "destination" is followed by an equal sign, which is then followed by one or more "source" specifications:

```
"P:"'DVn:DESTINATION.EXT=DVn:SOURCE.EXT<RTN>'
```

As an example:

```
"P:"'SY1:TEMP2.ABS=SY2:BASIC.ABS<RTN>'
"1 FILE COPIED"
```

This example has the same effect as the COPY command. In this case, the destination is SY1:TEMP2.ABS, and the source is SY2:BASIC.ABS.

If you do not specify a destination file, PIP/Plus will assume that you refer to TT: and will copy the contents of the file onto the terminal. Each of the following commands has exactly the same result:

```
"P:"'BASIC.ABS"
"P:"'TT:=BASIC.ABS'
"P:"'TT:=SY0:BASIC.ABS'
'TYPE BASIC.ABS'
'COPY TT:=SY0:BASIC.ABS'
```

If you attempt any of these examples, the result will be a listing of binary "garbage." Hit 'CTRL-C' to cease output to the terminal. SY0:BASIC.ABS contains a machine-code program, rather than text written in ASCII.

It is possible to catalog, rename, and delete files within PIP/Plus. These functions are accomplished by means of a "switch," which is either typed after a filename or names, typed after a disk drive name, or typed by itself in response to the P: prompt.

Within the PIP/Plus section of HDOS 3.02 Cookbook, related commands are grouped together in as near alphabetical order as possible. This will help the user to select the most command.

PIP/PLUS
Peripheral Interchange Program

[1] The following PIP/Plus switches provide a variety of disk directory listings: [NOTE: letters inside the brackets may be optionally typed.]

/ALL[ocate]	Gives a catalog listing of disk allocation; not filesize.
/B[rief]	Gives a "brief" catalog listing of non-system files. This listing has multiple columns. Also see "W[ide].
/F[ull]	Gives a catalog listing of non-system files. Also provides the number of sectors allocated to files and other details.
/FL[ag]:f	Gives a catalog listing with specified flags.
/NOF[lag]:f	Gives a catalog listing without specified flags.
/G[roup]	Gives a catalog listing of specified files.
/L[ist]	Gives a catalog listing of non-system files.
/M[inimum]	Gives a minimum directory listing: one-column list.
/P:nn	Paginates directory listing (default=55 files per page).
/REV[erse]	Sorts in descending order (default=ascending order).
/S[ystem]	Gives a catalog listing including system files.
/W[ide]	Same as brief.

[2] The following PIP/Plus switches may be used for copying, deleting, renaming or to cataloging files: [Note: Letters within the brackets may be optionally typed.]

/AC[cess]	Use access date instead of creation date.
/AFT[er]	Includes files created after dd-mmm-yy.
/AGE:n	Includes files n days old or older.
/ATT:f	Set DESTINATION flags on Copy (default=source flags).
/BEF[ore]	Includes files created before dd-mm-yy (default today).
/C[ontig]	Copy files in the Contiguous mode.
/CLR	Clears flags on specified files.
/COU:n	Includes files with access count <=n (default=1).
/NOC:n	Includes files with access count <=n (default=1).
/CRC	Performs a checksum on the specified files.
/CUR[rent]	Includes files created on dd-mmm-yy (default today).
/D[ate]	Uses today's date on copy.
/DEL[ete]	Deletes files.
/DIS[mount]	Dismounts disks.
/FOR[ce]	Overrides W and D flags.
/ID	Displays data about PIP/Plus.
/K[eep]	Keeps DEST file flags on copy (use with FOR[ce]).
/PUT	Puts specified files into user areas.
/Q[uery]	Include ONLY user-selected files.
/R[ename]	Renames specified filenames.
/REM[ove]	Removes specified files from user areas.
/RES[et]	Resets a specified disk drive.
/SA[fe]	Ask before overwriting an existing file.
/SET	Sets flags on specified files.
/SO[rt]	Sort files for destination usage (default=NE).
/SU[press]	Suppresses trailing messages, headers, and status line.
/USR	Opens an active user area.
/V[erify]	Compares CRC of SOURCE FILES and DESTINATION files.
/VERS[ion]	Displays information about PIP/Plus.

[Disk Directories with Date Data]

/ACCESS ..... or ..... /AC[cess]
/AFTER dd-mmm-yy ..... or ..... /AFT[er]
/BEFORE dd-mmm-yy ..... or ..... /BEF[ore]
/CURRENT dd-mmm-yy ..... or ..... /CUR[rent]
/AGE:n
/COUNT nn: ..... or ..... /COU[nt]
/NOCOUNT:nn ..... or ..... /NOCOUNT

(1) The switch /ACCESS may be used to obtain a disk directory which includes access dates, instead of creation dates.

(2) The switch /AFTER dd-mmm-yy may be used to obtain a disk directory which includes files created after dd-mm-yy.

(3) The switch /BEFORE dd-mmm-yy includes files created before dd-mmm-yy. The default is today.

(4) The switch /AGE:n may be used to obtain a disk directory which includes files n days old or older.

(5) The switch /COUNT nn: includes files that have been accessed the number of times specified or more. In this case, you are asking for files that have been accessed at least once.

(6) The switch /NOCOUNT nn: includes files that have been accessed less than the number of times specified. In this case, you are asking for files that have never been accessed.

NOTE: These switches may also be used with COPY, DELETE, AND RENAME.

.....

[Detailed Disk Directories]

/ALLOCATE ..... or ..... /ALL[ocate]
/FULL ..... or ..... /F[ull]

(1) The /ALLOCATE switch provides a disk directory listing which displays the disk filespace allocation, not the actual file size.

(2) The /FULL switch provides disk filespace allocation as well as the last date accessed, and the number of times accessed.

.....

[Brief Disk Directories]

/BRIEF ..... or ..... /B[rief]
or ..... /B/S
/WIDE ..... or ..... /W[ide]
/COL:nn

(1) The /BRIEF and /WIDE switches provides a wide directory. These commands produce a 5-column directory of all non-system files.

(2) The /COL:nn switch is used with /B to specify how many columns are shown on a page.

.....

[Controls Directory Flags]

/FLAG:f ..... or ..... /FL[ag]:f
/NOFLAG:f ..... or ..... /NOFL[ag]:f

You can obtain a disk directory either with or without the specified flags. The command P:SY1:/FL:W<RTN> yields a directory of all of the files on disk drive SY1: which bear the W flag.

[Catalogs Non-System Files]

/L

The /L switch produces a directory listing of non-system files. The /L switch is the same as the CAT command in SYSCMD/Plus. The examples that follow are valid uses of the /L switch:

```
"P:"'SY1:/L<RTN>
"P:"'SY1:EDIT.ABS/L<RTN>'
```

NOTE: If you want a catalog of non-system files from a disk mounted in a drive other than SY0:, you must specify a device name before you type /LIST.

[Catalogs System and Non-System Files]

/L/S

The L/S switch enables you to list all the files in the system exactly like the CAT/S command in SYSCMD/Plus. The /S in both the CAT/S command and the /L/S switch is a modifier which causes files which have the 'S' flag set to be included in the listing, along with those files which you have copied or created. /S is used in PIP/Plus with /L just as it is used in the command mode with CAT.

For example:

```
"P:"'AT:=HDOS30.SYS/L/S<RTN>
```

Note that a destination, AT:, was specified, so that this listing was printed on the alternate terminal, instead of the console terminal.

[Lists Minimum Catalog]

/M

The /M switch provides a 'quick and dirty' catalog listing with all the non-system files listed in one-column. The advantage of this is quick access to file information.

[Paginates the Directory Listing]

/P:nn

The /P:nn switch paginates the directory listing. The nn stands for the number of files you want to see on one page. This is useful for those with either hard-drives or 80-track drives. The default is 55 files per page.

.....

[Controls the Files One At A Time]

/QUERY ..... or ..... /Q[uery]

The /Q[uery] switch can be used when you perform the following tasks on a number of files: CAT, COPY, DELETE, RENAME, or SYSGEN *.*/Q. It will only allow the computer to print one file, and when that file comes up on the screen, you are expected to take the necessary action. Your response to the computer is to type a Y for yes and a N for no. After you type your response, the computer goes to the next file.

.....

[Determines FGN, LGN, and LSI]

/GROUP ..... or ..... /G[roup]

This switch permits an advanced HDOS user to determine the physical location on the surface of the disk where one or more files reside. This data includes: FGN -- first group number, LGN -- last group number, and and LSI -- last sector index. This may be particularly helpful when modifying a file using a direct track and sector access method (e.g., Crash, Superzap, UDump, etc).

.....

[Using LP: with PIP/Plus]

You can print out catalog listings produced by /ALL /B, /BS, /F, /L, /L/S, and /W on a line printer by means of PIP. For example, to obtain a /L/S listing for drive SY0:, type:

"P:"'LP:=/L/S<RTN>'

Or, to obtain the same listing for a disk drive other than SY0:, type:

"P:"'LP:=DVn:/L/S<RTN>"

.....

[Copying Files Using PIP/Plus]

There is no special command for copying files in PIP/Plus; however the procedure is as follows:

"P:"DVn:Destination.Ext=DVn:Source.Ext<RTN>'

or

"P:"'1:Filter.ABS=2:Filter.ABS<RTN>'

Many people shy away from using PIP to copy files to a given device. However, as has been demonstrated, the procedure is relatively simple.

.....

[Sets the Destination Flags on a Copy]

/ATT:f

This switch sets the DESTINATION flags on a copy. The default is Set Source Flags. The lower case f indicates which flags you wish to set.

.....

[Copies Files in the Contiguous Mode]

/CONTIG ..... or ..... /C[ontig]

This switch copies files in the contiguous mode. All of the HDOS 3.02 system files are contiguous files. Contiguous means to copy files with one sector lined up one after another, instead of copying at random. You could use this flag to obtain faster disk access for your programs.

.....

[Uses Today's Date When Copying Files]

/DATE ..... or ..... /D[ate]

Uses today's date when copying files.

.....

[Manipulates Flags]

/CLR
/SET

(1) The switch /SET sets flags on specified files. At least one source file must be specified. Wildcards may be used in the source filename or extension. One or more flags must be set. The C flag is set automatically by HDOS during the SYSGEN operation. Example to set a flag:

"P:"'SY1:QUERY.DOC/SET:W<RTN>"

This sets the W flag to write-protect the file, QUERY.DOC.

[Manipulates Flags](Cont)

/CLR
/SET

(2) The switch /CLR clears flags on specified files. At least one source file must be specified. Wildcards may be used in the source filename or extension. Exception: the C flag, which is set automatically by HDOS during the SYSGEN operation. Example to clear a flag:

```
"P:"'SY1:QUERY.DOC/CLR:W<RTN>'
```

[Overrides the D, L, and W Flags]

/FORCE ..... or ..... /FOR[ce]
/KEEP ..... or ..... /K[eep]

(1) The /FORCE switch overrides the D, L, and W flags when performing COPY, DELETE, and RENAME. This is the only way to overwrite, delete, or rename the files to which these flags are set.
(2) The /KEEP switch keeps DESTINATION flags on the copy.

NOTE: Use /KEEP only with /FORCE.

[Cyclic Redundancy Check]

/CRC

The switch /CRC performs a CRC checksum on specified files. Wildcards may be used in the source filename or extension. Omitting the destination will cause the destination to default to TT:. Wildcards are not authorized in the destination filename.

[Deletes Files]

/DEL (Deleting Files)

The /DEL switch, like the DELETE command can be dangerous if you misuse it. It is difficult to recover a file that is deleted with this command, since you have to utilize a disk editor to look at the binary code of the disk itself. The format is as follows:

```
"P:"'NEWFILE.ABS/DEL<RTN>'
```

You may want to delete some files which have the S flag set, such as unnecessary device drivers. To do this, you will have to add the /S switch after the filename. This switch makes the files "visible" to PIP/Plus, which usually ignores any file that has the S flag set. For example:

```
"P:"'ATH85.DVD/S/DEL<RTN>'
```

[Displays Version Data about PIP/Plus]

/ID
/VERSION ..... or ..... /VERS[ion]

Displays version information about PIP/Plus including version, revision, date assembled, H19 flag, SYSOP flag, Z80 flag, and whether or not user areas are supported. In addition, it shows FWA, LWA, buffer address, and buffer size in sectors.
.....

[Mounting and Dismounting Disks]

/MOUNT ..... or ..... /MOU
/DISMOUNT ..... or ..... /DIS

The /MOU and /DIS switches are used in the same manner as MOUNT and DISMOUNT commands in SYSCMD. They allow you to change the disks in the drives. You MUST specify which device you want mounted or dismounted, even if you want to mount or dismount SY0:. For example:

```
"P:"'SY1:/DIS<RTN>'
```

results in:

```
"Volume 090, Dismounted from SY1:
 Label: BASIC Data Files"
```

Remounting SY1:

```
"P:"'SY1:/MOU<RTN>'
"Volume 082, Mounted on SY1:
 Label: Assembly Programs"
```

If you plan to DISMOUNT the system volume using /DIS, you will have to LOAD any devices you wish to use before executing PIP/Plus.

A sample of the LOAD command used in this context is as follows:

```
'L[oad] LP:<RTN>'

'L[oad] DK:<RTN>'

'PIP:<RTN>'

"P:"'SY1:/MOU<RTN>'
"Volume 090, Mounted on SY1:
 Label: BASIC Data Files"
```

[Mounting and Dismounting Disks](Cont)

```
"P:"'SY0:/DIS<RTN>'
"Volume 200: Dismounted from SY0:
 Label: Games Disk"

"P:"'LP:=SY1:/L/S<RTN>'

"P:"'TT:=DK1:/L/S<RTN>'
```

You do not have to LOAD devices SY: or TT:. Within HDOS 3.0, TT: they are already loaded, since they now are system files. Also, if the alternate device, DKn: has a disk mounted in any of its units, then it won't be necessary to load DK: because HDOS has already put the DK.DVD device driver into memory so that it would know how to go about mounting DK0:, DK1:, or DK2:.

.....

[Renames Files]

/RENAME ..... or ..... /REN[ame]

The /RENAME switch is used in the same manner as the RENAME command in the command mode. For example:

```
"P:"'NEWFILE.ABS=TEMP2.ABS/REN<RTN>'
```

The /R[ename] switch cannot be used to rename essential system files, or any file that has the "W" flag set, such as HDOS30.SYS. It will not work if the source file does not exist, or if the destination file is already present. However, if you do try to rename an essential system file, or try to specify a nonexistent source file or a pre-existing destination file, nothing will be damaged. HDOS will simply print an error message and await further input.

In case you want to RENAME a text or binary file that has the W flag set, you should use the switch /FOR[ce]. For details, refer to the description provided.

.....

[Switching Disks]

/RES ..... or ..... /RESET

The /RES switch will both mount and dismount a disk. For example, if You want to change the disk in drive DK1:

```
"P:"'DK1:/RES<RTN>'
"VOLUME 010, DISMOUNTED FROM DK1:
 LABEL: WORKING DISK"

"Please Replace the Diskette in Drive DK1:"
```

[Switching Disks](Cont)

When the message "Please Replace the Diskette in Drive DK1:" is displayed, remove the disk that is currently in the drive and replace it with the disk you want mounted. The /RES switch will automatically continue the mounting operation when you close the drive door.

You can also use the /RES switch to reset SY0:. This has the same effect as using /DIS to dismount SY0: and then /MOU to mount a new disk in SY0:. As with SY0:/DK0:, you are using PIP as a stand-alone program and you are therefore making HDOS inactive. Again, you must load any devices you want to use before resetting SY0:. When you exit PIP after using SY0:/RES, you will normally enter the boot routine. If you issue the /RES command for a drive that has no disk MOUNTed in it, HDOS will "know" that there is no need to "DISMOUNT" any disk first. In such a case, /RES will have exactly the same effect as /MOU, normally to mount a disk in that drive.

.....

[Queries the Operator Prior to Overwriting A File]

/SAFE ..... or ..... /SA[fe]

The /SA[fe] switch queries the computer user before overwriting an existing file.

.....

[Sorts Files in Alphabetical Order]

/SORT ..... or ...../SO[rt]

The /SO[rt] switch sorts files for DESTINATION use. The default is NAME or EXTENSION.

.....

[Supresses]

/SU

The /SU switch supresses trailing messages, headers, and status line.

.....

[Manipulates Files in User Areas]

/USR
/PUTUSER ..... or ..... /PUT[user]
/REMUSER ..... or ..... /REM[user]

HDOS 3.02 has the attribute of being able to utilize eight user areas, (i.e., 0 through 7). Each user area resembles a discrete disk to the operating system. Thus, user areas enable related files to be listed together, so as to make storing and file-handling easier. User area zero is the default if no argument is given.

[Manipulates Files in User Areas](Cont)

(1) The /USR switch sets the active user area. User area zero is the default if no argument is given. For example:

"P:"'SY1:USR:1<RTN>"

Opens user area 1 on SY1: to receive files. No files are sent.

(2) The /PUT switch enables one to send specified files into user areas from one disk to another. It is also possible to send a file into a different user area on the source disk.

At least one source file must be specified. Wildcards may be used in the source filename or extension. User area zero is invalid, as all files reside in user area zero. One or more user areas must be specified. For example:

"P:"'SY1:QUERY.DOC/PUT:1<RTN>'

Puts the file, QUERY.DOC into SY1:, user area 1.

(3) The /REM[ove] switch enables one to remove specified files from specified user areas. At least one source file must be specified. Wildcards may be used in the source filename or extension. User area zero is invalid since all files normally reside in user area zero. Example to remove a file from a user area:

"P:"'SY1:QUERY.DOC/REM:1<RTN>'

This removes the file, QUERY.DOC from SY1:, user area 1.

CAUTION: When working with user areas, be careful not to duplicate file names on the same disk, as the older version will be deleted if this situation occurs.

Queries User Before Over-writing An Existing File

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PIP/Plus - SUMMARY

After you have become accustomed to PIP/Plus, you will probably find its "shorthand" notation more convenient than the command mode. To further expedite your operations with PIP/Plus shorthand, you can type PIP in the command mode, followed by a PIP/Plus switch or series of switches. Thus:

'PIP^/L/S<RTN>'

PIP/Plus - SUMMARY (Cont)

has the same effect as

```
'PIP<RTN>'
"P:"'/L/S'
```

When you type PIP at the command mode level followed by a command line, PIP/Plus will execute your command line and then return you to HDOS. You will therefore not be able to use the PIP/Plus command SY0:/RES except within PIP/Plus. The command:

```
'PIP^SY0:/RES<RTN>'
```

will cause PIP/Plus to reset SY0: and then immediately exit PIP/Plus.

The various file functions of copying, renaming, and so on are not actually duplicated between PIP/Plus and the system command mode, as it may seem. When you type a command, the system first decodes it, using a program which resides in the file SY0:SYSCMD.SYS. SYSCMD.SYS contains certain "built-in" commands, and if the command you type is one of these, such as STAT, VER, and DATE, SYSCMD.SYS executes it. Otherwise, SYSCMD.SYS checks to ascertain whether the command is a "transient" command - that is, a command which is a program residing in a file, such as SET.ABS and ONECOPY.ABS. All other transient commands, such as COPY, RENAME, etc, reside in PIP.ABS.

If the command you have typed is neither a built-in command nor a transient command, SYSCMD.SYS prints an error message, which it finds on SY0:ERRORMSG.SYS. If your command is a transient command, then SYSCMD.SYS passes it on to PIP for execution. PIP/Plus normally resides in a file called SY0:PIP.ABS. In order to execute any transient command, HDOS reads SY0:PIP.ABS into your system's memory. The command is then passed on to PIP/Plus, which uses other system resources, such as device drivers, to execute the command. Thus, even though you type COPY in the command mode level of HDOS, it is PIP/Plus that actually performs the copy operation.

If you have only one or two file operations to perform, you will probably find it more convenient to use the command mode forms of the commands. For more extensive file manipulation, it will be faster to run PIP.ABS and command PIP/Plus directly.

Remember that you can exit from PIP back to the command mode by typing 'CTRL-D'. You can also obtain a listing of PIP commands by typing HELP. from the command mode. This causes the file HELP. to be listed on your terminal.

****

APPENDIX 6-A: MOST USED HDOS 3.02 SYSTEM COMMANDS

CF filename(s)=flags	Clear selected flags from listed files
CO DVn:=source	Copy source DVn: to destination DVn:. (SY0: is destination in this example)
CO SY2:READ.DOC=SY1:READ.DOC .	Copy to SY2: from SY1: a file, READ.DOC
DEL DVn: or ..... DEL SY1:*.*	Delete all files on DVn:. Gives a verification query first
DEL SY1:JILL.001	Deletes file JILL.001 on drive SY1:
Dn	Dismount unit n of primary drive chain
D1	Dismount unit SY1:
HA (Halt)	Runs "Shutdown.BAT" first. Then shuts down system same as BYE.
MD	Multi-Dismount primary drives except for SY0:
Mn	Mount primary device DVn:
M1	Mount drive SY1:
MM	Multi-Mount all primary drives except for SY0:
MOV DVn:=Source	Copy source filename(s) to destination; then delete source filenames if CRC okay
REN	Rename destination=source
REN	SY1:JILL.DOC=JANE.DOC
RDVn:	Reset drive DVn:
R1	Reset drive SY1:
SF filename(s)=flags	Set selected flags of listed filenames
SF JANE.DOC=C	Sets contiguous flag on file JANE.DOC
ST taskname	Start a task
T filename	Type a filename to the screen

APPENDIX 6-A: MOST USED HDOS 3.02 SYSTEM COMMANDS (Cont)

SY1:.T KAREN.LTR..... Type a file by the name of KAREN.LTR to the screen. Then place the contents in a "hold screen" configuration. This file resides on SY1:.

Un ..... Set active user (0 thru 7)

U2 ..... Set user 2

PU filename(s)=user ..... Put selected files into the selected user area you designated previously with the command: Un<RTN>

RU filename(s)=user ..... Remove selected files from the designated user area when you typed Un<RTN>

NOTES:

1. The term n, such as Un stands for a number. In this case, the number may be from 1 thru 7. Another example is: DVn:, where the expression stands for a disk drive from SY0: thru SY3:.

2. DVn: stands for a disk drive. In this case, the number may be from 1 thru 3.

3. A User is a discrete disk area where certain files may be made to reside. Each of these discrete disk areas is "stand-alone." With the the use of "user" you are permitted to copy the same filename on the disk several times, provided the files are sent to different user areas.