HP 260 Computer Systems

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UTILITIES

User's Manual

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FREQUENCY INTERFERENCE STATEMENT
(for U.S.A. only)

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

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New editions are complete revisions of the manual. Update packages, which are issued between editions, contain additional and replacement pages to be merged into the manual by the customer. The dates on the title page change only when a new edition or a new update is published. No information is incorporated into a reprinting unless it appears as a prior update; the edition does not change when an update is incorporated.

The software code printed alongside the date indicates the version level of the software product at the time the manual or update was issued. Many product updates and fixes do not require manual changes and, conversely, manual corrections may be done without accompanying product changes. Therefore, do not expect a one to one correspondence between product updates and manual updates.

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LIST OF EFFECTIVE PAGES

The List of Effective Pages gives the date of the most recent version of each page in the manual. To verify that your manual contains the most current information, check the dates printed at the bottom of each page with those listed below. The date on the bottom of each page reflects the edition or subsequent update in which that page was printed.

Effective Pages	Date
all	Sep 1986

HP 260 Utility Revision Codes

The revision code of each utility appears in the upper left corner of the screen in the form X.##.##.Y, where X.##.## indicates the currently loaded operating system, and Y indicates the revision code of the particular utility in use. This table shows the revision code for each utility that was included in the most recent releases of the Utilities Package.

Utility Name	Operating System Version	
	B.07.00	B.08.00
CONFIG	H	I
AFIG	D	E
MFIG	G	H
RFIG	H	I
TFIG	D	E
XFIG	E	F
BACKUP	G	H
BCRTST	B	C
CFORM	F	G
DBLOAD	G	H
DBMODS	D	E
DBUNLD	G	H
DUPL	H	I
EDITOR	E	F
FVBACK	H	I
INIT	I	J
LK3000	E	F
MFORM	F	G
MONADV	-	A
MONREF	-	A
PFORM	E	F
RECOVR	F	G
REPACK	C	D
ROUTIL	G	H
SCHEMA	E	F
TAPFIX	C	D
TEST	D	E
WORK	D	E
XREF	E	F

PREFACE (continued)

NOTE

Not all of the utility programs in the above table are described
in this manual. The following table shows you where to find descriptions
of those utilities that are not described in this manual.

Utility Name	Manual
CFORM	FORMS Programming Manual
MFORM	FORMS Programming Manual
PFORM	FORMS Programming Manual
DBMODS	IMAGE Programming Manual
SCHEMA	IMAGE Programming Manual
TEST	OPERATING and MANAGING Manual
WORK	SORT Programming Manual
XREF	BASIC Programming Manual

PREFACE (continued)

Description of DROMs Supplied with B.08

DROM Name	Function
EUROPE	Lexical Compares for European Characters
PACK	Pack and Unpack String Variables
IMAGE	Data Base Commands
SORT	Data Base Select and Sort
REPORT	Report Writer Statements
FORMS	Forms Interface Statements
TAPES	Cartridge Tape Drive Handler
TOOLS	Provides Supported Binaries in DROM Form
RIO	Remote Workstation Interface (2622D and 2649D)
TIO	Terminal, Printer and HP 3000 Interface
TRACE	Program Trace Capability
TRIG	Trigonometric Functions
MATRIX	Contains Matrix Commands
SPOOL	Allows Print Files to be Written to Disc and Printed
CS250	Allows Synchronous Data Communications
MEDIA	Interface to IBM 3740 and HP Interchange Discs
IMAGE2	Contains Predicate Locking Statements
TASK	Allows use of Background Tasks
IMAGEU	Contains Image Utilities
TIMER	Provides Real Time Clock
PERFM	Allows Processing of a Data File as User-supplied Input

PREFACE (continued)

Description of DROMs Supplied with B.08 (cont.)

DROM Name	Function
CTRACE	Synchronous Trace Capability
VIO	Video Input/Output
PTYPE	Printer Driver for HP 2601/2, HP 2608 and HP 9871
UPDATE	Enhancement of Current OS (Bug Fixes)
PIO	Asynchronous Workstation Interface (HP 2392, PC's)
NET260	Provides Asynchronous Networking between HP 260's
SYSRR	System Error Dump Facility
DCACHE	Provides Directory Cache Facility

Overview of Utility Programs Supplied with Your Computer System

INIT

The INIT utility is used to set up mass storage devices so that they can be used by your computer for data storage and retrieval. It is very likely that you will use INIT only once for each of your mass storage devices. This is because INIT destroys any data that exists on a mass storage device, during its creation of a new, empty directory. INIT also has a PURGE ALL option, which allows you to remove all the data from a disc quickly. Refer to Section 2 of this manual for the details of using the INIT utility.

CONFIG

The CONFIG utility allows you to set up the overall configuration of your computer system, and to change this configuration at any time. This overall configuration informs the Operating System of your computer of the communications it should expect from external devices, and also about the way you want to use the resources of your computer system. Refer to Section 3 of this manual for the details of using the CONFIG utility.

FVBACK, DUPL and BACKUP

The FVBACK, DUPL and BACKUP utilities are used to copy files from one mass storage device to another. These utilities have special application to creating and handling backups of the valuable data on your mass storage devices. Each of these utilities is specially designed to make a particular type of backup creation easy and swift. Refer to Section 4 for the details of how and when to use these utilities.

Data Base Back-up and Re-organisation

The DBSTORE and DBRESTORE statements are used to create backup copies of data bases, and also to move these copies from one mass storage device to another. These statements are specially written for data base backup.

The DBUNLD and DBLOAD utilities are used to restructure data bases, and also to try to recover data from data bases which have become corrupt.

Refer to Section 4 of this manual for the details of how and when to use these utilities and statements.

ROUTIL

The ROUTIL utility allows you to copy, purge, and convert files (the conversion is from ordinary program files to run-only files, which cannot be listed or altered). ROUTIL is especially important when you install a new Operating System on your computer system. Then it is used to copy the new system files and the new utility programs from their distribution media (cartridge tape, microfloppy or 8-inch floppy) to your system disc. Refer to Section 5 of this manual for the details of how to use ROUTIL.

MONADV

The MONADV program enables file transfer between your computer system and HP VECTRA, HP 150 and the IBM PC. MONADV interacts with the AdvanceLink 2392 or AdvanceLink file transfer software to ensure that data is transferred without error and that data is formatted properly for storage on the destination device. Refer to Section 6 of this manual for the details of transferring files between your computer system and an HP VECTRA. Refer to Section 7 of this manual for the details of transferring files between your computer system and an HP 150.

MONREF

The MONREF program enables file transfer between your computer system and HP Portable PLUS. Refer to Section 8 of this manual for the details of transferring files between your computer system and an HP Portable PLUS.

XCOPY

The XCOPY statement allows you to copy files of any type except SYST and DROM files. It is useful for copying files from one mass storage device to another. Refer to Section 9 of this manual for the details of how to use XCOPY.

TAPFIX

The TAPFIX utility provides a solution to the problem of a cartridge tape deadlock caused by improper unloading from a drive (Error 160 or 161). TAPFIX erases the contents of the buffer on the disc associated with the tape. Refer to Section 10 for the details of how to use TAPFIX.

EDITOR

The EDITOR program is used to create and modify data files that contain lines of text. The major purpose of the EDITOR is to create and modify data base definition files (SCHEMA files). Refer to Section 11 of this manual for the details of how to use the EDITOR program.

LK3000

The LK3000 utility allows you to transfer files between your computer and an HP 3000, and also to use your computer as a workstation on an HP 3000. Refer to Section 12 for the details of how to use LK3000.

REPACK

The REPACK utility rearranges files on a disc so that they are contiguous, allowing fragmented, free space to be utilized. REPACK is used only when a disc has no more free space for storage. Refer to Section 13 for the details of how to use REPACK.

BAR CODE READER

A set of five BASIC subprograms are provided to help you to use a bar code reader on your computer system. Refer to Section 14 of this manual for the details of using these subprograms.

HOW TO USE THIS MANUAL

This manual is a reference manual for the utilities that you might need to use occasionally and a self-teaching guide for the utilities that you want to use frequently. Therefore you should use the sections of this manual as separate sources of reference; they are self-contained modules. For example, if you are unfamiliar with the FVBACK utility, which provides a fast way to back up the complete contents of a fixed disc, you should first read the part of Section 4 that discusses FVBACK, and then use this section to guide you through the backup procedure.

```
NOTE
```

The UTILITIES programs are supplied with the operating systems of the following computer systems:

- all HP 250 Small Business Computer Systems

- all HP 260 Small Business Computer Systems

This manual describes the operation of the UTILITIES for the most recent version operating system of the previously mentioned computer systems. (At this edition of the UTILITIES Manual, B.08 is the most recent operating system revision for these computer systems.)

```
NOTE
```

Throughout this manual, the phrase "your computer system" is used to refer to the HP 250 and HP 260, Small Business Computer Systems; other computer systems are referenced by name or as "the remote system".

INSTALLING THE UTILITIES

When you receive your system software, the HP 260 Utilities may be distributed over more than one media.

- If the system software is supplied on cartridge tape, the utilities are provided on the tape with the operating system.

- If the system software is supplied on 3.5 inch flexible discs, most utilities are supplied on two separate discs (labeled "UTILITY1" and "UTILITY2"). However, the ROUTIL utility and the CONFIG utility are supplied on the flexible disc labeled "SYSTEM" (which also contains the operating system).

- If the system software is supplied on 8 inch flexible discs, most utilities are supplied on a single flexible disc labeled "UTILITY". However, the CONFIG and the TEST utilities are supplied on the flexible disc labeled "SYSTEM" (which also contains the operating system).

COPYING THE UTILITIES TO A FIXED DISC

Although the utilities can be run from the removable media on which they are supplied, they can be run and accessed more quickly if they are stored on a fixed disc. To copy the utilities to a fixed disc, the disc must first be formatted in the HP standard format; if the disc has not yet been initialized by the HP 260, you must execute the INIT utility to initialize and format the disc. The INIT utility is supplied on the 3.5 inch flexible disc labeled "UTILITY1", the 8 inch flexible disc labeled "UTILITY" and the cartridge tape containing the system software.

There are two ways in which you might receive a new set of utilities for your computer system:

- if you have bought a new computer

- if you have received a new version of the Operating System for your computer (either as part of a software update contract, or as a direct purchase)

If you have bought a new computer, you will have received a manual titled "Installing Your HP 260 Series 30 And Series 40". That manual contains detailed instructions on how to set up your new computer so that it is ready for use. These instructions include the copying of all the utilities from their distribution media (cartridge tape, microfloppies or 8-inch floppy) to a fixed disc.

If you have received an Operating System update, refer to the "Communicator 260" for the details of how to update the operating system and the set of utility programs.

THE INIT PROGRAM

The INIT program is a run-only BASIC language utility which tests media for defective tracks, establishes physical records, and creates both main and spare file directories. To run the program, first be sure that the medium containing utilities is on-line. Then execute a command of the following form:

> RUN "INIT[volume spec]"

The initial menu is:

```
                    INITIALIZATION UTILITY




INITIALIZE          - Tests the disc medium and prepares the medium
                      for use by the HP260.

PURGE ALL           - Eliminates all files currently stored on
                      the specified medium.

EXIT PROGRAM        - Terminates program.




Please select a function
```

INIT- IALIZE				PURGE ALL			EXIT PROGRAM

To initialize a blank medium, first press the **INITIALIZE** softkey. The display now indicates the mass storage devices which are on-line; "unavailable" indicates an empty or busy drive; "uninitialized" indicates a blank medium.

Initialize

Press the appropriate softkey to select the medium to be initialized. The next menu will be similar to one of the following. The options available for the initialization of the different types of mass storage device are described after the following sample screens.

Flexible Disc

```
                        INITIALIZATION UTILITY
                             INITIALIZE

Selected device is MICRODISC :A2,2,1

Media will be initialized with Interleave = 2 with standard format

INTERLEAVE      - Allows you to specify the
                  number of revolutions required to
                  read a track of information
                  (see UTILITIES manual.)

DIRECTORY       - Changes directory capacity
                  (see UTILITIES manual.)



────────────────────────────────────────────────────────────────
Please press CONTINUE to proceed


┌──────────┬───┬───┬───┬──┬────────┬─────────┬──┬──────┐
│ CONTINUE │   │   │   │  │ INTER- │DIRECTORY│  │ EXIT │
│          │   │   │   │  │ LEAVE  │  1:144  │  │      │
└──────────┴───┴───┴───┴──┴────────┴─────────┴──┴──────┘
```

7946A Disc

```
┌────────────────────────────────────────────────────────────────────────┐
│                        INITIALIZATION UTILITY                            │
│                             INITIALIZE                                   │
│                                                                          │
│ Selected device is   7945/46   :U2,5,0                                   │
│                                                                          │
│ Media will be initialized with Interleave = 1 with standard format       │
│                                                                          │
│                                                                          │
│ DIRECTORY       - Changes directory capacity                             │
│                   (see UTILITIES manual.)                                │
│                                                                          │
│                                                                          │
│                                                                          │
│                                                                          │
│                                                                          │
│                                                                          │
├──────────────────────────────────────────────────────────────────────  │
│                                                                          │
│ Please press CONTINUE to proceed                                         │
│                                                                          │
│                                                                          │
├──────────┬───────┬───────┬───────┬───┬───────────┬───────┬──────────────┤
│ CONTINUE │       │       │       │ │ │ DIRECTORY │       │ EXIT         │
│          │       │       │       │ │ │   9:3056  │       │              │
└──────────┴───────┴───────┴───────┴───┴───────────┴───────┴──────────────┘
```

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                         INITIALIZATION UTILITY                                │
│                              INITIALIZE                                       │
│                                                                               │
│ Selected device is CTD :K2,5,1                                                │
│                                                                               │
│ Media will be initialized with standard format                               │
│                                                                               │
│ CHANGE FORMAT - Specifies the media format used                              │
│                    (see UTILITIES manual.)                                    │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│───────────────────────────────────────────────────────────────────────────  │
│                                                                               │
│ Please press CONTINUE to proceed                                             │
│                                                                               │
│                                                                               │
│────────────────────────────────────────────────────────────────────────────│
│ CONTINUE │      │      │ CHANGE ││      │      │      │ EXIT │               │
│          │      │      │ FORMAT ││      │      │      │      │               │
└─────────────────────────────────────────────────────────────────────────────┘
```

Change Format

When you initialize a cartridge tape, an 8-inch floppy, or the removable cartridge of an HP 7906 disc; you can use the **CHANGE FORMAT** softkey to select the type of format you want the device to have. The following table gives the details of the formatting options.

```
DEVICE                           FORMAT OPTIONS
Cartridge Tape                   Standard Format
                                 HP Interchange Format

8-inch Floppy                    Standard Format
                                 HP Interchange Format
                                 IBM Format

HP 7906 Cartridge                Standard Format
                                 HP Interchange Format
```

To specify an alternate media format, press **CHANGE FORMAT** until the desired format appears on the screen. The HP interchange format allows you to use the media on other compatible HP systems. The IBM format allows you to use the media on both HP 260 and compatible IBM systems. A disc interleave of 1 should be used with the IBM format.

NOTE

Specifying the IBM initialization format only allows flexible discs to be used on either your computer system or on an IBM system. It does not enable one system to read data written on the disc by the other system; that requires unique software. In addition, an IBM data structure may need to be established on the disc. Refer to the Media Programming Manual for more details.

Interleave

Interleave refers to the number of disc revolutions needed to read a complete track of information from a disc. You may want to alter the disc interleave for certain less common applications. Refer to the chart below for the default interleave and the legal range for each disc.

Disc	Default Interleave	Possible Interleave Values
7906	1	1
7908	1	1-29
7910	1	1
7911	1	1-29
7912	1	1-29
5 Mb Disc	1	1
10 Mb Disc	1	1
15 Mb Disc	1	1
7941A	1	1
7942A	1	1
7945A	1	1
7946A	1	1
7957A	1	1
7958A	1	1
9133D	3	1-31
9134D	3	1-31
9133H	3	1-31
9134H	3	1-31
9133L	3	1-31
9134L	3	1-31
9153B	3	1-31
9154B	3	1-31
8" Flexible Disc	4	1-29
3.5" Flexible Disc (microfloppy)	2	1-15

To specify an alternate interleave format, press the **INTERLEAVE** softkey and enter the desired interleave number for the disc.

Directory

Applications involving a large number of files may necessitate an increase in the size of the directory. The directory softkey displays the current number of tracks specified for the directory itself and the number of files that the directory may contain. The following table, "Directory Sizes", shows the maximum number of files (for a given number of directory tracks) that can be stored on a mass storage medium.

NOTE

When duplicating one disc from another, both discs must have the same directory sizes.

If a message indicates that a tape is unavailable when a tape is really in the drive, you may have one of these situations:

1. Disc is uninitialized. In this case, switch from disc buffered mode to memory buffered mode. Use the **DIRECT** command as described in the section of the BASIC manual titled "File Storage".

2. Tape was removed from another drive. Run **TAPFIX** (as described in the section of this manual titled "TAPE FIX") to check the status of the tape.

3. Drive is waiting for another tape. Run **TAPFIX** (as described in the section of this manual titled "TAPE FIX") to check the status of the drive.

4. Tape is not loaded properly. Eject the tape from the drive, and reinsert it, allowing it to load properly.

Directory Sizes

Tracks for Directory	File Entries	Tracks for Directory	File Entries
5, 10, & 15 Mbyte Disc		**7908**	
1	368	1	352
2 default (5 & 10 Mb)	768	2	720
3 default (15 Mb)	1168	3	1104
4	1568	4 default	1472
5	1968	5	1840
6	2352	5	2224
7	2752	7	2592
8	3152	8	2960
9	3552	9	3344
10	3952	10	3712
11	4336	11	4080
12	4736	12	4464
13	5136	13	4832
14	5536	14	5200
15	5936	15	5584

Tracks for Directory	File Entries	Tracks for Directory	File Entries
7906		**7910**	
1	592	1	384
2 default	1200	2 default	800
3	1824	3	1200
4	2432	4	1616
5	3056	5	2032
6	3664	6	2432
7	4272	7	2848
8	4896	8	3248
9	5504	9	3664
10	6128	10	4080
11	6736	11	4480
12	7344	12	4896
13	7968	13	5296
14	8576	14	5712
15	9200	15	6128

Directory Sizes

Tracks for Directory	File Entries	Tracks for Directory	File Entries
7911 and 7912		**7941/42A** **7945/46A** **9133/34D/H/L**	
1	656	1	320
2	1344	2	656
3 default (7911)	2032	3	1008
4	2704	4 default(9133/34D)	1344
5 default (7912)	3392	5	1680
6	4080	6 default(7941/42A)	2032
7	4752	7	2368
8	5440	8	2704
9	6128	9 default(7945/46A)	3056
10	6800	10	3392
11	7488	11	3728
12	8176	12	4080
13	8848	13	4416
14	9536	14	4752
15	10224	15	5104

3. 5" Flexible Disc (microfloppy)		**8" Flexible Disc**	
1 default	144	1	356
2	320		
3	496		
4	656		
5	832		
6	1008	**150' Cartridge Tape**	
7	1168		
8	1344	6	4080
9	1520		
10	1680		
11	1856		
12	2032		
13	2192	**600' Cartridge Tape**	
14	2368		
15	2544	6	4080

A tape cartridge has a fixed directory size. 384 sectors allow for 4080 file entries.

Directory Sizes

Tracks for Directory   **File Entries**

7957 and 7958

Tracks for Directory	File Entries
1	656
2	1328
3	2000
4	2672
5	3344
6	4016
7	4688
8	5360
9	6032
10	6704
11 default	7376
12	8048
13	8720
14	9392
15	10064

To begin initialization, press **CONTINUE.** The time required to initialize each mass storage medium is shown below:

Disc	Size		Initialization Time*	
7906	9. 8	megabyte	30	minutes
7908	16. 7	megabyte	25	minutes
7910	11. 7	megabyte	2	minutes
7911	27. 5	megabyte	15	minutes
7912	64	megabyte	35	minutes
5 Mb. Disc	4. 7	megabyte	6	minutes
10 Mb. Disc	9. 4	megabyte	13	minutes
15 Mb. Disc	14. 7	megabyte	21	minutes
7941A	24	megabyte	18	minutes
7942A	24	megabyte	18	minutes
7945A	55	megabyte	40. 5	minutes
7946A	55	megabyte	40. 5	minutes
7957A	80	megabyte	30	minutes
7958A	132	megabyte	41	minutes
9133D	14. 7	megabyte	23	minutes
9134D	14. 7	megabyte	23	minutes
Uncertified Tape	16	megabyte	20	minute
Uncertified Tape	67	megabyte	70	minute
Precertified Tape	16	megabyte	1	minutes
Precertified Tape	67	megabyte	1	minutes
8" Flexible Disc	1. 2		10	
3. 5" Flexible Disc (microfloppy)	. 63		1. 5	

* These times may vary if bad tracks/sectors/blocks are spared.

The display indicates each test being performed. If a defective disc track is found its number remains displayed. For tapes, only the total number of spared blocks is displayed.

For microfloppies, nothing is displayed to indicate a defective track. However the MEDIA MONITOR LED blinks on and off to show that the microfloppy is at the end of its active life, and should be copied and then replaced.

```
                         INITIALIZATION UTILITY
                              INITIALIZE

Selected device is MICRODISC :A2,2,1

INITIALIZATION IN PROGRESS    (Interleave = 2 with standard format)




_____

System busy

_____
 |      |       |       |      ||       |       |       |       |
```

While tape initialization is done with one pattern test, disc initialization is performed with a varying number of pattern tests. Each media has its own limit in regard to the tolerated number of spared tracks (as indicated in the following tables).

Media Initialization

Disc	Pattern Tests	Maximum Tracks Spared Before Media Is Unusable
7906	1	20
7908	8	15
7910	1	6
7911	8	15
7912	8	15
5 Mb. Disc	1	
10 Mb. Disc	1	1 sector per track spared
15 Mb. Disc	1	(no track sparing)
7941/42	8	15
7945/46	8	15
7957/58	8	6 per head
9133/34D Disc	*	*
8" Flexible Disc	5	4
3. 5" Flexible Disc (microfloppy)	*	*

*   The pattern test and the maximum number of tracks spared is controlled by the disc hardware.

If you do not exceed these limits, the number of tracks "spared" or substituted for defective tracks is shown. As mentioned previously, block sparing, not track sparing, is done on tapes.

Tape	Pattern Tests	Number of Blocks Spared Before Tape is Unusable
150 ft.	1	32
600 ft.	1	128

The final display may look like this:

```
┌─────────────────────────────────────────────────────────────────────────┐
│                        INITIALIZATION UTILITY                             │
│                             INITIALIZE                                    │
│Selected device is MICRODISC :A2,2,1                                       │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│INITIALIZATION COMPLETE                                                    │
│                                                                           │
├───────────────────────────────────────────────────────────────────────  │
│Press RESTART to select another device or EXIT PROGRAM to stop            │
│                                                                           │
│                                                                           │
├───┬────┬────┬─────┬──┬───────────┬─────────────┬─────────────────────────┤
│   │    │    │     │  │           │   RESTART   │           │    EXIT      │
│   │    │    │     │  │           │             │           │  PROGRAM     │
└───┴────┴────┴─────┴──┴───────────┴─────────────┴───────────┴──────────────┘
```

If a data-recovery error occurs during initialization, the utility cannot read data from the media. This may be caused by a defective medium, or dust on the surface of the medium. To verify the error, attempt to initialize the media again.

Purge All

The purge-all routine re-initializes the main and spare directories on a medium, in effect performing a "fast initialization". This routine does not test the media, and cannot be used on new (blank) media.

To purge all files, first press the **PURGE ALL** softkey. Then select the drive holding the medium to be purged. Next, press the **CONTINUE** softkey to start the routine. **PURGE ALL** takes only a few seconds.

```
                         INITIALIZATION UTILITY
                              PURGE ALL

Selected device is MICRODISC :A2,2,1

All files will be purged on this media







ALL FILES PURGED
_____
Press RESTART to select another device or EXIT PROGRAM to stop


_____
|     |     |     |     |   |        | RESTART |     | EXIT     |
|     |     |     |     |   |        |         |     | PROGRAM  |
```

SYSTEM CONFIGURATION

THE CONFIG PROGRAM

The CONFIG (configuration) program allows a user to review and change system software configuration, read/write memory assignment, default peripheral addresses, baud rates and autostarts. Software which can be reconfigured to be loaded at power-on includes DROMs (disc-resident read-only memory), primary and alternate keyboard sets, and special HP-IB driver routines.

The CONFIG program is a BASIC-language utility which is used to alter the system configuration. Using CONFIG does not erase software, but merely changes the status of each software module to be either loaded or not loaded at power-on. CONFIG is distributed with the operating system on both disc and tape.

NOTE

CONFIG changes the HP 260's configuration by modifying the SYSTEM file. Whether or not you provide a volume specifier when executing the CONFIG program, **CONFIG modifies the SYSTEM file that resides on the default mass storage device** (the default mass storage device is specified with the MSI statement). **If the default mass storage device does not contain a SYSTEM file**, CONFIG searches for a SYSTEM file to modify. Beginning with the mass storage device having the highest address, and the highest unit number on that address, and continuing through the mass storage device with the lowest address, the devices are searched until a SYSTEM file is found; the first SYSTEM file found is modified by CONFIG.

To run CONFIG, first load the system. Then execute a command of the following form:

>   RUN "CONFIG[*volume spec*]"

The following menu appears:

```
                        HP260 SYSTEM CONFIGURATION


     1   DROM list              8   Memory configuration
     2   DROM edit              9   Asynchronous port configuration
     3   Peripheral list       10   Task and Workstation configuration
     4   Peripheral edit       11   Miscellaneous configuration
     5   Keyboard list         12   Set printer
     6   Keyboard edit
     7   Auto start




                                          Printer is currently CRT
 ─────────────────────────────────────────────────────────────────────
 Select and type in the number of the function you wish to perform


 ─────┬─────┬─────┬─────┬──┬─────┬─────┬─────┬──────────
      │     │     │     │  │     │     │     │  EXIT
      │     │     │     │  │     │     │     │  PROGRAM
```

Softkey Number and Label	Description
1, 2 **DROM List/Edit**	Allows you to list and change the "load at power-up" status of DROM files.
3, 4 **Peripheral List/Edit**	Allows you to list or change the device address assigned to any available special HP-IB drivers.
5, 6 **Keyboard List/Edit**	Allows listing or changing the primary and secondary keyboards loaded at power-on.
7 **Autostart**	Specifies a message to be displayed or a command to be executed immediately after the system is loaded at power-on.

8 **Memory Configuration**   Allows changing the read/write memory configuration established at power-on.

9 **Asynchronous Port Configuration**   Allows configuration of devices (other than workstations) to the asynchronous serial interface on the system. Also allows selection of baud rate and additional settings for ASI ports and integrated serial ports.

10 **Multiple Task and Workstation Configuration**   Allows the configuration of workstations. Also allows you to allocate TASK IDs to workstation ports or secondary tasks, and then specify the execution priority for each TASK ID.

11 **Miscellaneous**   Allows you to change the default mass memory device, configure the number of directory cache entries, disable the marking of files as "not backed up", specify a system identifier (SYSID$) and select the frame rate for Video workstations. Also allows you to change the function of the ⬛TAB⬛ key on Video workstations.

12 **Set Printer**   Allows you to specify the destination device for output configuration lists.

13 **Dump Configuration**   This selection appears when a device other than the display is specified using the Set Printer routine. Selecting Dump Configuration outputs all configuration tables to the currently specified printer.

NOTE

If ERROR 2 occurs while running CONFIG, the computer does not have sufficient user memory to continue. To re-configure the user memory, run the MFIG utility as described in this section.

When you want to add or delete workstations from your system configuration, make the desired changes to the Multiple Task and Workstation Configuration **before** altering the Asynchronous Port Configuration.

Any changes in a configuration do not become effective until the operating system is reloaded. Therefore, power the system off and then on again. Before powering off your system, you must make sure that all users have completed their applications, and have prepared for a system shut-down. This procedure will prevent data loss due to the power-off of the system while programs are being run.

General Information about the CONFIG Program

The following softkeys have the same function throughout the CONFIG program.

RECORD CONFIG - this softkey writes the information currently on the screen to the system disc.

EXIT - this softkey leaves the subsidiary program you are currently running, and returns to the initial menu of the CONFIG program.

NEXT MENU - where there is more than one set of softkeys in a subsidiary program, this softkey displays the second set.

PREVIOUS MENU - where there is more than one set of softkeys in a subsidiary program, this softkey displays the first set.

PRINT CONFIG - this softkey prints a copy of the information currently on the screen to the printer of your choice. You select the printer by pressing the softkey with the printer port ID you want to use.

RESTART - this softkey overwrites the existing screen with the information that is currently stored on the system disc. This allows you to start again when you have made changes that you do not want to store.

Listing and Editing DROM Status

To list the DROMs which are loaded at power-on, select function 1 from the initial CONFIG menu. Here is an example list:

```
                         HP260 SYSTEM CONFIGURATION
                                 DROM LIST

                                AUTO    CURRENTLY
 NAME      REVISION    SIZE     LOAD      LOADED

 EUROPE    07/28/86     576      X          X
 PACK      07/28/86    1360      X          X
 IMAGE     07/28/86   17320      X          X
 SORT      07/28/86    6736      X          X
 REPORT    08/11/86    6588      X          X
 FORMS     07/28/86    1190      X          X
 TAPES     07/28/86    4352      X          X
 TOOLS     07/28/86   10698      X          X
 RIO       07/28/86    4656      X          X
 TIO       07/28/86    5340      X          X


 Please select a function



 CONTINUE                                                          EXIT
```

An X in the AUTO LOAD column means that the corresponding DROM is configured and will be loaded at the next power-on. An X in the CURRENTLY LOADED column means that the DROM was loaded when the system was last powered-on.

Press CONTINUE to display the next ten DROMs.

Press EXIT to return to the initial menu.

Force Loading of DROMs

The system needs a principal workstation to display power-on messages and the loading status information. Operating System B. 08 supports three types of principal workstation.

- Video workstation on VIDEO channel 1

- PC or workstation on integrated port -1

- Workstation on ASI port 1

To make sure that a principal workstation is present, the system will force-load the DROM it requires to communicate with the relevant workstation (if that DROM is not already configured). This force-loading takes place in the following situations:

- If there is a Video board connected, and the VIO DROM is not configured, the DROM will be force-loaded.

- If there is no Video board connected , and there is a 2392A-type workstation connected to integrated port -1 (on HP 260 Series 30/Series 40 computers); the system will force-load the PIO DROM if it is not already configured.

- If there is no Video board connected, and there is a workstation connected to port 1 of the ASI board (on all systems except HP 260 Series 30/Series 40 computers); the system will force-load the RIO DROM if it is not already configured.

| **NOTE** |

The above paragraphs titled "Force Loading of DROMs" do not apply to those HP 250s that have an integral workstation (HP 45251A and HP 45251B). Integral workstations need no DROM to communicate with the computer.

To edit DROM status, first press the EXIT softkey. Select function 2 from the initial CONFIG menu. Here is an example menu:

```
                        HP260 SYSTEM CONFIGURATION
                               DROM EDIT

             AUTO                    AUTO                   AUTO                    AUTO
    NAME     LOAD                    LOAD                   LOAD                    LOAD

1   EUROPE    X      9  RIO      X   17  IMAGE2   X     25  UPDATE     X
2   PACK      X     10  TIO      X   18  TASK     X     26  PIO        X
3   IMAGE     X     11  TRACE    X   19  IMAGEU   X     27  NET250     X
4   SORT      X     12  TRIG     X   20  TIMER    X     28  SYSRR      X
5   REPORT    X     13  MATRIX   X   21  PERFM    X     29  DCACHE     X
6   FORMS     X     14  SPOOL    X   22  CTRACE   X
7   TAPES     X     15  CS250    X   23  VIO      X
8   TOOLS     X     16  MEDIA    X   24  PTYPE    X

                                           Largest available space:   7862
                                           Total unused DROM space:    8974
─────────────────────────────────────────────────────────────────────────────
Please select a function



─────────────────────────────────────────────────────────────────────────────
   EDIT          │        │  RECORD  ││OLD LIST│       │        │    EXIT
                 │        │  CONFIG  ││        │       │        │
```

Now press the EDIT softkey, type the DROM number from the displayed list, and press (RETURN). (A flashing X in the list indicates that there is not enough room for the DROM in the configuration currently running.) Then press the RECORD CONFIG softkey to update the disc configuration.

To restore the original DROM configuration (before the disc has been updated), press OLD LIST. Although DROM space can be spread over multiple blocks, a single DROM must fit completely within one block. The "Largest Available Space" refers to the largest space left within one block. The "Total Available Space" refers to the total space remaining over multiple blocks.

```
┌──────────┐
│   NOTE   │
└──────────┘
```

DROM space is calculated based on the currently **LOADED** memory configuration – not on the configuration stored on disc.

Press **EXIT** to return to the initial CONFIG menu.

Peripheral Address List and Edit

To display a list of I/O driver routines and their current device address assignments, select function 3 from the initial CONFIG menu. Here is a sample list:

```
                        HP260 SYSTEM CONFIGURATION
                              PERIPHERAL LIST


SELECT              DEFINED                         CURRENT
 CODE       DEVICE          DRIVER          DEVICE          DRIVER


   0        *None*          *None*          *None*          *None*
   1        *None*          *None*          *None*          *None*
   2        913x            SYSTEM          913x            SYSTEM
   3        *None*          *None*          *None*          *None*
   4        *None*          *None*          *None*          *None*
   5        794x            SYSTEM          794x            SYSTEM
   6        *None*          *None*          *None*          *None*
   7        *None*          *None*          *None*          *None*



_____

Please select a function



 |        |        |        ||        |        |       | EXIT
 |        |        |        ||        |        |       |
```

The device address assigned to each system I/O driver cannot be changed. To change the device address assigned to a non-standard I/O driver, first press EXIT to return to the initial menu. Then select function 4 from the initial CONFIG menu to run the peripheral edit routine.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                       HP260 SYSTEM CONFIGURATION                              │
│                           PERIPHERAL EDIT                                     │
│                                                                               │
│  PERIPHERAL CONFIGURATION:                                                    │
│                                                                               │
│  SELECT                                    DRIVER                             │
│   CODE         DEVICE       DRIVER         NUMBER     NAME       TYPE         │
│                                                                               │
│     0          *None*       *None*           0        *None*                  │
│     1          *None*       *None*           1        PTYPE      Display class │
│     2          *None*       *None*                                            │
│     3          *None*       *None*                                            │
│     4          794x         SYSTEM                                            │
│     5          13037        SYSTEM                                            │
│     6          FLEX DISC    SYSTEM                                            │
│     7          *None*       *None*                                            │
│                                                                               │
│                                                                               │
│  Please select a function                                                     │
│                                                                               │
│                                                                               │
│  ┌────────┬────────┬────────┬──────────┬─────────┬────────┬────────┬────────┐ │
│  │  EDIT  │        │        │  RECORD  │OLD LIST │        │        │  EXIT  │ │
│  │        │        │        │  CONFIG  │         │        │        │        │ │
│  └────────┴────────┴────────┴──────────┴─────────┴────────┴────────┴────────┘ │
└─────────────────────────────────────────────────────────────────────────────┘
```

The I/O drivers which can be re-assigned are now listed on the right. Press the EDIT softkey, type the device address (select code) to be changed, and press (RETURN). (The entry will not be accepted if it is already assigned to a system driver.) Then type the driver number to be assigned and press (RETURN). Type 0 to de-assign a driver from its device address.

The only device that uses a driver other than the SYSTEM driver is the HP 2608 printer. If you have this printer, you should select the non-standard driver for the HP-IB address on which the printer is configured. The system then prompts you to specify the number of lines per page and the number of lines per inch to be used in the operation of the printer.

Press the RECORD CONFIG softkey to change the disc configuration.

If you wish to return to the original configuration list (before it has been updated), press the OLD LIST softkey.

Press EXIT to return to the initial CONFIG menu.

Keyboard List and Edit

To list the keyboards available, select function 5 from the initial CONFIG menu. Here is a sample listing:

```
┌──────────────────────────────────────────────────────────────────────┐
│                    HP260 SYSTEM CONFIGURATION                          │
│                         KEYBOARD LIST                                  │
│                                                                        │
│ KEYBOARD NAME  TYPE      SELECTED       KEYBOARD NAME  TYPE      SELECTED│
│                                                                        │
│ US             PRIMARY   MAIN/AUX       FLEMISH        PRIMARY          │
│ FRENCH         PRIMARY                  SWISS-GERMAN   PRIMARY          │
│ GERMAN         PRIMARY                  SWISS-ROMAN    PRIMARY          │
│ ITALIAN        PRIMARY                  LINE DRAW      SECONDARY        │
│ SPANISH        PRIMARY                                                 │
│ SWEDISH        PRIMARY                                                 │
│ UK             PRIMARY                                                 │
│ DANISH         PRIMARY                                                 │
│ KATAKANA       SECONDARY                                               │
│ FR. CANADIAN   PRIMARY                                                 │
│ FINNISH        PRIMARY                      ALTERNATE CHARACTER SET:    │
│                                                ROMAN EXTENSION         │
│────────────────────────────────────────────────────────────────────── │
│ Please select a function                                               │
│                                                                        │
│                                                                        │
│────┬────┬────┬────┬─┬────┬────┬────┬──────── │
│    │    │    │    │ │    │    │    │  EXIT   │
│    │    │    │    │ │    │    │    │         │
└──────────────────────────────────────────────────────────────────────┘
```

Press EXIT to return to the initial CONFIG menu.

To change the primary or secondary keyboards loaded during power-up, select function 6 from the initial CONFIG menu:

```
┌──────────────────────────────────────────────────────────────────────────────┐
│                        HP260 SYSTEM CONFIGURATION                              │
│                             KEYBOARD LIST                                      │
│                                                                                │
│  #  KEYBOARD NAME  TYPE       SELECTED     #  KEYBOARD NAME  TYPE     SELECTED  │
│                                                                                │
│  1  US             PRIMARY    MAIN/AUX    12  FLEMISH        PRIMARY            │
│  2  FRENCH         PRIMARY                13  SWISS-GERMAN   PRIMARY            │
│  3  GERMAN         PRIMARY                14  SWISS-ROMAN    PRIMARY            │
│  4  ITALIAN        PRIMARY                15  LINE DRAW      SECONDARY          │
│  5  SPANISH        PRIMARY                                                      │
│  6  SWEDISH        PRIMARY                                                      │
│  7  UK             PRIMARY                                                      │
│  8  DANISH         PRIMARY                                                      │
│  9  KATAKANA       SECONDARY                                                    │
│ 10  FR. CANADIAN   PRIMARY                                                      │
│ 11  FINNISH        PRIMARY                ALTERNATE CHARACTER SET:             │
│                                             ROMAN EXTENSION                     │
│ ───────────────────────────────────────────────────────────────────────────  │
│ Please select a function                                                       │
│                                                                                │
│                                                                                │
│ ───────────────────────────────────────────────────────────────────────────  │
│ EDIT MAIN│  EDIT   │ CHANGE  │ RECORD  ││OLD LIST│        │        │  EXIT     │
│          │AUXILIARY│CHAR SET │ CONFIG  ││        │        │        │           │
└──────────────────────────────────────────────────────────────────────────────┘
```

The keyboards currently available are listed. To change the main (primary) or auxiliary (secondary) keyboard, first press either EDIT MAIN or EDIT AUXILIARY. Then input the keyboard number to be changed. Press RECORD CONFIG to change disc configuration. The new keyboard is loaded during power-up.

```
┌──────────┐
│   NOTE   │
└──────────┘
```

The main keyboard language that is configured on your computer system is the language used in all the collations carried out by the system. This means that, if you want to use other languages on any of the workstations of the system, you should be aware that the collations done on data bases will not be compatible with the other languages.

The CHANGE CHAR SET key allows you to change the alternate character set.

This softkey is available only if the main keyboard is a U.S. keyboard and the auxiliary keyboard is a Line Draw keyboard. This function allows you to select either Katakana or Roman extensions as the alternate character set. For all other keyboard configurations, the alternate character set is defined by the system.

●   To return to the original keyboard list (before RECORD CONFIG is pressed), press OLD LIST.

    To return to the initial CONFIG menu, press EXIT.

●

●

●

●

Autostart Configuration (AFIG)

The autostart routine allows each task to either display a message or execute a command immediately after the system is loaded at power-up. To run the routine, either select function 7 from the initial CONFIG menu or run the AFIG program. The initial menu is as follows:

```
┌─────────────────────────────────────────────────────────────────────────────────┐
│                        HP260 AUTOSTART CONFIGURATION                              │
│                                                                                   │
│ TASKID    I/O     MEMORY    STATUS       COMMAND                                   │
│    1     VIO 1     64K      Execute      LOAD KEY "PRIMER"                          │
│    2     ASI 1     64K      Display      LOAD KEY "PRIMER"                          │
│    3     ASI 2     64K      **none**                                               │
│    4     ASI 4     64K      **none**                                               │
│                                                                                   │
│                                                                                   │
│                                                                                   │
│                                                                                   │
│                                                                                   │
│                                                                                   │
│                                                                                   │
│                                                                                   │
│                                                                                   │
├───────────────────────────────────────────────────────────────────────────────┤
│ Please select a function                                                          │
│                                                                                   │
├──────────┬──────────┬──────────┬──────┬───┬─────────────┬──────────┬─────────────┤
│  ALTER   │  CLEAR   │CLEAR ALL │      │   │             │ RESTART  │  NEXT MENU   │
│  FIELD   │  FIELD   │ FIELDS   │      │   │             │          │             │
└──────────┴──────────┴──────────┴──────┴───┴─────────────┴──────────┴─────────────┘
```

The screen shows the TASKID, I/O port number or "TASK", memory size, and current autostart status for each workstation or background task. Any current autostart message or command appears in a 40-character inverse-video field.

To input a command or message, first position the cursor within the command field and press ALTER FIELD. Then, type in the message and press (RETURN). The status is automatically set to EXECUTE the command at power-on. If you wish to only display a message, move the cursor to the status field and press ALTER FIELD. Then press DISPLAY.

To delete a command or message, move the cursor to the appropriate status field and press ALTER FIELD. Then press NONE.

● To record the new autostart configuration on disc, first press NEXT MENU. Then press RECORD CONFIG. The new autostart configuration becomes effective when the operating system is reloaded.

```
    ┌──────────────┐
    │     NOTE     │
    └──────────────┘
```

Execution of the autostart command is disabled for the principal workstation if any error messages appear at power-up.

Memory Configuration (MFIG)

The Memory Configuration routine specifies the actual memory configuration of the system, selects the amount of memory for each task, and selects the amounts and locations of DROM overflow areas.

To run this routine, either select function 8 from the initial CONFIG menu or run the MFIG utility. The initial memory configuration screen will reflect the current configuration.

```
                          HP260 MEMORY CONFIGURATION

        Taskid      I/O      Memory           Taskid      I/O      Memory
          1       VIO 1      64K
          2       ASI 1      64K
          3       ASI 4      64K




                                                COMMON BLOCK      8/56K

              Total Memory                    Unassigned Memory
      expected config.   1024 KB      current configuration approx.    576 KB
            actual HW     832 KB          actual system  Disc Cache    384 KB
      ───────────────────────────────────────────────────────────────────────
      Please select a function



      ┌──────────┬─────────┬─────────┬──────────┬──┬─────────┬────────┬───────────┐
      │ ALTER    │         │         │ ACTUAL   │  │ RESTART │        │ NEXT MENU │
      │ FIELD    │         │         │ MEMORY   │  │         │        │           │
      └──────────┴─────────┴─────────┴──────────┴──┴─────────┴────────┴───────────┘
```

Total Memory and Unassigned Memory Information

The "actual HW" value shows you how much physical memory is installed in your computer system.

The "actual system Disc Cache" value shows you how much memory has not been assigned to the Operating System, the Common Block, user memory partitions, and DROM overflow space; and is therefore being used for Disc Cache. This allows you to decide how much memory to allocate to Disc Cache.

If your computer has no Disc Cache capability, the unused memory is not being used at all. The message "actual system unused" shows the amount of memory that is not being used. You should ensure that the "actual system unused" value is equal to or very close to zero.

The "expected config" value can be set to any value you like. It should be equal to the "actual HW" value. If these two values are not equal, use the following procedure to make them equal.

1. Position the cursor in the "expected config" field.

2. Press the ALTER FIELD softkey.

3. Press the relevant softkey: the one you need to change the "expected config" value so that it is equal to the "actual HW" value.

4. Press the NEXT MENU softkey.

5. Press the RECORD CONFIG softkey. The new "expected config" value is now stored on the system disc. When you power off your computer system, and then power it on again, the new value becomes active.

```
┌─────────────┐
│    NOTE     │
└─────────────┘
```

If there is a difference between the "expected config" and "actual HW" values, you will receive a message on the principal workstation whenever your computer system is powered on. This message will prevent the execution of any command that you have defined, using the AUTOSTART module of the CONFIG program, for the principal workstation.

Memory Requirements for Access to Utilities

The new Operating System has an extended, reorganized set of utilities. Access to any of these utilities now requires that the task that makes the access has a full 64KB of memory. It will be impossible for a task with less than 64KB to run any of the utility programs.

The Function of the Common Block

The common block is used to store information that is common to the whole system; this information can then be used by any task. The minimum memory requirement for the common block is 8KB; therefore up to 56KB of the common block's memory area can be configured as DROM overflow space.

Configuring DROM Overflow

Part of the memory area that is reserved for the storage of the Operating System is used for the storage of DROMs. However, there is not enough space in this reserved area to store all of the DROMs that are provided with the Operating System.

To avoid the problems caused by the failure to load DROMs (due to the unavailability of memory), you can specify part of the common block and/or part of any user memory partition to be DROM overflow space. If you specify part of a user block as DROM overflow space, that user loses the power to access all of the 64KB of memory in the block; even if the DROM overflow area is not used, it is not available to the user. Therefore you should be careful not to allocate too much space to DROM overflow.

Use the following procedure to allocate DROM overflow space.

1. Position the cursor in the COMMON BLOCK field or in one of the user partitions under the heading "Memory".

2. Press the ALTER FIELD softkey.

3. Press the SET DROM OVERFLOW softkey.

4. Type in the number of KB of memory that you want to reserve for DROM overflow. This number must be between 0 and 42KB if you are changing the structure of a user partition; and between 0 and 56KB if you are changing the structure of the common block.

5. Press the NEXT MENU softkey.

6. Press the RECORD CONFIG softkey. The new memory structure is now stored on the system disc. When you power off your system and then power it on again, the new structure becomes active.

$$\boxed{\textbf{NOTE}}$$

It is advised that you use the common block for DROM overflow before you use any of the user partitions for that purpose. If you configure no DROM overflow, the system will automatically convert any memory space that is currently not allocated to users or the common block, to storage space for DROM overflow.

Displaying Memory Block Information

Press the ACTUAL MEMORY softkey. The memory blocks that are present on the memory boards that are actually installed are displayed. In addition, the block number, block size, and usage of each of the memory blocks are displayed.

Asynchronous Port Configuration (RFIG)

To review and/or change the configuration for each I/O port, either select function 9 from the initial CONFIG menu or run the RFIG program. The initial menu is of the following form:

```
                     HP 260 ASYNCHRONOUS PORT CONFIGURATION

Port  Class      ID  Type  Fmt  Speed  SwConf  Null  Remarks
  1   Workstn        2392        9600   DIRECT
  2   Workstn        2622        9600   DIRECT
  3     none
  4   Workstn        2392        9600   DIRECT
  5   Printer    15  2225  8N1   9600   DIRECT        Word processing printer
  6   Printer    16  268x  8N1   9600   DIRECT        Accounting Dept. printer
  7     none
  8     none
  9     none
 10     none
 -1     none
 -2     none

1 Video Workstation is configured.

Please select a function


  ALTER                                          RESTART          NEXT MENU
  FIELD
```

This screen shows the device class (computer, terminal, printer, or workstation), device type, data transfer format and baud rate. The appropriate information for each I/O port should be input when a device is added to your system and should not be altered until system configuration changes.

The following paragraphs explain how to change the configuration of peripherals connected to your computer via the asynchronous interface. The various functions involved in changing the configuration are described separately.

Adding a Peripheral Device

1. Position the cursor in the Class field, labelled none, opposite the port number to which you want to add a peripheral device.

2. Press the ALTER FIELD softkey.

3. Select the new device by pressing one of the following softkeys:

- Press the Terminal softkey to add a terminal, plotter, data entry terminal or stand-alone bar code reader. The default device type for these devices is 26xx.

- Press the Printer softkey to add a printer. The default device type is 293x.

- Press the Computer softkey to add an HP 3000 to the port. The only valid device type is 3000.

Changing the Type of Peripheral Device

1. Position the cursor in the Type field that you want to change.

2. Press the ALTER FIELD softkey.

3. Select the new device type from the following options:

- For a class Terminal field the options are TTY and 26xx. All Hewlett-Packard devices of class "Terminal" are of type "26xx". If you have a non-Hewlett-Packard device, use the "TTY" type. With the "TTY" type the Null field is active, and you can input the number of NULL characters you want to use for handshake purposes.

- For a Printer field the options are TTY, 26xx, 2601, 2602, 293x, 2563, 268x, 2225, 2603, and 905B.

- There are no options for a Computer field; it must have the device type 3000.

```
┌──────────────┐
│    NOTE      │
└──────────────┘
```

It is very important that you configure the type of peripheral device correctly. For example, if you connect a 2225D printer, and configure its type, wrongly, as 293x; the 2225D printer will not operate satisfactorily.

The correct type for each peripheral device is shown in the table at the end of this section, titled "Serial Configuration Table".

Removing a Peripheral Device

1. Position the cursor in the Class field of the peripheral device that you want to remove.

2. Press the ALTER FIELD softkey.

3. Press the none softkey. The peripheral is removed from the screen.

Changing the Data Comm. Format of a Peripheral Device

1. Position the cursor in the Fmt field that you want to change.

2. Press the ALTER FIELD softkey.

3. Press the softkey with the data communication format you want to be used with the peripheral device.

This code summarizes the data format used:

         n   **n**   **n**

   character size   parity   number of stop bits

   7 = 7 bits   E = even   1 or 2
   8 = 8 bits   O = odd
                   N = none

For example, the format for a device that requires 8 bits, no parity, and one stop bit, is   8N1

The format needed for each device is shown in the table at the end of this section, titled "Serial Configuration Table".

Changing the Baud Rate

1. Position the cursor in the Speed field which you want to change.

2. Press the ALTER FIELD softkey.

3. If your computer supports software-selectable baud rates, press the NEXT CHOICE softkey to run through each of the available baud rate settings, one by one. When the baud rate you want is displayed, press the DONE softkey.

   If your computer does not support software-selectable baud rates, press the HARDWARE SETTING softkey. If you want to change the baud rate at which a peripheral device communicates with your computer system, contact your Hewlett-Packard support person.

Changing the Connection Mode

1. Position the cursor in the SwConf field that you want to change.

2. Press the ALTER FIELD softkey.

3. Press the softkey with the name of the connection mode that you want to use in the communication of the peripheral device with your computer system. The options are:

   • DIRECT - direct connection by cable

   • MoSwUS - United States switched modem communication

System Configuration

- MoSwEU – European switched modem communication

- MoLeHi – European leased modem connection

- MoLeLo – United States leased modem connection

The modem communication settings are effective only if you have the necessary hardware.

Altering the Remarks Field

Position the cursor in the Remarks field of the peripheral device that you want to describe. Press the ALTER FIELD softkey. Type any comment you wish in the field.

Recording the New Configuration

When you have made all of the changes that you want to make to the Asynchronous Port Configuration, press the RECORD CONFIG softkey (if this softkey is not displayed, press the NEXT MENU softkey to display a softkey menu in which the RECORD CONFIG softkey is ⌐f1⌐). The new configuration is then stored on the current system disc. The next time that your computer is powered off and then on again, the new configuration will be loaded into memory.

Examples of Changing the Asynchronous Port Configuration

When system configuration is changed (for example a new terminal is added, or printer is removed), the appropriate line(s) in the table must be altered to reflect current configuration. To alter each field, position the cursor within the field and press the ALTER FIELD softkey.

For example, to alter the "SPEED" field for an ASI device in the previous menu, set the cursor in the field labeled 9600, press the NEXT CHOICE softkey until the correct baud rate shows up in the field.

```
                    HP 260 ASYNCHRONOUS PORT CONFIGURATION

Port   Class     ID   Type   Fmt   Speed   SwConf   Null   Remarks
  1    Workstn        2392          9600    DIRECT
  2    Workstn        2622          2400    DIRECT
  3     none
  4    Workstn        2392          9600    DIRECT
  5    Printer   15   2225   8N1    9600    DIRECT          Word processing printer
  6    Printer   16   2686   8N1    9600    DIRECT          Accounting Dept. printer
  7     none
  8     none
  9     none
 10     none
 -1     none
 -2     none

1 Video Workstation is configured.

Please select a function


  ALTER                                         RESTART          NEXT MENU
  FIELD
```

A device can be added to or deleted from the system configuration just as easily. For example, suppose that the HP 2225D printer is borrowed by another department. To remove it from the configuration, select a new assignment for port 5 by positioning the cursor in the field labeled Printer. Press "ALTER FIELD", then "none". To alter the Remarks line for port 5, move the cursor to the field and press ALTER FIELD; type the new remark and press (RETURN).

```
┌───────────────────────────────────────────────────────────────────────────┐
│                  HP 260 ASYNCHRONOUS PORT CONFIGURATION                     │
│                                                                             │
│ Port  Class    ID  Type  Fmt  Speed  SwConf  Null  Remarks                  │
│   1   Workstn      2392        9600   DIRECT                                 │
│   2   Workstn      2622        2400   DIRECT                                 │
│   3    none                                                                 │
│   4   Workstn      2392        9600   DIRECT                                 │
│   5    none                                        2225D temporarily on loan│
│   6   Printer  16  2686  8N1   9600   DIRECT       Accounting Dept. printer  │
│   7    none                                                                 │
│   8    none                                                                 │
│   9    none                                                                 │
│  10    none                                                                 │
│  -1    none                                                                 │
│  -2    none                                                                 │
│                                                                             │
│ 1 Video Workstation is configured.                                          │
│─────────────────────────────────────────────────────────────────────────  │
│ Please select a function                                                    │
│                                                                             │
│                                                                             │
│ ┌────────┬──────┬──────┬──────┬──┬──────┬──────────┬──────┬──────────┐      │
│ │ ALTER  │      │      │      │  │      │ RESTART  │      │NEXT MENU │      │
│ │ FIELD  │      │      │      │  │      │          │      │          │      │
│ └────────┴──────┴──────┴──────┴──┴──────┴──────────┴──────┴──────────┘      │
└───────────────────────────────────────────────────────────────────────────┘
```

The information in any inverse video field can be altered. For example, suppose you want to change the printer on port 6 to an HP 7550A plotter. Move the cursor to the field labelled Printer. Press the ALTER FIELD softkey, and select the softkey labelled TERMINAL.

To record the new I/O configuration, press NEXT MENU and then RECORD CONFIG. The new I/O configuration is not loaded, however, until the operating system is reloaded.

```
                  HP 260 ASYNCHRONOUS PORT CONFIGURATION

  Port  Class     ID  Type  Fmt  Speed  SwConf  Null  Remarks
    1   Workstn       2392        9600   DIRECT
    2   Workstn       2622        2400   DIRECT
    3    none
    4   Workstn       2392        9600   DIRECT
    5    none                                           2225D temporarily on loan
    6   Terminal  16  26xx  8N1   9600   DIRECT          new 7550A plotter
    7    none
    8    none
    9    none
   10    none
   -1    none
   -2    none

  1 Video Workstation is configured.

  Please select a function


  | ALTER |     |     |     |     || RESTART |     | NEXT MENU |
  | FIELD |     |     |     |     ||         |     |           |
```

Computer
Museum

Multiple Task and Workstation Configuration (TFIG)

To assign Task IDs to workstation ports or secondary tasks, either select function 10 from the initial CONFIG menu or run the TFIG program.

With the current Operating System (B.08), a maximum of 15 tasks can be configured. All of these tasks will operate only if your computer system has enough I/O connections and memory capacity to accommodate them all.

A screen of the following type appears when you run TFIG, or select option 10 from the initial CONFIG menu.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│          HP 260 MULTIPLE TASK and WORKSTATION CONFIGURATION                    │
│                                                                                │
│                         Task  Time                              Task  Time     │
│ Class          Type  I/O  ID   Slice │ Class          Type  I/O  ID   Slice    │
│                                       │                                        │
│ Video Wkstn    VHIL  VIO 1    1     1 │                                        │
│ asynchr. Wkstn 2392  ASI 1    2     1 │                                        │
│ asynchr. Wkstn 2622  ASI 2    3     1 │                                        │
│ asynchr. Wkstn 2392  ASI 4    4     1 │                                        │
│                                                                                │
│                                                                                │
│                                                                                │
│                                                                                │
│                                                                                │
│                                                                                │
│ Please select a function                                                       │
│                                                                                │
│                                                                                │
│ ┌────────┬─────────┬─────────┬────────┬┬──────────┬────────┬───────────┐      │
│ │ ALTER  │  ADD    │ DELETE  │  ADD   ││          │RESTART │ NEXT MENU │      │
│ │ FIELD  │ WORKSTN │ WORKSTN │ S-TASK ││          │        │           │      │
│ └────────┴─────────┴─────────┴────────┴┴──────────┴────────┴───────────┘      │
└─────────────────────────────────────────────────────────────────────────────┘
```

The following paragraphs explain how to change the task configuration information, function by function.

Adding a Workstation

1. Press the ADD WORKSTN softkey. The softkey menu changes, and gives you the following options:

- VIDEO WORKSTN; press this softkey to add a video workstation to the lowest available VIO channel.

- ASYNCHR. WORKSTN; press this softkey to add an asynchronous workstation to the lowest available ASI port.

- Intg. Asy. WORKSTN; press this softkey to add an asynchronous workstation (of type 2392) to the lowest available integrated serial port on the processor board. This option applies only to the HP 260 Series 30 and Series 40 computers.

- INTEGRAL WORKSTATION; press this softkey to configure the integral desk-workstation on HP 250 computers with the desk-workstation. This option is not available on any HP 260 computer.

Deleting a Workstation

1. Press the DELETE WORKSTN softkey. Position the cursor in the line of the workstation that you want to delete.

2. Press the DELETE WORKSTN softkey.

Adding a Secondary Task

Press the ADD S-TASK softkey. A secondary task is allocated to the lowest available Task ID.

Deleting a Secondary Task

Press the DELETE S-TASK softkey. The secondary task with the highest Task ID is deleted.

Altering Time Slices for Tasks

A time slice is the period of time given to each task in turn to execute. Although tasks appear to run concurrently, each task is actually sharing the SPU for a proportion of time indicated by its time slice value.

Normally, all tasks are assigned a time slice of 1 for equal processing time. To increase the performance of one task, at the expense of others, position the cursor in the column labeled "Time Slices" and press the ALTER FIELD key. A value in the range 1 to 99 can be selected. The greater the number, the greater the time slice; a task with a "2" in its time slice field receives twice as much SPU time as a task with a "1" in its time slice field.

Overall system performance cannot be improved by adjusting the time slices. When adjusting time slices, remember:

- When input/output is in process for a task, the task relinquishes use of the SPU. Therefore, raising the time slice of an I/O-intensive application will not greatly increase its speed.

- Total system performance is fixed. The speed of one task is increased at the expense of the others.

Changing the Type of a Workstation

1. Position the cursor in the Type field that you want to change.

2. Press the ALTER FIELD softkey.

3. Press the softkey with the name of the type to which you want to change the workstation. The choices for an asynchronous workstation are:

    - 2649 – for an HP 2649D workstation

    - 2622 – for an HP 2622D workstation

    - 2392 (NT23) – for an HP 2392A workstation, or a PC workstation

    - NT49 – for an HP 2649D workstation that is connected via NET260

    - NT22 – for an HP 2622D workstation that is connected via NET260

```
┌─────────────────┐
│      NOTE       │
└─────────────────┘
```

It is very important that you configure the type of peripheral device correctly. For example, if you connect an HP 2932A workstation, and configure its type, wrongly, as 2622; the 2392A workstation will not operate satisfactorily.

The correct type for each workstation is shown in the table at the end of this section, titled "Serial Configuration Table".

```
┌─────────────────┐
│      NOTE       │
└─────────────────┘
```

Video workstations can only be of type "VHIL". Pressing the ALTER FIELD softkey, when the cursor is in a "VHIL" field, causes an error message to appear.

Handling of Task IDs

When you add a workstation to your configuration, the CONFIG program automatically selects the correct Task ID for that workstation. This is done using the following criteria:

Each type of workstation is assigned to the lowest available Task ID unless one of the following situations occurs:

- If there is currently no video workstation in the configuration, and you add one, that video workstation is assigned to Task 1. The other tasks are re-numbered accordingly.

- If there is neither a video workstation, nor an asynchronous workstation configured, and you add an asynchronous workstation of type Intg. Asy., that asynchronous workstation is assigned to Task 1. The other tasks are re-numbered accordingly.

This re-organisation is carried out to ensure that a principal workstation of the correct type is configured. For the purposes of configuring your system, this Task ID handling needs no attention from you; it is described here simply for your information.

Recording the New Configuration

When you have made all of the changes that you want to make to the Asynchronous Port Configuration, press the RECORD CONFIG softkey (if this softkey is not displayed, press the NEXT MENU softkey to display a softkey menu in which the RECORD CONFIG softkey is ⌐ f_1 ⌐). The new configuration is then stored on the current system disc. The next time that your computer is powered off and then on again, the new configuration will be loaded into memory.

General Description of Softkey Functions

The sofkeys accessible from this menu are described below:

ALTER FIELD	To change an item, move the cursor to that location and press ALTER FIELD.
ADD/DELETE WORKSTN	Press to add or delete a workstation.
ADD S-TASK	Press to add a secondary task. (This softkey is not displayed if 15 tasks are already configured.)
DELETE S-TASK	Press to delete a secondary task. (This softkey is not displayed if secondary tasks are not configured.)
RESTART	Press to display original configuration and start over.
NEXT MENU	Press to obtain softkeys for RECORD CONFIG and PRINT CONFIG.
RECORD CONFIG	Records the configuration (including changes just made) on the disc. Restart the system to use the new configuration.
PRINT CONFIG	Prints a copy of the current Multiple Task and Workstation Configuration. Press the PRINTER ID X softkey that has X = the printer port ID that you want to use. Then press the PRINT softkey.
EXIT TFIG	Returns you to the initial CONFIG menu.

Miscellaneous Configuration (XFIG)

The miscellaneous configuration allows you to change the default mass memory device, configure the number of directory cache entries, disable the marking of files as "not backed up", and change the frame rate (for video workstations).

To run this routine, either select function 11 from the initial CONFIG menu or run the XFIG utility. The initial menu shows the configuration currently specified on the system disc.

```
                    HP260 MISCELLANEOUS CONFIGURATION


DEFAULT MASS MEMORY DEVICE:    LOAD DEVICE

DIRECTORY CACHE ENTRIES:        500

MARK FILES 'NOT BACKED-UP':    NO

SYSTEM IDENTIFIER:             REVISION 8.00


                    VIDEO WORKSTATION ONLY

FRAME RATE:    60 Hz         NUMERIC KEYPAD 'TAB' FUNCTION:    Return

_____
Please select a function



|  ALTER  |       |       |       ||       |  RESTART  |       |NEXT MENU |
|  FIELD  |       |       |       ||       |           |       |          |
```

DEFAULT MASS MEMORY DEVICE – (also called the default MSI) is the mass memory device used after the system is powered on or when (CONTROL)(HALT) is pressed. To modify the default MSI, set the cursor in the field and press ALTER FIELD. The system will ask for the device specifier. To select the device from which the system file was loaded, type "LD".

DIRECTORY CACHE ENTRIES – to record the maximum number of entries in the DCACHE list. The DCACHE list, only available if the DCACHE DROM is configured, helps improve directory search times by keeping track of directory entries. The list resides in memory, and occupies 12 bytes of common block storage per entry. For example, if 200 entries are configured, the common storage area is reduced by 2400 bytes. Up to 999 DCACHE entries may be made.

If you specify 0, or do not configure the DCACHE DROM to load, there will be no improvement in directory search times.

```
┌─────────────────┐
│      NOTE       │
└─────────────────┘
```

The DCACHE list holds the most recently used directory entries. When an
entry is added, the least recently used entry is deleted (if the list is full).

MARK FILES – Each file in the directory contains a flag to note whether the file has been backed up
since the last access. If MARK FILES is set to YES, use of this flag is enabled. Otherwise, backed-up files
will not be marked. If you perform a daily backup with Hewlett-Packard's BACKUP utility, set this to
YES.

SYSTEM IDENTIFIER – to specify a system identifier that can be displayed by SYSID$. Characters in
this field must be input from the primary character set (main keyboard); display characters and line draw
characters are not allowed. Any characters input with video enhancements are stripped of those
enhancements.

If XFIG is unable to read the system configuration file, the default value for the field will be 20 spaces. If
the value input is less than 20 characters long, the string will be padded with spaces so the resulting string
is exactly 20 characters long.

A system identifier entered in XFIG must be RECORDed by XFIG into the system file, and the operating
system then loaded, for the new identifier to be referenced. Until that takes place, SYSID$ will return the
identifier that was previously defined.

FRAME RATE – specifies the rate at which the display is redrawn (for the video workstation). In almost
all cases, the Frame Rate should be set to "60 Hz". However, if you operate the workstation near heavy
machinery that is powered by a 50 Hertz source the terminal may display characters that jump and
waver. Setting the Frame Rate to "50 Hz" can eliminate this problem. To alter the Frame Rate, position
the cursor in the field containing the Frame Rate and press the softkey labeled "ALTER FIELD".

NUMERIC KEYPAD 'Tab' FUNCTION – specifies the function of the key labeled "Tab" located in the
Numeric Keypad of the video workstation. This key can be configured such that its function is identical
to that of the ⌑TAB⌑ key (located in the Typewriter Block of the keyboard) or that of the ⌑RETURN⌑ key.
Changing the function of the Numeric Keypad ⌑TAB⌑ key does not affect the function of the keyboard's
other ⌑TAB⌑ key. To change the function of the Numeric Keypad ⌑TAB⌑ key, position the cursor in
the field with the current definition and press the softkey labeled "ALTER FIELD".

```
┌─────────────────┐
│      NOTE       │
└─────────────────┘
```

Changing the function of the Numeric Keypad ⌑TAB⌑ key changes its
function for all video workstations connected to the system. If you change
the ⌑TAB⌑ key's function, notify all users of the system of the change.

NOTE

The XFIG part of the CONFIG utility allows you to change the functionality of the Numeric Keypad ⌐TAB⌐ key only on Video workstations. To change the functionality of the key on other workstations, refer to your computer's Operating and Managing manual.

Set Default Printer

If you want to print a copy of the entire system configuration, you must first specify which device the system should use when printing. To do this, select function 12 from the initial CONFIG menu.

Type the printer's device address and press (RETURN) when the system displays the following prompt:

Printer select code (use 8 for CRT)?

The value you input must correspond to the address set on the printer. If the printer is switched off or is not connected, an error occurs.

CONFIG automatically returns to the initial menu after an address is selected.

Printer Select Code Options

Device Address	Meaning
0 through 7	HP-IB addresses 0 through 7
8	CRT
10	Local workstation printer address
11 through 20	ASI ports 1 through 10
-1	Integrated serial port -1
-2	Integrated serial port -2

SERIAL CONFIGURATION TABLE

Device	Class	Type	Format	Speed	DROMs	Remarks
Printers						
HP 2225D (Thinkjet)	Printer	2225	8N1	9600	TIO	
HP 2563A/B	Printer	2563	8N1	9600	TIO	
HP 2603A	Printer	2603	8N1	9600	TIO	
HP 2686A (Laserjet)	Printer	268x	8N1	9600	TIO	
HP 2932A	Printer	293x	8N1	9600	TIO	
HP 2934A	Printer	293x	8N1	9600	TIO	
HP 2601	Printer	2601	8N1	9600	TIO & PTYPE	
HP 2602	Printer	2602	8N1	9600	TIO & PTYPE	
HP 905B	Printer	905B	8N1	9600	TIO & PTYPE	
Plotters						
HP 7440A	Terminal	26xx	8N1	9600	TIO	Not on Ports -1, -2
HP 7475A	Terminal	26xx	8N1	9600	TIO	Not on Ports -1, -2
HP 7550A	Terminal	26xx	8N1	9600	TIO	Not on Ports -1, -2
HP 7470A	Terminal	26xx	8N1	9600	TIO	Not on Ports -1, -2
Workstations						
HP 2392A	Workstn	2392	8N1	19200	PIO	
HP 150	Workstn	2392	8N1	19200	PIO	
HP 110 Portable Plus	Workstn	2392	8N1	19200	PIO	
HP Vectra	Workstn	2392	8N1	19200	PIO	
IBM PC, PC AT, PC XT	Workstn	2392	8N1	19200	PIO	
HP 2622D	Workstn	2622	8N1	9600	RIO	
HP 2649D	Workstn	2649	8N1	9600	RIO	
Data Entry Terminal						
HP 3081A	Terminal	26xx	8N1	2400	TIO	Not on Ports -1, -2
Other Devices						
HP 39800A Bar Code	Terminal	26xx	7O1	9600	TIO	Not on Ports -1, -2

```
NOTE
```

The above table gives no information about the hardware requirements for the support of each of the devices listed. If you have any questions about the support of a device on a particular model of the HP 250 or HP 260, contact your local Hewlett-Packard sales office, or your computer supplier.

BACKUP and SOFTWARE DUPLICATION

DATA INTEGRITY

There are no fixed rules which determine the level of protection you need against loss of data. You should determine the level of assurance which best suits your needs based on the following criteria.

1. **Frequency of Backups**

    The frequency with which you back up data depends on the value of the data, the difficulty of replacing any lost data and the rate at which the data changes. For example, backups might be created twice daily (once at noon and once at the end of the day) on systems where data is extremely valuable and changes rapidly. Systems where data does not change frequently may elect to create backups once daily or even once weekly.

2. **Levels of Data Integrity Checks in the Backup Process**

    Several backup utility programs have two modes of operation: copying data with checkread and copying data without checkread. Checkread is a procedure by which the system insures that each data value written to the destination medium is identical to the data value read from the original medium.

    Data copying with checkread is as easy to execute as is data copying without checkread. However, it is more time consuming than data copying without checkread since each byte of data written to the destination medium must be read and compared with the data read from the original medium.

    Data copying without checkread is the least time consuming mode of operation. Because the reliability of HP disc drives and their media is very high, backups produced without checkread rarely differ from those created with checkread.

3. **Data Space Available for Applications (for users of HP 7906 Disc Drives)**

    It is faster and easier to duplicate one fixed disc, rather than several removable cartridges. This means that you gain a major advantage if you can restrict application data bases and files to a fixed disc. Application programs, overlays, forms, and other non-changing files are then stored on the removable cartridge (preferably along with the system files so that the cartridge can be used to power up the machine).

You may decide that your best choice is a mix of duplication strategies. For example, you may schedule a daily backup without checkread and a weekly backup with checkread.

You should also be aware that such things as the cleanliness of the machine environment and proper storage of the duplicative cartridges can be crucial to the integrity of your data.

MULTI-USER CONSIDERATIONS

The backup program will not work if other users are accessing the disc while being backed up, or recovered, or the tape is involved. An error message is displayed to inform you of this problem. It is good practice to make sure that no one is using the system during any backup or recovery.

THE FULL VOLUME BACKUP UTILITY (FVBACK)

The FVBACK (full volume backup) program is a BASIC-language utility which allows you to rapidly copy the entire contents of a disc to a backup file contained on a cartridge tape. These backup files may also be restored from the tape to a disc using this program. Your system must have access to a cartridge tape drive (CTD) to use this program.

The FVBACK program can not be used to back up selected files from a disc. Each time you run FVBACK in its backup mode, the entire contents of the disc are copied to a cartridge tape. FVBACK does allow you to copy selected files from a backup on a cartridge tape to the disc from which you backed them up. The options of this restore facility are described later in this section.

If you want to back up only selected files from a disc, you should use the BACKUP program, which is described later in this section.

A special file type, BKUP, is used for the backup data. When more than one BKUP file is required, the FVBACK program will automatically allocate additional BKUP files. Additional files will be named the same as the first, but with a number appended to the name. For example, if the first backup file is named BACK, the second will be named BACK1 and the third will be named BACK2. Up to five characters may be entered as the first backup file name.

<div style="text-align:center">

NOTE

</div>

> The integrated cartridge tape drive of the HP 7942/46 Disc Drives and the drive of the 9144A stand-alone tape device incorporate their own "verify" function; each time data is written to the tape, the tape drive hardware automatically reads the data from the tape to ensure that the data format is valid. Therefore, when using an HP 7942/46's built-in cartridge tape drive, or the 9144A tape device, FVBACK's verify option is redundant and provides no additional data security for the additional time required to perform the verification.

To run FVBACK, execute the following:

RUN "FVBACK [*volume spec*]"

The initial menu is:

```
+-----------------------------------------------------------------------+
|                    FULL VOLUME BACKUP UTILITY                         |
|                                                                       |
|                                                                       |
|                                                                       |
|        BACKUP    - Backup an entire volume to a cartridge tape        |
|                                                                       |
|        RESTORE   - Restore files or volume from a cartridge tape      |
|                                                                       |
|                                                                       |
|                                                                       |
|                                                                       |
|   --------------------------------------------------------------      |
|   Please select a function.                                           |
|                                                                       |
|                                                                       |
|   ---------------------------------------------------------------     |
|  BACKUP  |      | RESTORE |     |  |     |      |      | EXIT         |
|          |      |         |     |  |     |      |      | PROGRAM      |
+-----------------------------------------------------------------------+
```

Clearly, there are two ways to use the FVBACK program.

You can use it to create a backup of the data on a disc by copying the entire contents of the disc to a cartridge tape. To use FVBACK in this way, press the BACKUP softkey.

The reason for making backups is, of course, to safeguard your data from loss in the event of a disc failure. Therefore, FVBACK allows you to copy data from a cartridge tape to a disc. To use FVBACK in this way, press the RESTORE softkey.

The BACKUP and RESTORE modes of the FVBACK program are described separately in the following sub-section.

Using FVBACK to Back Up an Entire Disc

The following paragraphs guide you through the backup procedure.

1. Press the BACKUP softkey from the initial menu of the FVBACK program. The system searches for all mass storage devices that are currently connected and powered-on. The names of these devices are displayed on a screen of the following type.

```
                         FULL VOLUME BACKUP UTILITY
                              BACKUP VOLUME


                 LABEL      DEVICE              COMMENT

                            7906 CART  :C2,4,0
                 SALES      7906 FIXD  :D2,4,0
                 SYSTEM      7941/42   :T2,5,0
                            FLEX DISC  :F2,6,0
                            FLEX DISC  :F2,6,1   unavailable




Please select source volume.


 ┌─────────┬─────────┬─────────┬─────────┬─────────┬─────────┬─────────┬─────────┐
 │         │  SALES  │ SYSTEM  │         │         │         │         │  EXIT   │
 │ :C2,4,0 │ :D2,4,0 │ :T2,5,0 │ :F2,6,0 │ :F2,6,1 │         │         │         │
 └─────────┴─────────┴─────────┴─────────┴─────────┴─────────┴─────────┴─────────┘
```

2. The above screen prompts you to select the source volume, that is the disc whose contents you want to back up. Press the softkey that has the name of this disc. The system now searches for all devices with cartridge tapes that are currently connected and powered-on. A screen of the following type appears, with the names of all such devices.

> **NOTE**
>
> On the above screen, the comment "unavailable" appears next to the FLEX DISC :F2,6,1. This is either because there is no floppy disc in the drive, or because the floppy disc has not been initialized.

```
                    FULL VOLUME BACKUP UTILITY
                         BACKUP VOLUME


          LABEL      DEVICE              COMMENT

                       CTD      :K2,5,1
```

```
Please select destination volume to contain backup file.
```

							EXIT
:K2,5,1							

3. The above screen prompts you to select the destination device, that is the tape device to which you want to copy the contents of the disc. Press the softkey that has the name of this tape device. A screen of the following type appears.

```
┌─────────────────────────────────────────────────────────────────────┐
│                    FULL VOLUME BACKUP UTILITY                         │
│                         BACKUP VOLUME                                 │
│                                                                       │
│   ┌───────────────────────────────────┐  ┌──────────────────────┐    │
│   │                                   │  │                      │    │
│   │   DATE (optional)    03/11/85     │  │ SOURCE      :T2,5,0  │    │
│   │                                   │  │                      │    │
│   │   TIME (optional)    12:33        │  │ DESTINATION :K2,5,1  │    │
│   │                                   │  │                      │    │
│   │   BACKUP FILE NAME   FVBFL        │  └──────────────────────┘    │
│   │                                   │                              │
│   └───────────────────────────────────┘                             │
│   ┌──────────────────────────────────────────────────────────────┐  │
│   │                                                                │  │
│   │  Comment (optional)   Weekly backup of HP 7942                 │  │
│   │                                                                │  │
│   └──────────────────────────────────────────────────────────────┘  │
│                         VERIFY IS OFF                                 │
│  ───────────────────────────────────────────────────────────────    │
│  Please change VERIFY or press CONTINUE.                              │
│                                                                       │
│                                                                       │
│ ┌──────────┬──────┬──────┬────────┬─┬──────────┬─────┬──────────┐     │
│ │ CONTINUE │      │      │        │ │ CHANGE   │     │ EXIT     │     │
│ │          │      │      │        │ │ VERIFY   │     │ PROGRAM  │     │
│ └──────────┴──────┴──────┴────────┴─┴──────────┴─────┴──────────┘     │
└─────────────────────────────────────────────────────────────────────┘
```

4. The purpose of the above screen is to allow you to store information about the backup you are making. The minimum information needed by the system is the name of the source volume, the name of the destination volume, and the name to be given to the backup file. You have already chosen the source and destination volumes, and you can not change these names on this screen. If you find that you have given the wrong name for either the source or the destination device, press the EXIT PROGRAM key to leave the FVBACK utility. If you want to choose a name for the backup file, move the cursor to the field opposite BACKUP FILE NAME, and type the name you want. If you want to use the default name that is already in the field, take no action.

If you want to store the date and time of the backup, type this information into the inverse video fields opposite DATE and TIME. If the TIMER DROM is loaded and the system date and time are set, these values will be displayed on the screen.

The Comment field is also optional; you can leave it blank or fill it with general information about the backup (for example, in the above screen, the backup is identified as a weekly backup of an HP 7942 disc).

The above screen allows you to decide whether to use the verify option with your backup. Press the CHANGE VERIFY softkey to alternate between "VERIFY IS OFF" and "VERIFY IS ON". Remember that if you are using an HP 9144A tape device or the integrated tape drive of the HP 7942A or the HP 7946 disc drives, the verify option offers no increase in security. The verify option is useful when you use another type of cartridge tape device, but it does increase the time taken to process a backup.

5. When you are ready to proceed with the backup, press the CONTINUE softkey. If you do not want to proceed with the backup, press the EXIT PROGRAM softkey to leave the FVBACK program.

6. During the backup process, a screen of the following type appears to inform you of the state of progress of the backup. This information is given in the form of the percentage of data that has been backed up. The "percent complete" message is updated every 1 megabyte. Therefore, if you had a 2 megabyte backup, the message would first read "0 percent complete". After 1 megabyte had been backed up, the message would read "50 percent complete".

   If at any time, you want to stop the backup, press the ABORT BACKUP softkey. Note that if you press the ABORT BACKUP softkey, the backup file on the cartridge tape is purged.

```
                    FULL  VOLUME  BACKUP  UTILITY
                           BACKUP  VOLUME


      DATE  (optional)    03/11/86          SOURCE       :T2,5,0

      TIME  (optional)    12:43             DESTINATION  :K2,5,1

      BACKUP FILE NAME    FVBFL


      Comment  (optional)    Weekly backup of HP 7942



Backup in progress, 80 percent complete


                                                              ABORT
                                                              BACKUP
```

7. If you decided to use the verify mode, before you started the backup, the backup file that has just been created will be verified before the end of the FVBACK procedure. The verify procedure checks the backup file in one megabyte pieces, and displays the following message after each piece has been successfully verified:

   Verify in progress, nn% complete.

Note that the verify mode only ensures that the data on the tape can be read. It does not compare the data on the tape to the data on the disc.

When the backup and optional verify are complete, the following screen will be displayed:

```
┌──────────────┐
│     NOTE     │
└──────────────┘
```

If the verify option is off, the message "Backup in Progress, 100% complete" does not mean that the backup is over. You must wait until the next screen is displayed before trying to start another operation.

```
┌──────────────────────────────────────────────────────────────────────────┐
│                      FULL VOLUME BACKUP UTILITY                            │
│                            BACKUP VOLUME                                   │
│                                                                            │
│   ┌────────────────────────────────────┐   ┌──────────────────────────┐   │
│   │                                     │   │                          │   │
│   │  DATE (optional)    03/11/86        │   │  SOURCE        :T2,5,0   │   │
│   │                                     │   │                          │   │
│   │  TIME (optional)    12:46           │   │  DESTINATION   :K2,5,1   │   │
│   │                                     │   └──────────────────────────┘   │
│   │  BACKUP FILE NAME   FVBFL           │                                  │
│   │                                     │                                  │
│   ├────────────────────────────────────────────────────────────────────┐  │
│   │                                                                      │  │
│   │  Comment (optional)   Weekly backup of HP 7942                       │  │
│   │                                                                      │  │
│   └──────────────────────────────────────────────────────────────────────┘│
│                                                                            │
│ ──────────────────────────────────────────────────────────────────────── │
│ Backup complete. Please select a function.                                 │
│                                                                            │
│ ──────────────────────────────────────────────────────────────────────── │
│ │RESTART│   │   │   │ ││   │   │   │  EXIT    │                            │
│ │       │   │   │   │ ││   │   │   │  PROGRAM │                            │
└──────────────────────────────────────────────────────────────────────────┘
```

8. If you want to return to the main screen of the FVBACK program, to perform another backup, press the RESTART softkey. If you want to leave the FVBACK program, press the EXIT PROGRAM softkey.

Notes on the Operation of FVBACK in Backup Mode

During the operation of FVBACK to make a backup, the following situations might occur. Notice the implications of each action you make.

If the ABORT BACKUP softkey is used to stop a backup, the backup file that was created is purged.

If the backup file you try to create already exists on the destination device you specified, the program gives you a message of the following type:

        FVBFL already on :K2,5,1. Purge?

In this case, if you want to purge the existing backup file, and create a new one, press the PURGE & CONTINUE softkey. If you do not want to purge the existing backup file, press the NO PURGE & RETURN softkey. The program returns to the initial menu.

Using FVBACK to Restore an Entire Disc

The following paragraphs guide you through the full-volume restore procedure.

1. Press the RESTORE softkey from the initial menu of the FVBACK program. The system searches for all tape devices that are currently connected and powered-on. The names of these devices are displayed on a screen of the following type.

```
                        FULL VOLUME BACKUP UTILITY
                                RESTORE


              LABEL      DEVICE            COMMENT

                         CTD      :K2,5,1





    _____
    Please select source volume containing backup file.

    _____
    |        |        |        ||        |        |        |  EXIT
    :K2,5,1  |        |        ||        |        |        |
```

2. The above screen prompts you to select the source volume, that is the tape device which contains the backup file that you want to restore to a disc. Press the softkey that has the name of this tape device. A screen of the following type appears.

```
                    FULL VOLUME BACKUP UTILITY
                            RESTORE


 1 BACK1
 2 FVBFL








 _____

Please enter the name of the backup file.


 _____
 |      |      |      |     ||      |      |      |      | EXIT |
 |      |      |      |     ||      |      |      |      |      |
```

3. The above screen displays the names of the backup files which reside on the tape device that you have selected. Type the name of the backup file that you want to restore and press the RETURN key. A screen of the following type appears.

```
┌──────────────────────────────────────────────────────────────────────┐
│                      FULL VOLUME BACKUP UTILITY                        │
│                              RESTORE                                   │
│                                                                        │
│                                                                        │
│              LABEL       DEVICE              COMMENT ·                  │
│                                                                        │
│                          7906 CART :C2,4,0                             │
│              SALES       7906 FIXD :D2,4,0                             │
│              SYSTEM       7941/42  :T2,5,0                             │
│                          FLEX DISC :F2,6,0                             │
│                          FLEX DISC :F2,6,1   unavailable               │
│                                                                        │
│                                                                        │
│                                                                        │
│                                                                        │
│                                                                        │
├──────────────────────────────────────────────────────────────────────┤
│ Please select destination volume.                                      │
│                                                                        │
│                                                                        │
├────────┬─────────┬─────────┬─────────┬──────────┬───────┬──────┬──────┤
│        │ SALES   │ SYSTEM  │         ││         │       │      │ EXIT │
│ :C2,5,0│ :D2,5,0 │ :T2,5,0 │ :F2,6,0 ││ :F2,6,1 │       │      │      │
└────────┴─────────┴─────────┴─────────┴──────────┴───────┴──────┴──────┘
```

4. The above screen displays all of the mass storage devices that are available for the restore, and prompts you to select the destination volume, that is the device to which you want to restore your backup file. Press the softkey with the name of the device to which you want to restore the backup file.

NOTE

The FVBACK program reads the header of the BKUP file to determine the type of device from which the backup was created. This information is used to make sure that the backup is restored to the correct type of device. For example, if the restore routine determines that a BKUP file is a full-volume backup of an HP 7946 disc, it allows that backup to be restored only to an HP 7945/46 disc drive.

5. If the destination device you selected contains files already, a screen of the following type is displayed to warn you that the full-volume restore will overwrite the directory of the destination device. This means that the data that is already on the disc will be lost. This is not normally a problem when you make a full-volume restore, because you know that you want to replace the data on the disc with the data in the backup file.

```
                    FULL VOLUME BACKUP UTILITY
                             RESTORE


           LABEL     DEVICE              COMMENT

                     7906 CART :C2,4,0
           SALES     7906 FIXD :D2,4,0
           SYSTEM     7941/42  :T2,5,0
                     FLEX DISC :F2,6,0
                     FLEX DISC :F2,6,1   unavailable




Please press RESTART, CONTINUE or EXIT

WARNING:  DESTINATION CONTAINS FILES

  RESTART               CONTINUE                          EXIT
```

6. If the above screen appears, you have three choices. If you want to proceed with the full volume restore, press the CONTINUE softkey. If you want to return to the initial menu of the FVBACK program, press the RESTART softkey. If you want to leave the FVBACK program, press the EXIT PROGRAM softkey.

7. If you have decided to continue with the restore, the following screen appears.

```
┌─────────────────────────────────────────────────────────────────────┐
│                    FULL VOLUME BACKUP UTILITY                         │
│                            RESTORE                                    │
│                                                                       │
│                                                                       │
│        RESTORE VOLUME   - Restore an entire volume to same destination│
│                                                                       │
│                                                                       │
│        RESTORE FILES    - Restore a single file, multiple files or all files │
│                                                                       │
│                           to any destination                          │
│                                                                       │
│                                                                       │
│                          CHECKREAD IS OFF                             │
│                                                                       │
│                                                                       │
├───────────────────────────────────────────────────────────────────── │
│ Please select a function.                                             │
│                                                                       │
│                                                                       │
├──────────┬──────┬──────┬──────────┬──┬──────────┬──────┬──────────────┤
│ RESTORE  │      │      │ RESTORE  │  │ CHANGE   │      │    EXIT      │
│ VOLUME   │      │      │  FILES   │  │CHECKREAD │      │              │
└──────────┴──────┴──────┴──────────┴──┴──────────┴──────┴──────────────┘
```

8. The **CHANGE CHECKREAD** softkey allows you to decide whether or not to use the checkread option with the restore.

9. Press the **RESTORE VOLUME** softkey. A screen of the following type appears, to give you the details of the backup file that you are about to restore.

```
                      FULL VOLUME BACKUP UTILITY
                           RESTORE VOLUME


    DATE (optional)      03.11.86           SOURCE         :K2,5,1

    TIME (optional)      08:50              DESTINATION    :T2,5,0

    BACKUP FILE NAME     FVBFL


    Comment (optional)    Weekly backup of HP 7942



  Please verify information and press CONTINUE or EXIT.


  CONTINUE                                                            EXIT
```

10. Press the CONTINUE softkey to proceed with the full-volume restore. During the restore, a screen of the following type appears to inform you of the status of the restore process, in percentage terms. If at any time you want to stop the restore, press the ABORT RESTORE softkey. Remember that if you abort a restore the destination volume (that is the disc to which you were making the restore) will have no usable data on it. Refer to the notes at the end of this sub-section for information on what to do after aborting a restore.

```
+---------------------------------------------------------------------+
|                  FULL VOLUME BACKUP UTILITY                          |
|                      RESTORE VOLUME                                  |
|                                                                     |
|   +------------------------------------+    +--------------------+  |
|   |                                    |    |                    |  |
|   |  DATE (optional)     03.11.86      |    |  SOURCE    :K2,5,1  |  |
|   |                                    |    |                    |  |
|   |  TIME (optional)     09:00         |    |  DESTINATION :T2,5,0|  |
|   |                                    |    |                    |  |
|   |  BACKUP FILE NAME    FVBFL         |    +--------------------+  |
|   |                                    |                           |
|   +----------------------------------------------------------------+|
|   |                                                                ||
|   |  Comment (optional)   Weekly backup of HP 7942                 ||
|   |                                                                ||
|   +----------------------------------------------------------------+|
|                                                                     |
|---------------------------------------------------------------------|
| Restore in progress,50% complete                                    |
|                                                                     |
|-------+-----+-----+-----+----+----+-----+-----+-----+-------+--------|
|       |     |     |     |    |    |     |     |     |       | ABORT  |
|       |     |     |     |    |    |     |     |     |       | RESTORE|
+---------------------------------------------------------------------+
```

11. If you specified the CHECKREAD ON option before starting the restore, the data transferred from tape to disc is verified with checkreads as it is restored. When the restore is complete, a screen of the following type is displayed.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                      FULL VOLUME BACKUP UTILITY                               │
│                         RESTORE VOLUME                                        │
│   ┌──────────────────────────────────────┐   ┌──────────────────────────┐   │
│   │                                       │   │                          │   │
│   │   DATE (optional)    03.11.86         │   │   SOURCE       :K2,5,1   │   │
│   │                                       │   │                          │   │
│   │   TIME (optional)    09:05            │   │   DESTINATION  :T2,5,0   │   │
│   │                                       │   │                          │   │
│   │   BACKUP FILE NAME   FVBFL            │   └──────────────────────────┘   │
│   │                                       │                                  │
│   └───────────────────────────────────────────────────────────────────┐     │
│   │   Comment (optional)    Weekly backup of HP 7942                    │     │
│   │                                                                     │     │
│   └─────────────────────────────────────────────────────────────────────┘   │
│                                                                               │
│   Recovery complete. Please select a function.                                │
│                                                                               │
│   ┌────────┬──────┬──────┬──────┬──────┬──────┬──────┬─────────┐             │
│   │RESTART │      │      │      │      │      │      │ EXIT    │             │
│   │        │      │      │      │      │      │      │ PROGRAM │             │
│   └────────┴──────┴──────┴──────┴──────┴──────┴──────┴─────────┘             │
└─────────────────────────────────────────────────────────────────────────────┘
```

12. If you want to return to the main screen of the FVBACK program, to perform another restore, press the RESTART softkey. If you want to leave the FVBACK program, press the EXIT PROGRAM softkey.

```
┌──────────┐
│   NOTE   │
└──────────┘
```

If a restore is aborted, the destination device will have no files on it. Run INIT, and then select PURGE ALL to set the available space correctly.

Using FVBACK to Restore Selected Files to a Disc

It might be that you do not want to restore an entire backup file to a disc; instead you might want to restore only one or more files from the backup file to a disc. FVBACK allows you to select the files you want to restore in any of the following ways:

- full-volume restore (see previous sub-section)

- single file

- multiple files

- all files (excluding system files and DROMs)

- all files that currently exist in the backup file but do not exist on the disc

These options are described in the following paragraphs.

General Starting Procedure

1. Press the RESTORE softkey from the initial menu of the FVBACK program. The system searches for all cartridge tape devices that are currently connected and powered-on. The names of these devices are displayed on a screen of the following type.

```
                 FULL VOLUME BACKUP UTILITY
                         RESTORE


         LABEL      DEVICE           COMMENT

                     CTD    :K2,5,1




                                    Computer
                                    Museum




 _____
 Please select source volume containing backup file.
 _____
                                                    EXIT
  :K2,5,1
```

2. The above screen prompts you to select the source volume, that is the tape device that contains the backup file which you want to use to restore files to a disc. Press the softkey that has the name of this tape device. A screen of the following type appears.

```
+--------------------------------------------------------------+
|                   FULL VOLUME BACKUP UTILITY                 |
|                           RESTORE                            |
|                                                              |
|   1 BACK1                                                    |
|   2 FVBFL                                                    |
|                                                              |
|                                                              |
|                                                              |
|                                                              |
|                                                              |
|                                                              |
|                                                              |
|                                                              |
|                                                              |
|--------------------------------------------------------------|
| Please enter the name of the backup file.                    |
|                                                              |
|                                                              |
|----+------+------+------+------+------+------+------+---------|
|    |      |      |      ||     |      |      |      |  EXIT   |
|    |      |      |      ||     |      |      |      |         |
+--------------------------------------------------------------+
```

3. The above screen displays the names of the backup files which reside on the tape device that you have selected. Type the name of the backup file that you want to restore and press the RETURN key. A screen of the following type appears.

```
┌─────────────────────────────────────────────────────────────────────┐
│                    FULL VOLUME BACKUP UTILITY                         │
│                            RESTORE                                    │
│                                                                       │
│                                                                       │
│            LABEL        DEVICE                 COMMENT                 │
│                                                                       │
│                         7906 CART  :C2,4,0                            │
│            SALES        7906 FIXD  :D2,4,0                            │
│            SYSTEM        7941/42   :T2,5,0                            │
│                         FLEX DISC  :F2,6,0                            │
│                         FLEX DISC  :F2,6,1     unavailable            │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
├───────────────────────────────────────────────────────────────────  │
│                                                                       │
│ Please select destination volume.                                     │
│                                                                       │
│                                                                       │
├──────────┬──────────┬──────────┬──────────┬─────────┬──────┬──────┬──────┤
│          │  SALES   │ SYSTEM   │          ││         │      │      │ EXIT │
│ :C2,5,0  │ :D2,5,0  │ :T2,5,0  │ :F2,6,0  ││ :F2,6,1 │      │      │      │
└──────────┴──────────┴──────────┴──────────┴─────────┴──────┴──────┴──────┘
```

4. The above screen displays all of the mass storage devices (excluding cartridge tape devices) that are currently connected and powered-on. Press the softkey that has the name of the device to which you want to restore files.

5. If the destination device you selected contains files already, the following message will be displayed:

    WARNING: DESTINATION CONTAINS FILES

    The message is not important in this case, because the restore does not automatically purge the existing files. Therefore, you can ignore the message.

6. Press the CONTINUE softkey to proceed with the restore. The following screen appears.

```
                    FULL VOLUME BACKUP UTILITY
                             RESTORE



        RESTORE VOLUME   - Restore an entire volume to same destination


        RESTORE FILES    - Restore a single file, multiple files or all files

                           to any destination


                         CHECKREAD IS OFF



 _____

 Please select a function.


 _____
 | RESTORE |       |       | RESTORE ||       | CHANGE    |       | EXIT  |
 | VOLUME  |       |       |  FILES  ||       | CHECKREAD |       |       |
```

7. The CHANGE CHECKREAD softkey allows you to select the CHECKREAD IS ON or the CHECKREAD IS OFF mode of operation.

8. Press the RESTORE FILES softkey. An information screen appears to show you the details of the backup file, from which you are about to restore files. Press the CONTINUE softkey to proceed with the restore. The following screen will appear.

```
                        FULL VOLUME BACKUP UTILITY
                             RESTORE FILES
      SINGLE FILE        - Select a file and recover it

      MULTIPLE FILES     - Recover selected files

      ALL FILES          - Recover all files

      ALL NON EXISTING   - Recover all non existing files

      PURGE IS OFF       - Confirm purging before restore a file

      PURGE IS ON        - Purge file if already exists

      CATALOG            - Catalog all files in backup file on display or printer

      PRINTER IS #       - Selected printer for CATALOG
    ─────────────────────────────────────────────────────────────────────────
   Please select a function or change PURGE ALL option.


   ┌─────────┬─────────┬──────────┬─────────┬┬────────┬─────────┬──────────┬──────┐
   │ SINGLE  │MULTIPLE │ALL FILES │ALL  NON ││ PURGE  │ CATALOG │ PRINTER  │ EXIT │
   │ FILE    │ FILES   │          │EXISTING ││ IS  OFF│         │*DISPLAY* │      │
   └─────────┴─────────┴──────────┴─────────┴┴────────┴─────────┴──────────┴──────┘
```

Listing the Contents of the Backup File

The FVBACK program includes a feature that allows you to list the names of the files that are contained in the backup file that you specified earlier. By default, the list of files will be displayed on your workstation screen. If you want to print the list, press the PRINTER/DISPLAY softkey until the softkey displays **PRINTER IS X** (where X is the address of the printer on which you want to print the list of files). Use the following procedure to list the names of the files in the backup file.

1. Press the CATALOG softkey from the above screen. A new screen appears, and gives you the following options:

   • CAT ALL FILES; press this softkey if you want to list all of the files in the backup file. The first set of files on the backup file is then displayed on the screen. To list more files, press the CONTINUE softkey. To stop the catalog, and return to the screen shown above, press the ABORT CATALOG softkey.

   • NO SPEC; press this softkey if you want to list only files of a particular type (for example, DATA files).

   • input a catalog specifier to restrict the catalog to files beginning with the given string of characters. For example, input ST to catalog only files that begin with the letters ST. If there are more files in the catalog than will fit on the screen, press the CONTINUE softkey to list the next set of files. To stop the catalog, press the ABORT CATALOG softkey.

2. If you pressed the NO SPEC softkey from the previous screen, a screen of the following type appears. Press the softkey with the type of file that you want to catalog. You can select more than one softkey. Each softkey you press will have a "v" placed above it on the screen, to signify that it is currently included in the catalog. Pressing such a softkey again removes the "v" and excludes it from the catalog.

The MORE KEYS softkey displays another set of file types. When you have selected the types of file you want to include in the catalog, press the END SELECT softkey.

```
                       FULL VOLUME BACKUP UTILITY
                           RECOVER FILES


                                              BACKUP FILE:        :K
                                                            03.11.86

                                              DESTINATION:        :T









_____
Please select the file types.


_____
|        |        |        |        ||        |         |          |        |
|  PROG  |  DATA  |  FORM  |  BKUP  ||  ROOT  |ALL FILE |MORE KEYS |  END   |
|        |        |        |        ||  DSET  | TYPES   |          | SELECT |
_____
```

3. The first set of files that meet the qualifications that you have specified is displayed on the screen. To list more files, press the CONTINUE softkey. To stop the catalog, press the ABORT CATALOG softkey.

Using the Various Versions of the FVBACK Restore

In the following paragraphs, the various methods of using the file-selective restore are described.

Selecting the PURGE IS ON/PURGE IS OFF Option

Before you begin to select files for restore, you must decide what you want to do if a file that is to be restored from the backup file already exists on the destination disc. There are two options:

- PURGE IS ON - this option automatically purges the file from the disc and then restores the file of the same name from the backup file to the disc.

- PURGE IS OFF - this option asks you whether you want to purge a file from the disc, each time the program finds a file on the disc with the same name as a file that is to be restored from the backup file.

The PURGE IS ON/PURGE IS OFF options are alternated by pressing the softkey labelled PURGE IS ON (or PURGE IS OFF).

Restoring a Single File

Use the following procedure to restore a single file from a backup file, using FVBACK.

Press the SINGLE FILE softkey from the screen that displays all the selective-file restore options. A screen appears and prompts you to type the name of the file to be restored. Type the name and press (RETURN). The file is then restored.

Restoring All Files

Use the following procedure to restore all the files from a backup file using the FVBACK program. Notice that system files and DROMs can not be restored using the ALL FILES option of the FVBACK restore.

Press the ALL FILES softkey from the screen that displays all of the selective-file restore options. All of the files in the backup file are then restored to the disc.

Restoring All Files that Exist on Tape but not on Disc

Press the ALL NON EXISTING softkey from the screen that displays all of the selective-file restore options. The program restores only files that are present in the backup file on the cartridge tape but absent from the disc (destination volume).

Restoring Multiple Files

Press the MULTIPLE FILES softkey from the screen that displays all of the selective-file restore options. The following screen appears, and allows you to choose from several methods of restoring any number of files between two and the total number of files in the backup file.

Backup and Software Duplication

```
                      FULL VOLUME BACKUP UTILITY
                           RECOVER FILES



        USE CATALOG    - Select files using a catalog


        SINGLE INPUT   - Input of the filenames





  _____

  Please select a function.


  _____
  |   USE   |         |         | SINGLE  ||         |         |         |      |
  | CATALOG |         |         |  INPUT  ||         |         |         | EXIT |
  |_____|_____|_____|_____||_____|_____|_____|_____|
```

Use the following procedure to restore files, using the method that is most suitable to you.

1. If you want to restore a small number of files, press the SINGLE INPUT softkey. The program prompts you to input the names of the files you want to restore, one by one. When you have input the names of all the files you want to restore, press the END OF INPUT softkey. The program will then start to restore the files you have specified.

   If you want to restore a large number of files, it is easier to use a catalog of files, from which you can select the files that you want to restore.

2. To build a catalog of files from the backup file, press the USE CATALOG softkey. The next screen gives you the following options:

   • CAT ALL FILES; press this softkey if you want to catalog all of the files in the backup file

   • NO SPEC; press this softkey to display a screen which allows you to select the type or types of files from the backup file that you want to catalog

   • input a catalog specifier to restrict the catalog to files beginning with the given string of characters. For example, input RE to catalog only files that begin with the letters RE.

3. If you pressed the NO SPEC softkey from the previous screen, a screen of the following type appears. Press the softkey with the type of file that you want to catalog. You can select more than one softkey. Each softkey you press will have a "v" placed above it on the screen, to signify that it is currently included in the catalog. Pressing such a softkey again removes the "v" and excludes it from the catalog.

   The MORE KEYS softkey displays another set of file types. When you have selected the types of file you want to include in the catalog, press the END SELECT softkey.

```
┌─────────────────────────────────────────────────────────────────────────┐
│                      FULL VOLUME BACKUP UTILITY                           │
│                         RECOVER FILES                                     │
│                                                                           │
│                                                                           │
│                                    BACKUP FILE:          :K               │
│                                                       03.11.86            │
│                                                                           │
│                                    DESTINATION:          :T               │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│───────────────────────────────────────────────────────────────────────  │
│ Please select the file types.                                            │
│                                                                           │
│                                                                           │
│───────────────────────────────────────────────────────────────────────  │
│  PROG  │  DATA  │  FORM  │  BKUP  ║ ROOT  │ALL FILE│MORE KEYS│   END      │
│        │        │        │        ║ DSET  │ TYPES  │         │  SELECT    │
└─────────────────────────────────────────────────────────────────────────┘
```

4. The next screen lists the catalog of files, according to the specifications you gave. The screen also shows the number of files in the backup file, and the number of files above the arrow displayed. It also shows the number of marked files (that is the number of files that will be restored when the END OF MARKING softkey is pressed).

The FILE UP, FILE DOWN, PAGE UP and PAGE DOWN softkeys are used to move the arrow around the screen and display new files from the catalog.

To mark a file for restore, move the arrow opposite its name, and press the MARK FILE softkey. If you wish to remove the mark from a file, press the DELETE IS OFF softkey, to make it read DELETE IS ON, and press the MARK FILE softkey. The file opposite the arrow will be unmarked.

The BEGIN BLOCK softkey allows you to mark a number of files together. Move the arrow to the file you want to mark, and press BEGIN BLOCK. Then move the arrow to the last file you want to mark, and press the END BLOCK softkey. All the files between the two specified will be marked to be restored.

You can also use the BEGIN BLOCK softkey, when DELETE IS ON, to remove the mark from a number of files together.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                        FULL VOLUME BACKUP UTILITY                             │
│                            RECOVER FILES                                      │
│                                                                               │
│ NAME     PRO    TYPE     REC/FILE    BYTES/RECORD                             │
│ FVBAC1   RO     PROG        47           256      <--    BACKUP FILE:    :K   │
│ FVBAC2   RO     PROG        45           256                        03.11.86  │
│ FVBACK   RO     PROG        57           256                                  │
│ INIT     RO     PROG        99           256             DESTINATION:    :T   │
│ LK3000   RO     PROG        50           256                                  │
│ MFRM     RO     PROG        61           256                                  │
│ MFORM    RO     PROG        56           256                       FILES      │
│ PFRM     RO     PROG        48           256                                  │
│ QRMNO1          PROG         9           256             IN BACKUP      900   │
│ QRUTO1          PROG        15           256                                  │
│ QRUTO3          PROG        20           256               <--   AT      27   │
│ QRCIO1          PROG        20           256                                  │
│ QRCIO2          PROG        48           256                 MARKED       0   │
├─────────────────────────────────────────────────────────────────────────────┤
│ Please select a function or change DELETE option.                            │
│                                                                               │
│                                                                               │
├──────────┬─────────┬───────────┬──────────┬───────────┬─────────┬─────────┬──┤
│MARK FILE │ DELETE  │ FILE DOWN │ FILE UP  │ PAGE DOWN │ PAGE UP │  BEGIN  │END OF │
│          │ IS OFF  │           │          │           │         │  BLOCK  │MARKING│
└──────────┴─────────┴───────────┴──────────┴───────────┴─────────┴─────────┴──┘
```

5. When you have marked the files you want to restore, press the END OF MARKING softkey. The program starts to make the actual restore of the files.

NOTE

A maximum of 100 files can be restored at one time with the use of the USE CATALOG feature of the FVBACK program. If you want to restore more than 100 files, run FVBACK twice (or several times). If you try to specify more than 100 files to be restored, using the USE CATALOG feature, you will receive an error message.

General Conclusion of Selected-File Restore

When the FVBACK program has finished restoring the files you specified using the ALL FILES, ALL NON EXISTING or MULTIPLE FILES options, a screen of the following type is displayed. This screen either confirms that all of the specified files were correctly restored, or displays the names of those files which were not correctly restored.

```
┌─────────────────────────────────────────────────────────────────────┐
│                    FULL VOLUME BACKUP UTILITY                         │
│                        RECOVER FILES                                  │
│                                                                       │
│                                                                       │
│              ERROR TABLE OF NOT RECOVERED FILES                       │
│                                                                       │
│  Recovery complete --- all selected files recovered.                  │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
├───────────────────────────────────────────────────────────────────┤
│  Please press CONTINUE or EXIT.                                       │
│                                                                       │
│                                                                       │
├──────────┬──────┬──────┬──────┬─┬──────┬──────┬──────┬────────────┤
│ CONTINUE │      │      │      │ │      │      │      │    EXIT    │
│          │      │      │      │ │      │      │      │            │
└──────────┴──────┴──────┴──────┴─┴──────┴──────┴──────┴────────────┘
```

If you want to return to the initial screen of the FVBACK program, press the CONTINUE softkey. If you want to leave the FVBACK program, press the EXIT softkey.

Performance of FVBACK

The approximate speed of a full volume backup using the FVBACK program to back up a fixed disc to a cartridge tape is between one and two Mbytes/minute. This value is provided only to help you to plan your backup operations, and is in no sense a guarantee.

MEDIA DUPLICATION (DUPL)

The DUPL (duplicate) program is a BASIC-language utility which allows you to rapidly copy the entire contents of one medium to another compatible medium. DUPL is distributed with the other utilities on either disc or tape. The DUPL program also allows you to produce multiple duplicates of a flexible disc or a cartridge tape by using a temporary file on a hard disc. This is known as "indirect duplication" to differentiate it from the normal, direct use of DUPL.

NOTE

The destination (new) disc must be formatted for use with the HP 260 (standard HP 260 format, HP interchange format or IBM format) before DUPL can run. Refer to the section of this manual titled "MEDIA INITIALIZATION".

Two mass storage devices are compatible for use with the DUPL utility if the following statements are true:

- the directory structure of the devices are the same

- there is enough room on the destination device to store the entire contents of the source device

The DUPL program is particularly useful for the following tasks:

- copy a microfloppy to another microfloppy

- copy a cartridge tape to another cartridge tape of the same length

- copy an 8-inch floppy to another 8-inch floppy

- copy a 7906 hard disc to a 7906 removable cartridge

- copy a 7906 removable cartridge to another 7906 removable cartridge

In the following sub-sections, the procedures for using the DUPL program in direct mode, and in indirect mode are separately described.

Direct Duplication

1. To run DUPL, execute the following:

   RUN "DUPL [*volume spec*]"

A screen of the following type appears.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                         DISC DUPLICATE UTILITY                                │
│                                                                               │
│                                                                               │
│              LABEL        DEVICE                  COMMENT                     │
│                                                                               │
│                           MICRODISC  :A2,2,1                                  │
│                            9133/34   :M2,2,0                                  │
│                           MICRODISC  :A2,3,1                                  │
│              ACCT          9133/34   :M2,3,0                                  │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│ ─────────────────────────────────────────────────────────────────────────── │
│ Please select source device                                                  │
│                                                                               │
│                                                                               │
├──────────┬─────────┬──────────┬─────────┬──┬──────┬──────┬──────┬────────────┤
│MICRODISC │ 9133/34 │MICRODISC │ 9133/34 │  │      │      │      │   EXIT     │
│:A2,2,1   │ :M2,2,0 │:A2,3,1   │ :M2,3,0 │  │      │      │      │  PROGRAM   │
└──────────┴─────────┴──────────┴─────────┴──┴──────┴──────┴──────┴────────────┘
```

2. The above screen shows all the mass storage devices that are currently connected and powered-on. If a device is marked unavailable, it is either not installed or it has not been initialized.

   Press the softkey with the name of the source device, that is the device whose contents you want to duplicate. A screen of the following type appears.

```
                        DISC DUPLICATE UTILITY


              LABEL      DEVICE              COMMENT

                         MICRODISC :A2,2,1   SOURCE
                         9133/34   :M2,2,0
                         MICRODISC :A2,3,1
              ACCT       9133/34   :M2,3,0




```
_____

Please select destination device


```
|MICRODISC| 9133/34 |MICRODISC| 9133/34  |  |        |        |        | EXIT |
| :A2,2,1 | :M2,2,0 | :A2,3,1 | :M2,3,0  |  |        |        |        |      |
```

3. The above screen prompts you to select the destination device, that is the device to which you want to copy the data from the source device. Press the softkey with the name of the device you want to use as the destination. A new screen appears, with the three softkeys: CONTINUE, EXIT and CHANGE CHECKREAD.

If you do not want to use the checkread function during the duplication process, press the CHANGE CHECKREAD softkey. The message CHECKREAD OFF is displayed.

Press the CONTINUE softkey to continue with the duplication.

4. A screen of the following type is displayed during the duplication, to inform you of its progress. If you want to abort the duplication at any time, press the EXIT softkey.

<div align="center">

NOTE

</div>

If you abort the duplication, the destination device is purged, and it must be initialized before you can use it again.

Backup and Software Duplication

```
                    DISC DUPLICATE UTILITY


        LABEL      DEVICE                COMMENT

                   MICRODISC :A2,2,1     SOURCE
                    9133/34  :M2,2,0
                   MICRODISC :A2,3,1     DESTINATION
        ACCT        9133/34  :M2,3,0




User area duplication 3% completed.          CHECKREAD ON

Duplication in progress.


|      |      |      |      ||      |      |      |  EXIT  |
|      |      |      |      ||      |      |      |        |
```

5. When the duplication is complete, a screen of the following type appears, and prompts you to select a destination label option. There are three options:

- If you want the volume name of the destination device to be the same as the volume name of the source device, press the SOURCE LABEL softkey.

- If you want to keep the old volume name of the destination device, press the OLD LABEL softkey.

- If you want to assign a new volume label to the destination device, press the NEW LABEL softkey. Then type the new label and press (RETURN).

```
                           DISC DUPLICATE UTILITY


               LABEL        DEVICE              COMMENT

                            MICRODISC :A2,2,1   SOURCE
                            9133/34   :M2,2,0
                            MICRODISC :A2,3,1   DESTINATION
               ACCT         9133/34   :M2,3,0
```

DUPLICATION COMPLETE
_____

Please select destination label option.

_____

| OLD LABEL | SOURCE LABEL | NEW LABEL | | | | | | EXIT |

6. A new screen appears. Press the RESTART softkey to return to the initial screen of the DUPL program. Press the EXIT softkey to leave the DUPL program.

Indirect Duplication

The DUPL utility allows copying the contents of one flexible disc or tape to another using the same drive by establishing a temporary file on another mass storage device. DUPL copies the medium to the temporary file and then recopies it to a second medium inserted in the source drive. Use the following procedure to conduct an indirect duplication.

<div style="text-align:center">

NOTE

</div>

Using indirect duplication, it is not possible to duplicate a medium containing more than 65,534 sectors of data. For example, it is not possible to copy a 600 foot cartridge tape using indirect duplication if the data on that tape occupies more than 65,534 sectors; attempting to do so causes DUPL to generate an error message.

1. To perform an indirect volume duplication, run DUPL as described earlier, but specify the same drive as both source and destination devices. Then specify the device to hold the temporary file.

   After the source medium has been copied to the temporary file, a screen of the following type is displayed. Remove the source medium from the drive, and insert the destination medium. Then press the CONTINUE softkey.

```
┌──────────────────────────────────────────────────────────────────────────┐
│                         DISC DUPLICATE UTILITY                             │
│                                                                            │
│                                                                            │
│          LABEL        DEVICE                   COMMENT                      │
│                                                                            │
│                       CTD     :K2,5,1                                      │
│                    7945/46    :U2,5,0                                      │
│                  MICRODISC    :A2,2,1                                      │
│                    9133/34    :M2,2,0        TEMP FILE                      │
│                                                                            │
│                                                                            │
│                                                                            │
│                                                                            │
│  COPY COMPLETE                                                             │
│ ────────────────────────────────────────────────────────────────────────│
│ Please insert the destination disc and press CONTINUE                      │
│                                                                            │
│                                                                            │
│ ┌──────────┬────────┬────────┬────────┬┬────────┬────────┬─────┬────────┐ │
│ │CONTINUE  │        │        │        ││        │        │     │ EXIT   │ │
│ └──────────┴────────┴────────┴────────┴┴────────┴────────┴─────┴────────┘ │
└──────────────────────────────────────────────────────────────────────────┘
```

2. After the temporary file has been copied to the destination device, the program asks you if you want to make another copy of the temporary file. If you want to make another copy, remove the first destination medium, insert the second destination medium, and press the ANOTHER COPY softkey.

   If you do not want to make another copy of the temporary file, press the RESTART softkey to return to the initial screen of the DUPL program, or press the EXIT PROGRAM softkey to leave the DUPL program.

NOTE

Pressing the RESTART or EXIT softkey purges the temporary file.

THE BACKUP PROGRAM

The BACKUP program is a versatile utility that is generally useful to you when you safeguard your data from loss due to disc failure or operator mistakes.

The BACKUP program allows you to store the contents of several non-database files onto one backup file. The source and backup files must be on different volumes. The BACKUP utility will support a backup of any media type to any other media type. Typical applications would be putting parts of several flexible discs onto one disc, or copying the contents of a fixed disc into a backup file on a removable tape cartridge. The BACKUP process takes about 9 minutes to store 1.2 Mbytes of data from a hard disc. The volume containing the BACKUP utility must be on-line during the operation of the utility.

```
NOTE
```

The BACKUP program can not be used to copy data-base files. To back up data-base files, use the DBSTORE and DBRESTORE statements, as described later in this section of this manual.

The performance of this utility is greatly enhanced if it resides on a hard disc. The ROUTIL utility may be used to copy the BACKUP utility from the distribution medium onto hard disc.

```
NOTE
```

The volume containing the BACKUP utility can not be removed during the operation of the utility.

Procedures and Recommendations

A "weekly" backup saves all of the files which are on the volume being processed. A "daily" backup saves all of the files which have been created or accessed since the last backup. You can use this feature only if it has been configured in the XFIG portion of the CONFIG utility program. Refer to the section of this manual titled "System Configuration". (An access is any operation on that particular file. Running a program is an access of that program file. Assigning to a data file is an access of that data file. Cataloging a disc is not an access to a file, since no particular file was specified.)

If your computer installation regularly creates or updates non-IMAGE files, you should back up your system on a daily basis; otherwise if your disc malfunctions, work done since the last backup might be lost.

A simple procedure would be to perform a weekly backup on Friday and daily backups on Monday through Thursday. Be careful not to erase any of the backup files until the next weekly backup is completed! A weekly backup will generally require more time to perform than a daily backup. However, regular weekly backups are desirable because recovery of a volume requires the processing of all of the daily backups since the last weekly backup. If you have a month of daily backups to process, recovery will take a long time.

Backup and Software Duplication

It is often useful to maintain a backlog of the last several weekly backups to insure against losing files which were accidentally purged. It is good business practice to maintain a recent backup at a different site to protect your business records against an accident such as fire.

Procedure for Running BACKUP

1. To run BACKUP, execute the following:

RUN "BACKUP [*volume spec*]"

The initial menu appears.

```
                          VOLUME BACKUP UTILITY
                              INTRODUCTION

The HP260 Volume Backup Utility will allow you to back up files on one volume to
a file of type BKUP on another volume.  If necessary, a set of files with the
same name on several volumes will be used to perform the backup.  Individual
files or an entire volume may be backed up.

Important notes:  Database files can not be backed up with this utility.  The
                  volume containing the Backup Utility may not be removed during
                  the operation of the utility.


      Date  ▦▦▦▦       Time ▦▦▦       Initials ▦▦▦

   Comments ▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦

_____

Please complete this form


_____
| PROCESS |        |       |        | |        |        |        |   END    |
|  DATA   |        |       |        | |        |        |        | UTILITY  |
```

2. The above screen allows you to input bookkeeping information about this backup. The date and time are optional and are system supplied if the system date and time are set. Initials and comments are optional. The "comments" field on this form allows you to enter up to 67 characters of notes you might want to make about this backup. When the PROCESS DATA softkey is pressed, a syntax check is made of the data entered. Errors cause a series of messages to appear, indicating problems and asking for new input. The following screen appears, and prompts you to select the backup mode.

SEP 86
4-39

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                          VOLUME BACKUP UTILITY                                │
│                          BACKUP MODE SELECT                                   │
│                                                                               │
│ The HP260 Volume Backup Utility provides three modes for backing up volumes.  │
│ Select any one of the three.  Remember:  None of them will backup databases.  │
│                                                                               │
│ WEEKLY BACKUP    This mode backs up all files on the volume you will specify. │
│                                                                               │
│ DAILY BACKUP     This will backup every file on the volume which has been     │
│                  accessed since it was marked as backed up.                   │
│                                                                               │
│ SELECTED FILES   Backup individual files.  You will be asked for the names of up│
│                  to 50 files on one volume that you want backed up.  Files will│
│                  not be marked as backed up in this mode.                     │
│                                                                               │
│ BATCH SELECTED   Backup individual files whose names have been placed in a DATA│
│                  file.                                                        │
│ ──────────────────────────────────────────────────────────────────────────  │
│ Please select a function                                                      │
│                                                                               │
│                                                                               │
│ ┌──────────┬──────────┬──────────┬──────────┐┌──────┬──────┬──────┬──────────┐│
│ │ WEEKLY   │ DAILY    │ SELECTED │ BATCH    ││      │      │      │ END      ││
│ │ BACKUP   │ BACKUP   │ FILES    │ SELECTED ││      │      │      │ UTILITY  ││
│ └──────────┴──────────┴──────────┴──────────┘└──────┴──────┴──────┴──────────┘│
└─────────────────────────────────────────────────────────────────────────────┘
```

3. Select the backup mode you want to use, from the softkey options. The details of the various options are:

- Select WEEKLY BACKUP if you want to back up all of the files on the device you later specify as source.

- Select DAILY BACKUP if you want to back up all files that have been accessed since they were marked as "backed up". If you use the "mark as backed up" function of the BACKUP program each time you run the program, this option will back up the files that have been accessed since the last run of the BACKUP program.

- Select SELECTED FILES if you want to type in the names of the files you want to back up, one by one. The maximum number of files that can be backed up using this option is 50. Note that the files that are backed up using this option are not marked as "backed up".

- Select BATCH SELECTED if you want to read the names of the files to be backed up from an editor file that you have already created. The program will ask you for the name of the editor file that contains the names of the files.

```
┌──────────────┐
│    NOTE      │
└──────────────┘
```

The editor file that contains the names of files to be backed up using the BACKUP program must be an UNNUMBERED file. Otherwise, the BACKUP program will generate an error. Each line of the editor file should contain the name of one file; the names should not include volume specifiers.

4. The next screen allows you to decide whether you want to use the checkread function of the BACKUP program, and whether you want to mark the files that are copied as "backed up".

The CHANGE CHECKREAD softkey alternates the checkread option between on and off.

The CHANGE MARK FILE softkey alternates the "MARK FILES AS SAVED" option between mark and do not mark.

The CHANGE MODE softkey allows you to select any of the four backup modes specified in the previous screen.

The CHANGE PRINTER softkey allows you to specify the address of the printer to which the report of the backup run will be sent.

When you have selected the options you want to use for this backup, press the CONTINUE BACKUP softkey. A screen of the following type appears.

```
┌──────────────┐
│    NOTE      │
└──────────────┘
```

To enable marking of files, the medium containing the file must not be write-protected.

```
┌──────────────┐
│    NOTE      │
└──────────────┘
```

If you change the printer, you will be asked to input a new printer select code. It is highly recommended that you respond with the select code for a hard copy device. This will give you a reference listing of all the backed -up files as well as the usual CRT messages which show that the utility is operating.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                         VOLUME BACKUP UTILITY                                 │
│                        SOURCE VOLUME SELECT                                   │
│                                                                               │
│ The source volume is the volume that contains the information to be backed up.│
│ You may select any one of the available volumes listed below.                 │
│                                                                               │
│                   LABEL       DEVICE                 COMMENT                   │
│                                 CTD     :K2,5,1                                │
│                               7945/46  :U2,5,0                                 │
│                               MICRODISC :A2,2,1                                │
│                               9133/34  :M2,2,0                                 │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│ ──────────────────────────────────────────────────────────────────────────  │
│ Please select the volume to be backed up                                      │
│                                                                               │
│ ─────────────────────────────────────────────────────────────────────────── │
│          │         │         │         ││         │         │         │ EXIT  │
│ :K2,5,1  │ :U2,5,0 │ :A2,2,1 │ :M2,2,0 ││         │         │         │       │
└─────────────────────────────────────────────────────────────────────────────┘
```

5. The above screen lists the devices that are connected and powered-on. "Unavailable" in the comments field indicates that a disc is not inserted, the medium is not initialized, or the disc has an IBM format.

   Softkey #7 will be set to MORE DEVICES if there are more than seven volumes on-line. Pressing this key will cause up to two more device softkeys to be set.

   The key for an empty disc drive, or a drive with an uninitialized disc will be labeled NOT AVAILABLE. Nothing will happen when this key is pressed.

   If you have selected the SELECTED FILES backup mode, use the next instruction to select the files that you want to back up. If you have selected any other backup mode, do not use the next instruction. Instead, proceed with the step after next.

6. This step is for the selection of files to be backed up using the SELECTED FILES mode. You can supply the name of the files to be backed up by interactively typing the name of each file or by pressing the SOURCE CATALOG softkey. If you choose the first method, simply type the name of each file (without a volume specifier) and press (RETURN). Each file name is checked to be sure that it exists and that it is not a data base file. If you make a typing mistake, an error message appears next to the incorrect file name; you are then asked to correct the information.

   If you press the SOURCE CATALOG softkey, a catalog of the source volume is displayed (one screen at a time). You may specify that a file is to be backed up by moving the cursor to the line containing the file name and then pressing (RETURN). During the time the catalog is displayed, the following softkeys change function:

⬤ [f₁] becomes CONTINUE CATALOG
[f₈] becomes STOP CATALOG

All other keys cease to function until the catalog is stopped. When there are no more files to be displayed in the catalog, the CONTINUE CATALOG softkey is erased. Pressing CONTINUE BACKUP causes the destination volume select screen to appear:

```
+---------------------------------------------------------------------+
|                      VOLUME BACKUP UTILITY                          |
|                    DESTINATION VOLUME SELECT                        |
|                                                                     |
|The destination volume is the volume that will receive the backup.  It cannot |
|have the same address as the source volume and should be removable.  |
|                                                                     |
|              LABEL       DEVICE              COMMENT                 |
|                          CTD      :K2,5,1                            |
|                          7945/46  :U2,5,0                            |
|                          MICRODISC :A2,2,1   SOURCE                  |
|                          9133/34  :M2,2,0                            |
|                                                                     |
|                                                                     |
|                                                                     |
|                                                                     |
|---------------------------------------------------------------------|
|Please select the volume to receive the backup                      |
|                                                                     |
|                                                                     |
+---------+---------+-----------+---------++------+------+------+------+
|         |         |   NOT     |         ||      |      |      | EXIT |
| :K2,5,1 | :U2,5,0 | AVAILABLE | :M2,2,0 ||      |      |      |      |
+---------+---------+-----------+---------++------+------+------+------+
```

7. The above screen prompts you to select the destination device. Press the softkey with the name of the device that you want to copy files to. The destination medium cannot be the same as the source medium, and should be removable. The "Device" column shows the drives on-line and the label of each media inserted. "Unavailable" in the comments column indicates that either a media is not inserted or that the medium is not initialized. "SOURCE" in the comments column indicates that this device is the volume from which you are copying files, and that it can not be used as the destination device. When you press the softkey to choose your destination volume, a form of the following type appears.

The form lists the source volume name and address, the destination volume and address, and a sequence number. The sequence number is the current number of the backup volume.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                        VOLUME BACKUP UTILITY                                  │
│                     DESTINATION VOLUME CONFIRMATION                           │
│                                                                               │
│ The destination volume is the volume that will receive the backup.  It cannot │
│ have the same address as the source volume and should be removable.  Currently│
│ the source volume is  on :A2,2,1 and the desired destination volume is        │
│  on :K2,5,1.                                                                  │
│                                                                               │
│ SOURCE:          ON :A2,2,1   DESTINATION:        ON :K2,5,1 SEQUENCE #1      │
│             MICRODISC                                    CTD                   │
│ The destination disc contains files.  You may erase the disc prior to         │
│ continuing.  The largest available space is 46763 physical records.           │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
├───────────────────────────────────────────────────────────────────────────── │
│                                                                               │
│ Please select a function                                                      │
│                                                                               │
│                                                                               │
│                                                                               │
├──────────┬──────────┬─────┬──────────┬────┬─────┬──────────┬──────────┤
│  DEST.   │  ERASE   │     │ CONTINUE │    │     │  CHANGE  │   END    │
│ CATALOG  │  DEST.   │     │ BACKUP   │    │     │  DEST.   │ UTILITY  │
└──────────┴──────────┴─────┴──────────┴────┴─────┴──────────┴──────────┘
```

8. The above screen allows you to check that you have correctly specified the source and destination devices. The following options are available from this screen:

- Press the DEST. CATALOG softkey if you want to display a list of all the files on the destination device. Then press the CONTINUE CATALOG softkey to continue the listing, or press the STOP CATALOG softkey to stop the listing.

- Press the CHANGE DEST. softkey if you have specified the wrong destination device. Then press the softkey with the name of the device that you want to use as the destination.

- Press the ERASE DEST. softkey if you want to purge the files that currently exist on the destination device (this softkey appears only if there are files on the destination device). Then press the CONFIRM ERASE softkey if you want to go ahead with the purge; or press the CANCEL ERASE softkey if you do not want to go ahead with the purge.

9. When you are ready to continue with the backup, press the CONTINUE BACKUP softkey. A screen of the following type appears.

```
┌─────────────────────────────────────────────────────────────────────────┐
│                         VOLUME BACKUP UTILITY                             │
│                         BACKUP FILE SELECTION                             │
│                                                                           │
│A file will be created on the destination volume that will contain the backed up│
│files from the source volume.  You may specify a name for this file or you may │
│let the backup utility use the standard default file name.                 │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│         Backup file name  BCKFIL       Backup file protect code  HP260    │
│                                                                           │
│  ─────────────────────────────────────────────────────────────────────  │
│  Please complete this form                                                │
│                                                                           │
│                                                                           │
│ ┌───────┬───────┬───────┬───────┬─┬──────┬───────┬───────┬───────┐        │
│ │PROCESS│       │       │       │ │      │       │       │ EXIT  │        │
│ │ DATA  │       │       │       │ │      │       │       │       │        │
│ └───────┴───────┴───────┴───────┴─┴──────┴───────┴───────┴───────┘        │
└─────────────────────────────────────────────────────────────────────────┘
```

10. The above screen allows you to specify the name of the backup file that will be created on the destination device, and to specify a protect code to restrict access to the backup file to people who know the protect code. Type this information in the fields on the screen.

When you are ready to continue with the backup, press the PROCESS DATA softkey. The BACKUP program begins to copy files from the source to the destination.

When the backup is completed, a message will appear giving the number of files backed up, the number of errors, and the number of warnings (such as the following):

Backup completed.

Number of files backed up - 15
Number of errors   - 0
Number of warnings   - 0

Please select a function.

Backup completed successfully.

Multiple Volume Backups

If the destination volume is filled before all of the source volume is backed up, a screen appears, asking for the label of the next volume you want to use.

Type the name of the label, and press (RETURN). Then remove the used destination volume from its drive, and insert a new destination volume in the same drive. Next press the PROCESS DATA softkey. A new screen appears and prompts you to select the second destination volume. Press the softkey with the volume label of the second destination volume.

If the volume you selected has a different volume label from the label you typed in earlier, the program displays a warning message, and redefines the softkeys.

Softkey #3 will be labeled "RELABEL DISC". If you press this key, the chosen volume is relabeled with the specified label.

THE RECOVR PROGRAM

The RECOVR program is a BASIC-language utility which allows you to recover the contents of BACKUP files. The BACKUP file and files recovered can be on different disc types. The RECOVR program will support the recovery of either the entire BACKUP volume or selected files within this volume. A typical application of this program would be the recovery of a BACKUP file sequence on flexible discs to a larger fixed disc.

```
┌─────────────┐
│    NOTE     │
└─────────────┘
```

The volume containing the RECOVR utility must be on-line during its operation. The performance of the utility will be greatly enhanced if it resides on a hard disc. The ROUTIL utility may be used to copy the RECOVR utility from the distribution medium onto hard disc.

Procedure for Running RECOVR

1. To run RECOVR, execute the following:

   RUN "RECOVR [*volume spec*]**"**

The following menu then appears:

```
┌─────────────────────────────────────────────────────────────────────────┐
│                        VOLUME RECOVERY UTILITY                            │
│                            INTRODUCTION                                   │
│                                                                           │
│ The HP260 Volume Recovery Utility will allow you to recover individual files or │
│ entire volumes which have been backed up with the HP260 Backup Utility.   │
│                                                                           │
│ Important note:  Database files can not be recovered with this utility.   │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│ Today's Date ░░░░░░   Time ░░░░   Initials ░░░                            │
│                                                                           │
│    Comments ░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░░  │
│───────────────────────────────────────────────────────────────────────── │
│ Please complete this form                                                 │
│                                                                           │
│                                                                           │
│                                                                           │
├──────────┬────────┬────────┬───────┬──┬────────┬────────┬────────┬────────┤
│ PROCESS  │        │        │       │  │        │        │        │  END   │
│  DATA    │        │        │       │  │        │        │        │ UTILITY│
└──────────┴────────┴────────┴───────┴──┴────────┴────────┴────────┴────────┘
```

2. The above screen allows you to provide information about this run of the RECOVR program. This information can be used to provide a record of the run, and its purpose. To make such a record, you should select a printer during your preparation for a run of the RECOVR program. The details of this selection are described later in this sub-section.

The date and time are optional and are system supplied if the system date and time are set. Initials and comments are optional. The "comments" field on this form allows you to enter up to 67 characters of notes that you might want to make about this recovery. When the softkey PROCESS DATA is pressed, a syntax check is made of the data entered. Errors cause a series of messages to appear, indicating the problem and asking you for new input.

If no errors are found, the following screen appears.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                          VOLUME RECOVERY UTILITY                              │
│                          RECOVERY MODE SELECT                                 │
│                                                                               │
│ The HP260 Volume Recovery Utility provides two modes for restoring volumes.   │
│ Select either one.  Remember:  None will restore databases.                   │
│                                                                               │
│                                                                               │
│ VOLUME RECOVER   Recover all files found in the backup file.                  │
│                                                                               │
│ SELECTED FILES   Recover individual files from the backup file.  You will be  │
│                  asked for the names of up to 10 files in the backup file that│
│                  you want restored.                                           │
│                                                                               │
│ CATALOG ONLY     Display the name and the type of all files in the backup file.│
│                                                                               │
│                                                                               │
│                                                                               │
│ ──────────────────────────────────────────────────────────────────────────── │
│ Please select a function                                                      │
│                                                                               │
│                                                                               │
│ ┌─────────┬─────────┬─────────┬─────────┬─┬────────┬────────┬────────┬────────┐│
│ │ VOLUME  │ SELECTED│ CATALOG │         │ │        │        │        │  END   ││
│ │ RECOVERY│ FILES   │ ONLY    │         │ │        │        │        │ UTILITY││
│ └─────────┴─────────┴─────────┴─────────┴─┴────────┴────────┴────────┴────────┘│
└─────────────────────────────────────────────────────────────────────────────┘
```

3. If you want to recover all of the files on a backup file, press the VOLUME RECOVERY softkey.

   If you want to recover only some of the files in a backup file, press the SELECTED FILES softkey.

   The CATALOG ONLY feature allows you to print a list of the names of all the files in a selected backup file. To use this feature, you must have a printer connected, powered up, and on-line.

4. The next screen prompts you to select the destination device for the recovery. Press the softkey with the name of the device to which you want to recover the files. A screen of the following type appears.

```
┌─────────────────────────────────────────────────────────────────────────┐
│                      VOLUME RECOVERY UTILITY                              │
│                   DESTINATION VOLUME CONFIRMATION                         │
│                                                                           │
│ The destination volume is the volume that will be restored by the        │
│ recovery.  It may not be the same volume as the source volume.           │
│                                                                           │
│ Important note:  Database files can not be recovered with this utility.   │
│                                                                           │
│ Recovery mode SELECTED FILES   Destination volume Main     on :U2,5,0     │
│       Printer is  8                                            7945/46    │
│                                                                           │
│                                                                           │
│ The destination disc contains files.  If there is a file with the same   │
│ name in the backup file, the backup copy will not be restored.           │
│                                                                           │
│                                                                           │
│ ─────────────────────────────────────────────────────────────────────── │
│ Please select a function                                                  │
│                                                                           │
│ ─────────────────────────────────────────────────────────────────────── │
│ CHANGE  │ CHANGE │ CHANGE │ DEST.   ││ CONTINUE │        │      │ END     │
│ PRINTER │ MODE   │ DEST.  │ CATALOG ││ RECOVERY │        │      │ UTILITY │
└─────────────────────────────────────────────────────────────────────────┘
```

5. The above screen allows you to check that you have correctly specified the destination device. The following options are available from this screen:

- Press the DEST. CATALOG softkey if you want to display a list of all the files on the destination device. Then press the CONTINUE CATALOG softkey to continue the listing, or press the STOP CATALOG softkey to stop the listing.

- Press the CHANGE DEST. softkey if you have specified the wrong destination device. Then press the softkey with the name of the device that you want to use as the destination.

- Press the CHANGE MODE softkey if you have selected the wrong recovery mode, and want to specify a new mode. The previous screen is displayed again to allow you to make your new choice of mode.

- Press the CHANGE PRINTER softkey if you want to print the information that is displayed on the screen during the running of the RECOVR program. This will give you a permanent record of the details of the run.

6. When you are ready to continue with the recovery, press the CONTINUE RECOVERY softkey.

   If you have specified the SELECTED FILES mode of recovery, the following screen appears. Type the names of up to 10 files that you want to recover. Then press the CONTINUE RECOVERY softkey.

If you have specified the VOLUME RECOVERY mode of recovery, ignore the next screen, and proceed with the instruction that follows it.

```
┌──────────────────────────────────────────────────────────────────────────┐
│                         VOLUME RECOVERY UTILITY                            │
│                          RECOVER FILE SELECT                               │
│                                                                            │
│ The HP260 Recovery Utility will allow you to enter up to 10 names of files │
│ to be recovered.  You may enter them now                                   │
│                                                                            │
│ Please select a function or enter names of files to be recovered           │
│                                                                            │
│                                                                            │
│                                                                            │
│                                                                            │
│                                                                            │
│                                                                            │
│                                                                            │
├──────────┬────────┬────────┬───────┬┬────────┬────────┬────────┬───────────┤
│ CONTINUE │        │        │       ││        │        │        │      EXIT │
│ RECOVERY │        │        │       ││        │        │        │           │
└──────────┴────────┴────────┴───────┴┴────────┴────────┴────────┴───────────┘
```

7. The next screen asks you to specify the name of the BACKUP file and the protect code. The RECOVR program displays entries for both fields, which you may alter. When you have entered the required information, press PROCESS DATA to continue.

```
┌─────────────────────────────────────────────────────────────────────────┐
│                      VOLUME RECOVERY UTILITY                              │
│                      BACKUP FILE SELECTION                                │
│                                                                           │
│ You may specify the name of the backup file name and protect code or you may let │
│ the recovery utility use the standard default file name and protect code. │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│     Backup file name   BCKFIL            Protect code   HP260             │
│                                                                           │
│ ───────────────────────────────────────────────────────────────────────  │
│ Please complete this form                                                 │
│                                                                           │
│ ───────────────────────────────────────────────────────────────────────  │
│ PROCESS │        │        │       ││       │        │        │    EXIT    │
│ DATA    │        │        │       ││       │        │        │            │
└─────────────────────────────────────────────────────────────────────────┘
```

8. A new screen appears, and prompts you to select the source device. Press the softkey with the name of the device from which you want to recover files. Another screen appears. Press the CONTINUE softkey to continue with the recovery.

To begin the recovery, press the softkey with the appropriate label. The utility reports back with the name of the file being recovered and its size. When the recovery is complete, the utility reports the following information:

> Number of files read.
> Number of files recovered.
> Number of name conflicts.
> Number of space failures.
> Number of total errors.

Procedures and Recommendations

To recover files spread over a weekly and several daily backups, start with the last weekly backup and then use the first daily backup after this weekly backup. Next work forward to the most recent daily backup.

DATABASE BACKUP

The DBSTORE Statement

The DBSTORE binary statement copies portions of a data base, or an entire data base to a backup file. The backup file may be used to restore the data base following a hardware failure or other error. To load the DBSTOR binary, execute:

LOAD BIN "DBSTOR [volume spec]"

The DBSTORE syntax is:

DBSTORE root file spec [;maintenance word][,set list] TO file spec [ON volume list]

The parameters are:

root file spec   A string identifying the data base name. An optional volume label or unit specifier may be appended to the data base name.

maintenance word   A string expression identifying the data base security password.

set list   A string expression identifying particular data sets. Data sets are specified by either name or number. Set identifiers are separated by commas.

file spec   A string expression specifying the name of the backup file to be created by DBSTORE. If the ON parameter is not specified, an optional volume label or unit specifier may be appended to the backup file name.

volume list   A string expression used to identify the volume name(s) where the data base is to be copied. Each volume name is separated by a comma.

The DBSTORE binary statement copies the entire data base or selected data sets to a backup file. This statement is used whenever a backup copy of the data base is required. Once a data base has been copied to a backup file, it may be restored to the state at which the DBSTORE was executed by using DBPURGE and DBRESTORE. The backup file may span multiple volumes. When DBSTORE is executed from the keyboard, it displays either the set number of the set stored or an * when the root file is being stored.

When a set list is supplied, DBSTORE copies only the sets specified to the backup file. Sets may be identified by name or number. If the first entry of the set list is an * (such as "*,1,2, CUSTOMER"), the root file is also copied to the backup file. If a set list is not specified, the entire data base, including the root file, is copied to the backup file. When no set list is given, the sets are copied in an order determined by the set's volume name and the set number.

When no volume list is supplied, DBSTORE creates the backup file on the default mass-storage device, or on the device appearing in the backup file specifier. If a volume list is supplied, DBSTORE creates the backup file on the first volume specified in the list, ignoring any volume in the backup file specifier. Once

the backup file has been created, DBSTORE begins copying the specified sets to the backup file. Requests are automatically made to insert backup volumes and data set volumes as needed.

If there is insufficient space for the entire backup file on the first volume, the file is continued on additional volumes. Additional volumes names are obttained from the volume list, if specified. If an insufficient number of volumes are given in the volume list, or if no volume list is specified, DBSTORE requests additional volume names as needed.

If the data base is larger than 16 MBytes, the DBSTORE binary will report an error. In this case, you must back up the data base in several parts, using the set list option of the DBSTORE statement. This will result in the creation of several backup files.

NOTE

This function is also available through the TOOLS DROM.

The DBRESTORE Statement

The DBRESTORE binary statement uses the backup file created by DBSTORE to restore a data base to its state at the time DBSTORE was executed.

DBRESTORE *file spec* [ON *volume spec*]

The parameters are:

file spec   A string expression identifying the name of the backup file. An optional volume label or mass-storage unit specifier may be appended to the backup file name.

volume spec   A string expression identifying the volume (label) or mass-storage device (unit specifier) where the root file and sets with a default label are to be stored.

The DBRESTORE binary statement restores the data sets (or the entire data base) using the backup file created by DBSTORE. Only the portion of the data base stored by DBSTORE is restored. Before executing DBRESTORE, a DBPURGE command should be executed to purge all data sets to be restored. If the root file was stored using DBSTORE, the root file must also be purged using DBPURGE. When executed from the keyboard, DBRESTORE displays either the set number of the set being restored or an * when the root file is being restored.

The volume specifier is used to specify the location of the root file. If the root file was stored using DBSTORE, DBRESTORE creates and restores the root file on the specified volume. If the root file was not stored, the volume specifier is used to specify the location of the existing root file. If no volume specifier is supplied, the default mass-storage device is used. Data sets stored by DBSTORE that were defined in the schema without a volume specifier are restored on the root file volume.

<div style="text-align:center">

NOTE

</div>

> When the root file is stored using DBSTORE, only those data sets stored with the root file are associated with the data base following a DBRESTORE. All other data sets are considered "uncreated" by IMAGE, and cannot be accessed. These data sets must be purged using a special mode of DBPURGE, and then created using DBCREATE before they can be used. Refer to the IMAGE Programming Manual for the details of this procedure.

Data Base Utility Programs

The two utility programs, DBUNLD and DBLOAD, are used to copy data entries in data base restructuring operations, and in data recovery operations. These programs utilize a backup file (which may span several volumes) to store the data entries of all or selected data sets. The backup files used here are not compatible with the files created by DBSTORE, although both files are type BKUP. Both utilities request data set volumes and backup volumes as needed. These programs require exclusive access to the data base (the data base cannot be open).

The DBUNLD Program

The DBUNLD (data base unload) utility program copies data set entries to a backup file. Error numbers and messages are listed in the appendix titled, "Error Messages".

To run the DBUNLD program, execute the command:

    RUN "DBUNLD [*volume spec*]"

The volume specifier must appear when the DBUNLD program is not on the default mass-storage device.

Once the RUN command has been executed, DBUNLD displays this form:

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                        DATA BASE UNLOAD UTILITY                               │
│                          PARAMETER INPUT                                      │
│                                                                               │
│ Data Base Name   ░░░░░░░░         Root File Volume Name  ░░░░░░░░             │
│                                                                               │
│ Maintenance Password  ░░░░░░░░░░░ Spool File Information (Optional)           │
│                                      File Name    ░░░░░░                       │
│ Unload from Data BASE                Volume Name  ░░░░░░                       │
│                                                                               │
│ CHAINED Mode Unload               Data Set Name   ░░░░░░░░░░░░                │
│                                                                               │
│ Backup File Name  ░░░░░░          Checkread  ON                              │
│                                                                               │
│ List of Backup Volume Names  ░░░░,░░░░,░░░░,░░░░,░░░░,                        │
│                              ░░░░,░░░░,░░░░,░░░░,░░░░,                        │
│                              ░░░░,░░░░,░░░░,░░░░,░░░░,                        │
│                              ░░░░,░░░░,░░░░,░░░░,░░░░,                        │
│─────────────────────────────────────────────────────────────────────────────│
│ Please complete this form.                                                    │
│                                                                               │
│                                                                               │
│─────────────────────────────────────────────────────────────────────────────│
│ CHANGE   │ CHANGE  │       │ CLEAR  │ CHANGE    │      │ ACCEPT  │ EXIT      │
│ SOURCE   │ MODE    │       │ FORM   │ CHECKREAD │      │ INPUT   │ PROGRAM   │
└─────────────────────────────────────────────────────────────────────────────┘
```

Type the information required by the DBUNLD program in the shaded boxes oppposite the relevant labels. The following table explains each of the labels.

Field Label	Description
Data Base Name	Name of the data base to be unloaded.
Root File Volume Name	Blank response defaults to default disc.
Maintenance Password	Defined by initial DBCREATE.
Spool File Name	Name of the error message log file (optional).
Spool Volume Name	Volume to hold the error message log file (optional).
Backup File Name	Name of file created by DBUNLD.
Data Set Name	Used only when unloading single data set.
List of Backup Volume Names	Names of volumes to contain backup file.

To log error messages while DBUNLD is running unattended, enter the name and volume of the spool file to which the errors should be logged. To use this feature, **the SPOOL DROM must be loaded.** Use the COPY command to list the contents of the log file after DBUNLD finishes.

| **NOTE** |

Do not remove the volume containing the error log file during the unloading process. Otherwise, error 142 will occur, and DBUNLD will halt.

Press the CLEAR FORM key any time during form entry to erase all information on the form. Press the EXIT PROGRAM key to terminate the program.

DBUNLD may be used to either unload an entire data base (all data set entries except automatic-master set entries) or a particular data set. The currently selected option (either unload data base or unload data set) is displayed on the form. When a single data set is to be unloaded (unload data set option), the data set name must be entered into the form. The data set name entry is ignored when the unload data base option is selected.

Data entries in detail data sets may be unloaded in either serial mode or chained mode (all master data sets are unloaded in serial mode). The currently-selected unload mode, either serial or chained, is displayed on the form. Press CHANGE MODE to change the selected unload mode.

In serial mode, detail data set entries are unloaded in physical order. This mode is somewhat faster than chained mode, since disc head movement is reduced. Data bases that have been marked corrupt by IMAGE must be unloaded in serial mode.* In addition, an attempt is made to recover as many entries as possible in a data set following a read data error (errors 87 and 88) on the data set.**

In chained mode, detail data set entries are unloaded along the primary path. This mode is somewhat slower than serial mode. The chained mode, used in conjunction with DBERASE and DBLOAD, is used to improve the access time for chained access along a detail data set's primary path. Entries can be unloaded and reloaded with entries in chained order, thus reducing disc head movement during chained access.

---

* If chained mode is selected and the data base is corrupt, DBUNLD will issue an error and terminate. Corrupt data bases must be unloaded serially since chain information may be wrong.

** If, following a read data error, DBUNLD detects that one or more entries have been lost due to the error, the unload process is terminated following the unloading of that data set. If the unload data base option was selected, any data sets not unloaded following the error may be unloaded using the unload data set option.

When all entries have been entered into the form, and all options and modes have been selected, press ACCEPT INPUT to begin processing. DBUNLD now checks that all required entries have been filled and displays:

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                         DATA BASE UNLOAD UTILITY                              │
│                           UNLOAD PROCESSING                                   │
│                                                                               │
│ ┌─────────────┬─────────────┬─────────────┬─────────────┬─────────────       │
│ │Data  Number │Data  Number │Data  Number │Data  Number │Data  Number │       │
│ │Set  Unloaded│Set  Unloaded│Set  Unloaded│Set  Unloaded│Set  Unloaded│       │
│ ├─────────────┴─────────────┴─────────────┴─────────────┴─────────────       │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│ ─────────────────────────────────────────────────────────────────────────   │
│ Please insert volume DB1.                                                     │
│                                                                               │
│ ───────────────────────────────────────────────────────────────────────     │
│           │        │        │        ││         │        │       │  EXIT      │
│           │        │        │        ││         │        │       │            │
└─────────────────────────────────────────────────────────────────────────────┘
```

Processing then continues, with DBUNLD displaying the data set number and number of entries unloaded. During processing, DBUNLD requests inserting data set volumes, backup volumes, and the volumes containing DBUNLD programs as needed. If an insufficient number of backup volumes is given, the program requests the names of additional backup volumes. Informational messages and requests for operator action are displayed on the line directly below the solid line as shown in the figure. Error messages are displayed on the bottom line.

To terminate the current operation, press the EXIT softkey at anytime during program execution. If you terminate the DBUNLD before the data base has been completely unloaded, the destination device might contain the data from one or more data sets, but it will not contain any structural information about the data base. Therefore the partial backup can only be used to restore the data to some of the data sets of the data base.

The DBLOAD Program

The DBLOAD program loads data entries into a data base from a backup file created by DBUNLD. A list of error codes and messages is in the appendix titled "Error Messages".

To run the DBLOAD program, execute the command:

RUN "DBLOAD [*volume spec*] **"**

The volume specifier must appear when the DBLOAD program is not on the default mass-storage device.

Once the RUN command has been executed, DBLOAD displays this form.

```
┌─────────────────────────────────────────────────────────────────────────┐
│                       DATA BASE LOAD UTILITY                              │
│                         PARAMETER INPUT                                   │
│                                                                           │
│ Data Base Name  ▓▓▓▓▓▓         Root File Volume Name   ▓▓▓▓▓▓             │
│                                                                           │
│ Maintenance Password  ▓▓▓▓▓▓▓▓▓   Spool File Information  (Optional)       │
│                                        File Name   ▓▓▓▓▓                   │
│ Erase Complete Data Base? (YES/NO) NO   Volume Name  ▓▓▓▓▓▓▓▓▓             │
│                                                                           │
│ Load into Data BASE               Data Set Name  ▓▓▓▓▓▓▓▓▓                 │
│                                                                           │
│                                   Backup File Set Number  ▓▓              │
│                                                                           │
│ Backup File Name  ▓▓▓▓▓           First Backup Volume Name  ▓▓▓▓▓         │
│                                                                           │
│ Re-order Items? (YES/NO)  NO      Checkread? (ON/OFF)  ON                 │
│                                                                           │
├───────────────────────────────────────────────────────────────────────┤
│ Please complete this form.                                                │
│                                                                           │
│                                                                           │
├────────┬────────┬──────┬──────┬─────────┬──────┬────────┬───────────┤
│ CHANGE │ CHANGE │      │ CLEAR│ CHANGE  │      │ ACCEPT │ EXIT      │
│ ERASE  │ DEST   │      │ FORM │CHECKREAD│      │ INPUT  │ PROGRAM   │
└────────┴────────┴──────┴──────┴─────────┴──────┴────────┴───────────┘
```

Type the information required by the DBUNLD program in the shaded boxes oppposite the relevant labels. The following table explains each of the labels.

Field Label	Description
Data Base Name	Name of the data base to be loaded.
Root File Volume Name	Blank response defaults to default disc.
Maintenance Password	Defined by initial DBCREATE.
Spool File Name	Name of the error message log file.
Spool Volume Name	Volume to hold the error message log file.
Backup File Name	Name of file created by DBUNLD.
First Backup Volume Name	Location of first backup file segment.
Data Set Name	Used only when loading single data set.
Backup File Set Number	Used only when loading single data set.

Press CLEAR FORM any time during form entry to erase all entries in the form. Press EXIT PROGRAM to terminate the DBLOAD program.

The DBLOAD program can optionally erase the entire data base (using DBERASE) before loading entries. The erase option should be selected when loading a corrupt data base following a serial DBUNLD. An erase operation is not required if the data base is being restructured, and has just been created using DBCREATE. The current erase option is displayed on the form, and is changed by pressing CHANGE ERASE.

DBLOAD may be used to load all entries stored in the backup file, or only those entries from a particular data set. The currently-selected option, either load data base or load data set, is displayed on the screen. Press CHANGE DEST to change the selected option. When a single set is loaded (load data set option), the name of the data set to be loaded must be entered. The number of the data set in the backup file whose entries are to be used must be entered if its set number is different than the number of the set to be loaded. The data set name and backup file set number entries are ignored when the load data base option is selected.

To log error messages while DBLOAD is running unattended, enter the name and volume of the spool file to which the errors should be logged. To use this feature, the SPOOL DROM must be loaded. Use the COPY command to list the contents of the log file after DBLOAD finishes.

NOTE

Do not remove the volume containing the error log file during the loading process. Otherwise, error 142 will occur, and DBLOAD will halt.

For further information on DBLOAD refer to the IMAGE Programming Manual.

THE ROUTIL PROGRAM

The ROUTIL program is a run-only BASIC-language utility that copies and purges run-only programs. For example, after your computer system is installed, ROUTIL is used to copy the operating system, DROMs, utilities and binary programs from the media on which they are supplied to a fixed disc; the operating system, DROMs, utilities and binary programs consist of run-only programs and their associated program and data files.

ROUTIL can also be used to convert an ordinary program into a run-only program. Thus, ROUTIL provides the same function as the RUN-ONLY statement (available when the R-ONLY binary is loaded or the TOOLS DROM is loaded).

ROUTIL allows you to copy or purge individual files or entire program sets; a program set is a group of program and data files referred to by a single name. For example, the QUERY program is actually a program set, consisting of 39 individual program and data files. You can purge or copy the entire set of files with ROUTIL, using only the name of the file set, QUERY. ROUTIL automatically handles the many files that make up the set.

As first shipped to you, ROUTIL only operates on the run-only programs (the operating system, DROMs, utilities and binaries) supplied by Hewlett-Packard. However, there may be other run-only programs and associated data files (created by you or a third party applications supplier) that you want to copy from one medium to another or purge from a medium. ROUTIL makes it easy for you to do this (refer to the paragraphs titled "Adding Programs to the ROUTIL List", later in this section).

To run ROUTIL, execute the following:

RUN "ROUTIL [volume spec]"

The initial menu is displayed:

```
┌─────────────────────────────────────────────────────────────────────────┐
│                   RUN-ONLY PROGRAM MAINTENANCE UTILITY                    │
│                              MAIN MENU                                    │
│                                                                           │
│                                                                           │
│         COPY                - Copies RUN-ONLY programs between devices.   │
│                                                                           │
│         PURGE               - Purges RUN-ONLY programs.                   │
│                                                                           │
│         RUN-ONLY            - Makes a specific program RUN-ONLY.          │
│                                                                           │
│         SYSTEM & DROMS      - Copies or purges SYSTEM and DROM files.     │
│                                                                           │
│         EXIT ROUTIL         - Terminates program.                         │
│                                                                           │
│                                                                           │
│                                                                           │
├───────────────────────────────────────────────────────────────────────┤
│ Please insert desired volumes and select a function.                      │
│                                                                           │
│                                                                           │
├─────────┬─────────┬──────┬───────────┬──────┬──────────┬──────┬──────────┤
│  COPY   │  PURGE  │      │ RUN-ONLY  │      │ SYSTEM   │      │  EXIT    │
│         │         │      │           │      │ & DROMS  │      │ ROUTIL   │
└─────────┴─────────┴──────┴───────────┴──────┴──────────┴──────┴──────────┘
```

If the files or program sets are currently stored on a removable medium (cartridge tape, 8-inch floppy, or microfloppy), insert the medium into its drive. Then press the softkey that is labelled with the name of the function you want to perform. Each of the functions is described separately in the following paragraphs.

Copying Run-Only Files

1. After pressing COPY, select the source and destination volumes for the copy operation. The utility then catalogs and lists the standard run-only programs* located on the source volume. The following menu shows the standard listing of utilities supplied by Hewlett-Packard:

```
              RUN-ONLY PROGRAM MAINTENANCE UTILITY
                          PROGRAM COPY

                   Source        Volume:K2,5,1
                   Destination   :U2,5,0


       1  BACKUP      8  DBUNLD      15  MONADV      22  SCHEMA
       2  BCR         9  DUPL        16  MONREV      23  TAPFIX
       3  BPRGS      10  EDITOR      17  PFORM       24  TEST
       4  CFORM      11  FVBACK      18  QUERY       25  WORK
       5  CONFIG     12  INIT        19  ROUTIL      26  XREF
       6  DBLOAD     13  LK3000      20  RECOVR
       7  DBMODS     14  MFORM       21  REPACK


   Enter list of program numbers separated by commas or select a function.



    COPY                OTHER                                          EXIT
    ALL                 PROGRAM
```

2. To avoid copying to the wrong volume, verify that the source and destination devices have been correctly specified before continuing. Select one of the softkeys, according to the function you want to perform. The options are:

   • To copy all programs shown in the list, press the softkey labelled COPY ALL.

---

*To access run-only programs other than those shown in the standard listing, refer to the paragraphs titled "Adding Programs to the ROUTIL List", later in this section.

- To copy individual program sets, type in the numbers identifying the programs to be copied (separated by commas) and press (RETURN). For example, using the above screen as your reference, if you want to copy only the INIT program, the LK3000 program and the ROUTIL program, type the following:

    12,13,19 (RETURN)

- To copy a file not shown in the listing, press the softkey labelled OTHER PROGRAM; then type the name of the file residing on the source device and press (RETURN).

- To return to the initial menu, press the softkey labelled EXIT.

3. When COPY ALL is pressed, each program in the list is copied, starting with program #1. Each program name is highlighted as it is copied. The following is an example of the copy operation in progress on program #1. Press the TERMINATE COPY ALL softkey if you want to stop the copying at any stage.

```
                RUN-ONLY PROGRAM MAINTENANCE UTILITY
                           PROGRAM COPY

            ┌─────────────────────────────────────────┐
            │ Source        Volume:K2,5,1              │
            │ Destination   :U2,5,0                    │
            └─────────────────────────────────────────┘

  ┌──────────────────────────────────────────────────────────────┐
  │  1 BACKUP       8 DBUNLD      15 MONADV      22 SCHEMA          │
  │  2 BCR          9 DUPL        16 MONREV      23 TAPFIX          │
  │  3 BPRGS       10 EDITOR      17 PFORM       24 TEST            │
  │  4 CFORM       11 FVBACK      18 QUERY       25 WORK            │
  │  5 CONFIG      12 INIT        19 ROUTIL      26 XREF            │
  │  6 DBLOAD      13 LK3000      20 RECOVR                         │
  │  7 DBMODS      14 MFORM       21 REPACK                         │
  └──────────────────────────────────────────────────────────────┘




  ─────────────────────────────────────────────────────────────────

                                                       TERMINATE
                                                       COPY ALL
```

Purging Run-Only Files

1. After pressing the PURGE softkey, you are asked to specify the source volume, that is the device on which you want to purge run-only programs. The utility then catalogs and lists run-only programs on the source volume. To avoid purging files that you still need, make sure that the displayed volume name is correct. When you have selected the source volume, a screen of the following type appears:

```
            RUN-ONLY PROGRAM MAINTENANCE UTILITY
                     PROGRAM PURGE

         ┌─────────────────────────────────────────┐
         │   Files will be purged on  Volume :U2,5,0 │
         └─────────────────────────────────────────┘

   ┌──────────────────────────────────────────────────────────┐
   │    1 BACKUP      8 DBUNLD     15 MONADV     22 SCHEMA       │
   │    2 BCR         9 DUPL       16 MONREV     23 TAPFIX       │
   │    3 BPRGS      10 EDITOR     17 PFORM      24 TEST         │
   │    4 CFORM      11 FVBACK     18 QUERY      25 WORK         │
   │    5 CONFIG     12 INIT       19 ROUTIL     26 XREF         │
   │    6 DBLOAD     13 LK3000     20 RECOVR                     │
   │    7 DBMODS     14 MFORM      21 REPACK                     │
   └──────────────────────────────────────────────────────────┘


 ─────────────────────────────────────────────────────────────────
  Enter list of program numbers separated by commas or select a function.


 ─────────────────────────────────────────────────────────────────
  PURGE  │     │ OTHER   │     │ │     │     │     │     │ EXIT
  ALL    │     │ PROGRAM │     │ │     │     │     │     │
```

2. The above screen allows you to choose between the following options:

- To purge all of the program sets listed on the screen, press the softkey labelled PURGE ALL.

- To purge a sub-group of the program sets listed on the screen, type the numbers identifying the files to be purged (separated by commas) and press (RETURN).

- To purge a file not listed on the screen, press the softkey labelled OTHER PROGRAM; type the name of the program and then press (RETURN).

- To return to the initial menu, press the softkey labelled EXIT.

3. If you want to stop a purge operation, press the softkey labelled **TERMINATE PURGE**.

Creating Run-Only Programs

After pressing the softkey labelled RUN-ONLY, the softkeys are re-labelled with the volume name and volume specifier of each mass storage device connected to the system. Specify the volume containing the program(s) to be made run-only by pressing the appropriate softkey. A menu similar to the following is displayed:

```
             RUN-ONLY PROGRAM MAINTENANCE UTILITY
                 CONVERT PROGRAM TO RUN ONLY
    ┌──────────────────────────────────────────────────────┐
    │ Programs will be made RUN-ONLY on  Volume:U2,5,0       │
    └──────────────────────────────────────────────────────┘




Enter name of program file to be made RUN-ONLY.


                                                    │ EXIT │
```

Now type the file name of the program to be made run-only. Only files of type PROG can be converted to run-only. Once a program is made run-only, it is impossible to alter its run-only status. Therefore, **make sure that a source version or another copy of the program is available before making it run-only.**

Press the softkey labelled EXIT to return to the initial menu.

System and DROM Files

After you press the SYSTEM & DROMS softkey, the following screen appears.

```
                    RUN-ONLY PROGRAM MAINTENANCE UTILITY
                       COPY/PURGE SYSTEM AND DROMS




          COPY               - Copies SYSTEM and selected DROMS.

          PURGE              - Purges SYSTEM and selected DROMS.

          EXIT               - Returns to main menu.




_____
Please select a function.



_____
|  COPY   |         | PURGE   |         ||         |         |         |  EXIT   |
```

Copying the System and DROM Files

1. Press the COPY softkey. The program prompts you to select the source and destination devices. The
   following screen then appears, listing the DROM files on the source device.

```
            RUN-ONLY PROGRAM MAINTENANCE UTILITY
                   SYSTEM & DROM COPY

            ┌─────────────────────────────────────┐
            │ Source         Volume:K2,5,1         │
            │ Destination    :U2,5,0               │
            └─────────────────────────────────────┘

    ┌──────────────────────────────────────────────────────────┐
    │   1 EUROPE      9 RIO       17 IMAGE      25 UPDATE        │
    │   2 PACK       10 TIO       18 TASK       26 PIO           │
    │   3 IMAGE      11 TRACE     19 IMAGEU     27 NET250        │
    │   4 SORT       12 TRIG      20 TIMER      28 SYSRR         │
    │   5 REPORT     13 MATRIX    21 PERFM      29 DCACHE        │
    │   6 FORMS      14 SPOOL     22 CTRACE                      │
    │   7 TAPES      15 CS250     23 VIO                         │
    │   8 TOOLS      16 MEDIA     24 PTYPE                       │
    └──────────────────────────────────────────────────────────┘

Enter DROM numbers (separated by commas) to be copied along with SYSTEM file.


COPY ALL │      │      │      ││      │      │      │ EXIT
```

2. The above screen allows you to choose one of the following options:

  • To copy only the SYSTEM file, press (RETURN).

  • To copy the SYSTEM file and all DROMs, press the softkey labelled COPY ALL.

  • To copy the SYSTEM file and specific DROMs, type the numbers identifying the DROMs to be copied (separated by commas) and then press (RETURN).

  • To return to the main menu, press the softkey labelled EXIT.

```
┌──────────────┐
│     NOTE     │
└──────────────┘
```

The utility will not copy a SYSTEM file over a SYSTEM file of a different revision. To copy a SYSTEM file to a volume which contains a SYSTEM volume of a different revision, you must first purge the old SYSTEM file as described in the following paragraphs.

Purging System and DROM Files

1. After pressing the SYSTEM & DROMS softkey from the initial screen of the ROUTIL program, press the PURGE softkey from the next screen.

2. The program prompts you to select the source device. The following screen then appears, listing the DROMs that exist on the source device. Select one of the following options:

   - To purge the SYSTEM file and all of the DROMs on the device, press the softkey labelled PURGE ALL.

   - To purge the SYSTEM file and selected DROMs, type the numbers of the DROMs you want to purge, (separated by commas), and then press (RETURN). For example, to purge only the SORT and REPORT DROMs, type the following:

     4,5 (RETURN)

```
                    RUN-ONLY PROGRAM MAINTENANCE UTILITY
                            SYSTEM & DROM COPY

            ┌────────────────────────────────────────────────────┐
            │    SYSTEM & DROMS will be purged on   :U2,5,0        │
            └────────────────────────────────────────────────────┘

      ┌──────────────────────────────────────────────────────────────┐
      │   1 EUROPE      9 RIO        17 IMAGE      25 UPDATE           │
      │   2 PACK       10 TIO        18 TASK       26 PIO              │
      │   3 IMAGE      11 TRACE      19 IMAGEU     27 NET250           │
      │   4 SORT       12 TRIG       20 TIMER      28 SYSRR            │
      │   5 REPORT     13 MATRIX     21 PERFM      29 DCACHE           │
      │   6 FORMS      14 SPOOL      22 CTRACE                         │
      │   7 TAPES      15 CS250      23 VIO                            │
      │   8 TOOLS      16 MEDIA      24 PTYPE                          │
      └──────────────────────────────────────────────────────────────┘
    ────────────────────────────────────────────────────────────────────
    Enter DROM numbers (separated by commas) to be purged.


    ┌─────────┬─────┬─────┬─────┬─┬─────┬─────┬─────┬──────┐
    │PURGE ALL│     │     │     │ │     │     │     │ EXIT │
    └─────────┴─────┴─────┴─────┴─┴─────┴─────┴─────┴──────┘
```

Adding Programs to the ROUTIL List

You can add your own program and data files to those cataloged by ROUTIL by using the EDITOR program. Although ROUTIL was originally designed to copy run-only programs, any type of file can be copied with this utility.

If a data file named RODATA is on-line when ROUTIL is executed, the utility reads RODATA and adds or deletes the file names to the lists generated during COPY PROGRAM and PURGE PROGRAM routines. If multiple copies of RODATA are on-line, the file on the default device is read. If no copy of RODATA is on the default device, the on-line devices are searched in the order of their appearance on the READ LABEL command. If a RODATA file is not found, ROUTIL lists only the RUN-ONLY programs.

The syntax of an entry in the file RODATA is as follows:

prog name, *number of files*, *file spec*$_1$ [, *file spec*$_2$ ...]

The parameters are:

prog name   The generic name for set of files. This does not have to correspond to a program or file name. For example, "BPRGS" in the ROUTIL system utilities list refers to a set of binary programs and not to the name of any one program.

number of files   The number of files in the set. This number must match the number of files in the list that follows it.

file spec   The name of a file to be included in the file set. If the file is protected with a protect key, the protect key must be enclosed in parentheses and must immediately follow the file name. If you want to protect a file that is not yet protected, you can assign a protect key at this time by enclosing the new protect key in parentheses immediately following the file name; it is not possible to make a file run-only in this fashion. If the named file is a run-only file, do not include a protect key.

The format of the file RODATA is simply a protect key on the first line followed by lines consisting of the entries described above. An entry may be continued on more than one line. The following screen is an example of using EDITOR to create RODATA:

```
                                TEXT EDITOR


/ADD


        1    PRKEY
        2    Games,3,SHIPS,OTHELLO,HOBBIT
        3    Ledger,5,LFORM1(LEDGE),LFORM2,LEDOV1,LEDOV2,LEDGER
        4    Dbase,3,BASE[5],DBFORM,DBPROG
        5    //

 /KEEP "RODATA",UNN


 /
```

The first line is the protect key for RODATA. In this example, the protect key for RODATA is "PRKEY". Whenever this version of RODATA is copied by ROUTIL, it is protected on the destination device with the protect key listed in the first line. The protect key for RODATA must be included and must not be null.

The second line of the example RODATA file defines a set of programs referred to as "Games". The three files (SHIPS, OTHELLO, HOBBIT) which make up the set are unprotected.

The third line of the example RODATA file defines a set of programs called "Ledger". The Ledger set includes two data files containing forms (LFORM1 and LFORM2), two files that contain subprograms (LEDOV1 and LEDOV2), and a main program (LEDGER). Note that the data file LFORM1 is protected with the protect key "LEDGE"; this is done by including the protect code in parentheses immediately following the file name.

If any file in a program set is a run-only file, you should not include a protect code with the file name when listing it in RODATA.

The fourth line of the example RODATA file defines a set of programs and data base files called "Dbase". The Dbase set includes the data base root file named "BASE" and its data sets. (BASE[5] means that the root file of the data base named "BASE", together with its five data sets, will be operated on by ROUTIL). It also includes a data file containing a form (named "DBFORM") used by the main program "DBPROG".

The fifth line contains the double slash (//) that is used to exit the ADD mode of the EDITOR.

NOTE

When copying data sets with ROUTIL, the data base for the source and destination sets must not be open. Copying data sets without specifying all related data sets can cause data loss when the data sets are accessed.

When defining a program set in RODATA, the main program (the file specified when executing the RUN command) of the set should be the last file name in the list. The reason for this is that ROUTIL copies program sets to the destination volume beginning with the first file listed in the set and continues copying until the last file in the set has been copied. However, when purging program sets, ROUTIL starts by purging the last file listed in RODATA for the set and continues purging files until the the first file listed in the set has been purged. Thus, when the main program is the last in the program set list, it is not possible to have a main program on a volume along with an incomplete set of files (due to an incomplete COPY or PURGE operation).

The following menu shows how ROUTIL might display the set of files when the RODATA file of the preceding example is used:

```
              RUN-ONLY PROGRAM MAINTENANCE UTILITY
                         PROGRAM COPY

                    Source          Volume:K2,5,1
                    Destination     :U2,5,0


        1  BACKUP      9  DUPL       17  PFORMV      25  WORK
        2  BCR        10  EDITOR     18  QUERYV      26  XREF
        3  BPRGS      11  FVBACK     19  ROUTIL      27  Games
        4  CFORM      12  INIT       20  RECOVR      28  Ledger
        5  CONFIG     13  LK3000     21  REPACK      29  Dbase
        6  DBLOAD     14  MFORMO     22  SCHEMA
        7  DBMODS     15  MONADV     23  TAPFIX
        8  DBUNLD     16  MONREV     24  TEST


Enter list of program numbers separated by commas or select a function.



   COPY              OTHER                                          EXIT
   ALL               PROGRAM
```

Note that "Games", "Ledger" and "Dbase" are now at the end of the list. Care should be taken to ensure that RODATA is in the correct format because ROUTIL will not run if RODATA contains an inconsistency.

ROUTIL can accommodate up to 20 additional program sets by using the RODATA file. Up to 50 files can be in each set. However, only approximately 75 total files can be specified in a RODATA file.

INTRODUCTION

MONADV is a utility that enables file transfer between your system and an HP Vectra (or Vectra-like PC). MONADV interacts with the AdvanceLink 2392 file transfer software, ensuring that all data is transferred without error and that data is formatted properly for storage on the destination system. The HP Vectra or other PC must be running the following software:

- AdvanceLink 2392 , revision A.05.04 or more recent

- MS-DOS, version 3.10 or more recent*

- ROM BIOS, version A.01.05 or more recent*

- RAM BIOS, version A.01.05 or more recent*

Restrictions

For error-free file transfer, the following conditions must be met:

- Transfer only HP 250 or HP 260 files of type DATA to an HP Vectra.

- Files of type DATA must contain only string data; no other data types (such as integer or reals) can be transferred from your system to an HP Vectra. The maximum string length is 2000 bytes.

- The minimum block size allowed for file transfer is 4 bytes. (The default block size is automatically set to the maximum, 242 bytes. Users familiar with AdvanceLink 2392 can alter the block size with the &blocksize command.)

- When transferring an ASCII or EXTENDED ASCII file from HP Vectra to your system, the record size specified must be greater than or equal to the number of characters in the longest line of the source file.

- When copying 8-bit ASCII files between an HP Vectra and your system, execute AdvanceLink 2392's &ASCII transparent command to disable automatic conversion between 8-bit character sets. If such a file is copied from an HP Vectra to your system and back, character set conversion can cause the loss of some data.

---

*Earlier revisions can be used; however, the maximum baud rate with an earlier revision is restricted to 9600.

Memory Requirements for Transfer of ASCII Files

When you transfer an ASCII file from the HP Vectra to your computer system, your computer system needs approximately twice as much disc space to store the file as that needed by the HP Vectra. This difference in storage space is due to the different handling of ASCII files by the two computer types.

Binary files occupy the same amount of disc space on your computer system as they occupy on the HP Vectra.

Assistance

If you need help configuring your system, installing or configuring the HP Vectra, or using the HP Vectra as a workstation on your system, refer to the following documents:

- "Preparing for Your HP 260" - This manual describes cabling requirements for connecting an HP Vectra to your system. The following types of connection are possible: RS-232-C (direct), modem, or X. 25.

- "Installing Your HP 260" - This manual describes the physical connection of an HP Vectra to your system. It also provides the information needed when configuring an HP Vectra with AdvanceLink 2392 to operate as a system workstation.

- "Operating and Managing Your HP 260" - This manual includes instructions for the use of an HP Vectra as a system workstation.

- "Setting Up AdvanceLink 2392 " - This manual describes how to install, configure, and operate AdvanceLink 2392 . It is provided with the software package.

- "AdvanceLink 2392 " - This manual describes in detail how to operate AdvanceLink 2392 . Refer to this manual as you read the instructions in this section.

INSTALLING MONADV

The MONADV program should have been installed on your system disc when you installed your new Operating System or updated your Operating System to the current version. Use the **CAT** command to discover whether the MONADV program is present on any of the mass storage devices in your system.

If you cannot find MONADV on any of your mass storage devices, you must install the file from your Operating System distribution medium. Refer to the section of this manual titled "Run Only Programs" where the instructions for running the ROUTIL program to copy utility programs are given. Follow the instructions in the sub-section titled "Copying Run-Only Files" to copy the MONADV file from the medium on which your current Operating System was delivered to your system disc.

The MONADV file is resident on the following Operating System distribution media:

- Operating System tape cartridge

- The 8-inch floppy titled "UTILITIES"

- The 3.5-inch microfloppy titled "UTILITIES 2"

If you have problems making this copy, contact your local, Hewlett-Packard support person, or your computer supplier.

INTERACTIVE FILE TRANSFER

Individual files can be transferred between your system and an HP Vectra by using AdvanceLink's softkey driven menus. In these menus, you provide:

- the name and location of the file to transfer,

- the name and location of the new file,

- the type of file being transferred, and

- the direction of file transfer; for example, from an HP Vectra to remote (your system) or from remote to an HP Vectra.

An Example: Transferring a File to HP Vectra

The following example illustrates how to transfer a single file from your system to an HP Vectra. Use this procedure to transfer any file from your system to an HP Vectra; simply change the name of the file.

Similarly use the example procedure to interactively transfer any file from an HP Vectra to your system; simply change a single parameter to change the transfer direction.

If you need more information than is provided in the example, refer to the AdvanceLink 2392 documentation.

NOTE

In the following interactive example, you will transfer the file "LOGVEC" from your system to an HP Vectra. LOGVEC is automatically installed on your system when MONADV is installed. You must transfer LOGVEC to your HP Vectra so that you will be able to:

• quickly and easily connect your HP Vectra as a system workstation,

• add an entry to HP Vectra's PAM, allowing automatic connection as a system workstation (see the section titled "Using PAM to Transfer Files"),

• include file transfer applications in HP Vectra's PAM, and

• execute command-file driven file transfers.

1. Load and run AdvanceLink 2392 on the HP Vectra.

2. Type [CONTROL][BACKSPACE] to inform your system that the HP Vectra is now ready to operate as a workstation.

3. Verify that the workstation is connected correctly by typing the following:

    PI   [ENTER]

If the Vectra is correctly configured and connected, the system displays the value of π: 3.1415926536   If the correct value is not displayed, the HP Vectra is not working properly as a workstation. For help, refer to the manuals listed at the beginning of this section.

4. Next, determine the volume specifier of the volume on which the files MONADV and LOGVEC are stored. Ask your system's principal operator for assistance or use BASIC's **CAT** command to locate the files.

Set the default mass storage volume to be the volume containing MONADV by executing the following:

    MSI *volume specifier*

<div style="text-align:center">

┌─────────────┐
│   **NOTE**   │
└─────────────┘

</div>

The default mass storage volume must be the volume containing MONADV. If it is not and an error occurs, only an error number is displayed; an error message will not be displayed.

5. Start MONADV by executing the following command:

    RUN "MONADV"

MONADV automatically returns the HP Vectra to local mode. AdvanceLink 2392's softkeys are displayed.

6. The sample file you will transfer contains only 7-bit ASCII characters. However, if you use this procedure to copy an 8-bit ASCII file between an HP Vectra and your system, perform the following to ensure that no data is lost due to automatic character set conversion:

> Press the softkey labeled "Command". When the new menu is displayed, press the softkey labeled "Enter Command". AdvanceLink 2392 then displays the prompt Enter a command directly: and positions the cursor in an inverse video field. Type the following in this field:
>
>   &ASCII transparent
>
> Then press [ENTER]. When the prompt Enter a command directly: is again displayed, press [ENTER] again. Finally, press the softkey labeled "AdvLink Main".

7. Press the softkey labeled "File Transfer". AdvanceLink 2392 displays a screen that lets you specify parameters of the file transfer, such as the file transfer direction and the transfer method.

8. Find the inverse video field labeled "Transfer Direction". The field should contain the words "FROM REMOTE". If it does not, position the cursor in the inverse video field. Press the softkey labeled "Next Choice" until the field contains the words "FROM REMOTE".

> **When transferring files from an HP Vectra to your system,** the "Transfer Direction" field must contain the words "TO REMOTE". If you want to transfer a file from an HP Vectra to your system, position the cursor in the field labeled "Transfer Direction" and press the "Next Choice" softkey until the field contains the words "TO REMOTE".

9. Find the inverse video field labeled "Transfer Method". This field should contain the characters "HP". If it does not, position the cursor in the field; press the softkey labeled "Next Choice" until the field contains the characters "HP".

```
┌─────────────┐
│    NOTE     │
└─────────────┘
```

The field labeled "Transfer Method" **must** contain the characters "HP". If the field contains any other characters, the transfer operation will not work.

10. Find the inverse video field labeled "Will you use a command file ...". This field should contain the word "NO". If it does not, position the cursor in the field; press the softkey labeled "Next Choice" until the field contains the word "NO".

11. Verify that the contents are accurate and then press the softkey labeled "Continue". The top of the new screen lists the information entered on the previous screen.

12. Position the cursor in the field labeled "Local file". In this field, enter the name with which the copied file will be stored on the HP Vectra. If you do not enter a full path name, the file is stored in the current directory. For this example, enter the following in the "Local file" field:

    hp260

This tells AdvanceLink 2392 to store the file copied from your system in AdvanceLink's default directory, with file name "hp260".

> **When transferring a file from the HP Vectra to your system,** this field should contain the name of the file to be transferred. If you do not enter a full path name, AdvanceLink 2392 assumes that the named file resides in the current directory.

13. Find the field labeled "Remote file". In this field, enter the name of the file to be copied from your system. Include a volume specifier with the file name if the file is not stored on the default mass storage volume. If the file is protected with a protect code, append the protect code to the file name and volume specifier as indicated in the following:

file name [*volume specifier*] [**: :***protect code*]

> **When transferring a file from the HP Vectra to your system**, this field should contain the name of the file in which the transferred file will be stored. If you do not enter a volume specifier with the file name, AdvanceLink 2392 creates the file on your system's default mass storage volume.
>
> If the named file does not yet exist or if it exists but is not protected by a protect code, you can assign a protect code to the file by appending a protect code to the file name, as indicated below. If the named file already exists on your system and is protected with a protect code, append the protect code to the file name and volume specifier as indicated below:
>
> *file name* [*volume specifier*] [**: :***protect code*]

In this example, the file "LOGVEC" is being copied to an HP Vectra from your system. LOGVEC is not protected with a protect code, unless one was assigned by another user. If LOGVEC is not located on your system's default mass storage volume, include a volume specifier when entering the file name in the "Remote file" field:

LOGVEC [*volume spec*]

14. Find the field labeled "File type will be". This field can contain any of the following values (explained below): BINARY, ASCII or EXTENDED ASCII. When transferring the example file LOGVEC, the "File type" field should contain either the word ASCII or the words EXTENDED ASCII. If it does not, position the cursor in the inverse video field and press the softkey labeled "Next Choice" until the field contains "ASCII" or "EXTENDED ASCII".

ASCII   **Use this file type when transferring a file that contains 7-bit ASCII data from HP Vectra to your system.** File type ASCII tells AdvanceLink 2392 to set the high order or eighth bit to zero when transferring data. Notice that special characters (such as accented characters and characters special to languages other than U.S. English) often require 8 bits.

When transferring a file from your system to HP Vectra, ASCII and EXTENDED ASCII file types are treated identically; for each character transferred from your system, AdvanceLink 2392 stores all eight bits exactly as received.

EXTENDED ASCII   Use this file type for transferring 8-bit ASCII data. For example, if the file contains accented characters, specify an EXTENDED ASCII file type to ensure that all data is correctly copied. Not all implementations of 8-bit character sets are identical or interchangeable. Modification of an 8-bit data file might be necessary before the file can be used on a system other than the one on which it was created.

BINARY   Use this file type for transferring non-textual files; by specifying a binary file type, you instruct the remote system to treat the file as a stream of bytes. Using binary file type guarantees that an exact duplicate of the source file is created; however, it might create it in a form unusable on the system to which it is copied.

For example, suppose that you want to transfer a file from an HP Vectra to your system so that the file can be included in your system's weekly backup. The file will not actually be used on your system; it will only be copied with the weekly backup. Specifying file type BINARY when transferring the file from the HP Vectra to your system would reduce the chance of any loss of data.

15. Find the field labeled "Record size (bytes)". When transferring a file from your system to an HP Vectra, this value is fixed by AdvanceLink 2392.

When transferring a file from an HP Vectra to your system, this field is displayed in inverse video, indicating that its value can be changed. When transferring ASCII or EXTENDED ASCII files from an HP Vectra to your system, the value of the record size field must be greater than or equal to the number of characters in the longest line of the source file.

To modify the "Record size" field, position the cursor in the field and type the desired value.

16. Verify that the information on the screen is correct and then press the softkey labeled "Start Transfer". If a file already exists on the destination system with the supplied file name, AdvanceLink 2392 notifies you and asks if the file transfer should proceed. Pressing the softkey labeled "Yes" causes the existing file to be overwritten with the file being copied; pressing the softkey labeled "No" allows you to change the name of the file to be created on the destination system.

The following message is displayed at the top of the screen when the transfer is complete:

Remote to local file transfer complete.

```
┌─────────────┐
│   NOTE      │
└─────────────┘
```

When transferring a file from your system to an HP Vectra, the information listed in the FILE STATUS AREA will change as the file transfer completes. AdvanceLink 2392 **estimates** "Characters to transfer" as the number of records times the record size. Because your system often stores more than one line in a single record and because not all records are necessarily used, this estimate usually differs from the actual number of characters transferred. Thus when file transfer is complete, AdvanceLink "re-paints" the FILE STATUS AREA, replacing the estimated "Characters to transfer" with the actual number of characters transferred.

17. After the transfer completes, AdvanceLink 2392 again displays the menu that allows you to specify: the remote file name; the local file name; the file type; and the record size. To transfer another file in the same direction, type in the new file names, file type and record size.

To transfer a file in the opposite direction, press the softkey labeled "Transfer Main". Then repeat the preceding procedure, beginning with the step where the "Transfer Direction" field is modified.

If you are finished transferring files, press the softkey labeled "Transfer Main". Then press the softkey labeled "AdvLink Main". This terminates MONADV on your system. The HP Vectra is again functioning as a workstation, even though AdvanceLink 2392 is still running on the HP Vectra. To terminate AdvanceLink 2392, simultaneously press (SHIFT) and the key labeled "F2".

COMMAND-DRIVEN FILE TRANSFER

Individual files can be transferred between your system and an HP Vectra using AdvanceLink's **&dscopy** command. Commands can be typed interactively or can be stored and executed as a group in a command file.

Command-driven file transfer makes it easy to quickly transfer many files. It is also ideal for the regular transfer of one or more files; for example, when regularly transferring a data file from your system to HP Vectra for use with a spread sheet application program.

Command-driven file transfer has an additional advantage over interactive file transfer in that the file transfer can be initiated directly from an HP Vectra's PAM (Personal Application Manager).

This section describes how to transfer a file between your system and HP Vectra, using AdvanceLink 2392 commands. It also describes how to store these commands in a command file and how to add the command file to HP Vectra's PAM.

Interactive Use of the &dscopy Command

AdvanceLink 2392's interactive menus can be cumbersome when transferring many files. In these instances, it is easier to use AdvanceLink's **&dscopy** command to transfer the files. To use this file transfer method:

1. Load and run AdvanceLink 2392 on the HP Vectra.

2. Type (CONTROL)(BACKSPACE) to tell your system that the HP Vectra is ready to operate as a workstation.

3. Change the system's default mass storage volume to be the volume containing MONADV by executing the following (where *volume specifier* is the volume specifier of the volume on which MONADV is stored):

   MASS STORAGE IS *volume specifier*

   ```
   NOTE
   ```

   The default mass storage volume must be the volume containing MONADV. If it is not and an error occurs, only an error number is displayed; an error message will not be displayed.

4. Start MONADV by executing the following command:

   RUN "MONADV"

   MONADV automatically returns the HP Vectra to local mode. AdvanceLink 2392's softkeys are displayed.

5. Press the softkey labeled "Command". A new menu is displayed.

6. When the "Command" menu is displayed, press the softkey labeled "Enter Command". AdvanceLink 2392 then displays the prompt **Enter a command directly:** and positions the cursor in an inverse video field.

If you are transferring an ASCII file that contains 8-bit characters, you should enter the following command to prohibit automatic conversion between 8-bit character sets that can result in data loss:

   &ASCII transparent

To transfer a file, type the **&dscopy** command in the inverse video field. The syntax of the **&dscopy** command and an explanation of its options are provided in the following paragraphs. (If you decide not to type a command now, press (ENTER) with no data in the field. This terminates interactive command entry.)

The syntax of the **&dscopy** command is:

$$\text{\&dscopy } \textit{filename} \left\{ \begin{array}{l} [\,,\text{remote}] \\ [\,,\text{local}] \end{array} \right\} \text{ to } \textit{filename} \left\{ \begin{array}{l} [\,,\text{local}] \\ [\,,\text{remote}] \end{array} \right\} \left\{ \begin{array}{l} [\text{ASCII}] \\ ; \\ [\text{binary}] \end{array} \right\} [\,,\text{size}]$$

The first *filename* listed is the name of the file to be copied; the second *filename* is the name of the file on the destination system in which the copied file is to be stored. With at least one of the file names, **remote** or **local** must be specified; this determines the direction of file transfer. **local** specifies a file on the HP Vectra; **remote** specifies a file on your system.

When specifying *filename* for the file on your (**remote**) system, include a volume specifier if the file is not stored on your system's default mass storage volume. If the file does not yet exist or if it exists but is not protected by a protect code, you can assign a protect code to the file by appending a protect code to the file name, as indicated below. If the file already exists on your system and is protected with a protect code, append the protect code to the file name and volume specifier, as indicated below.

   file name [*volume specifier*] [:: *protect code*]

```
   ┌─────────────┐
   │    NOTE     │
   └─────────────┘
```

If *filename* contains the character ";" or ",", it must be enclosed in double quotes. For example, suppose that your are transferring the file **TOM** located on the volume named **SALES**. The file transfer command would be:

   &dscopy "TOM,SALES",remote to TOM

If the file type (**ASCII** or **binary**) is not specified, AdvanceLink 2392 assumes that the file is ASCII. (ASCII file type specifies that 8-bit ASCII data is to be transferred.)

If a record size (size) is not specified, AdvanceLink 2392 assumes record size 80 for ASCII transfers and 128 for binary transfers. **When transferring a file from HP Vectra to your system, the record size must be greater than or equal to the number of characters in the longest line of the source file.**

For example, assume that you want to transfer the file "ROLAND" from the HP Vectra to your system. The copied file should be stored on your system with the name "STICH". Also assume that you are copying the file so that it can be included in your system's weekly backup. Because the file will not be used on your system, you elect to transfer the file as type "binary". This ensures that all characters are copied exactly as they exist on the HP Vectra. The following command could be used:

```
&dscopy ROLAND,local to STICH,remote;binary
```

7. When the **&dscopy** command completes execution, MONADV terminates and the HP Vectra returns to "workstation" mode. To transfer additional files with the **&dscopy** command, repeat this procedure, beginning with the execution of RUN "MONADV".

If you want to execute more than one command at one time, follow the procedure given in the next sub-section, titled "Using a Command File to Transfer Files".

Using a Command File to Transfer Files

When regularly transferring the same file or set of files between your system and the HP Vectra, a command file can greatly reduce the effort required. For example, if you regularly transfer data files from your system to HP Vectra for use with a spread sheet application, a command file allows you to transfer the files with "the push of a button". Similarly, if you frequently copy the same group of files from HP Vectra to your system for the purpose of backing up the files, a command file drastically reduces your efforts.

Creating a Command File

To create a command file, perform the following steps:

1. Load and run AdvanceLink 2392 on the HP Vectra.

2. When AdvanceLink's main menu is displayed, press the softkey labeled "Commands". A new menu is displayed.

3. Press the softkey labeled "Cmd File Maint". AdvanceLink displays a new menu and asks you to enter the name of the command file to be created.

4. Type the name of the command file in the field labeled "Name of File to Create or Modify". If you want to assign a password to the command file, type the password in the field labeled "File Password".

5. Press the softkey labeled "Create File". This displays the Command File Edit Screen, allowing you to create the command file. (To learn how to use AdvanceLink's Command File Edit Facility, refer to the AdvanceLink 2392 Manual chapter titled "Using Command Files".)

6. The first commands you must add to the command file prepare your system and the HP Vectra for file transfer by:

- connecting the HP Vectra to your system as a workstation,

- initiating MONADV on your system, and

- pausing execution of the command file until MONADV signals AdvanceLink 2392 that it is ready to proceed.

The easiest way to connect the HP Vectra to your system as a workstation is by executing the file **hp260** that you transferred in the earlier interactive file transfer example.

To prepare the HP Vectra and your system for file transfer, add the following commands to your command file:

```
&execute hp260
&send 'MASS STORAGE IS volume specifier'
&send 'RUN "MONADV"'
&waitdc "^Q"
```

7. For each file you want to transfer, add one **&dscopy** command to the command file. The syntax of the command and an explanation of its options are provided in the following paragraphs.

The syntax of the **&dscopy** command is:

$$\texttt{\&dscopy}\ filename \left\{ \begin{array}{l} \texttt{[,remote]} \\ \texttt{[,local]} \end{array} \right\} \texttt{to}\ filename \left\{ \begin{array}{l} \texttt{[,local]} \\ \texttt{[,remote]} \end{array} \right\} \left\{ \begin{array}{l} \texttt{[ASCII]} \\ \texttt{;} \\ \texttt{[binary]} \end{array} \right\} \texttt{[,size]}$$

The first *filename* listed is the name of the file to be copied; the second *filename* is the name of the file on the destination system in which the copied file is to be stored. With at least one of the file names, remote or local must be specified as this determines the direction of file transfer. local specifies a file on the HP Vectra; remote specifies a file on your system.

When specifying *filename* for the file on your (remote) system, include a volume specifier if the file is not stored on your system's default mass storage volume. If the file does not yet exist or if it exists but is not protected by a protect code, you can assign a protect code to the file by appending a protect code to the file name, as indicated below. If the file already exists on your system and is protected with a protect code, append the protect code to the file name and volume specifier, as indicated below.

file name [*volume specifier*][: : *protect code*]

If either *filename* contains the character ";" or ",", the *filename* must be enclosed in double quotes. For example, suppose that your are transferring the file **TOM** located on the volume named **SALES**. The *&dscopy* would be:

&dscopy "TOM,SALES",remote to TOM

If the file type (ASCII or binary) is not specified, AdvanceLink 2392 assumes that the file is ASCII. (ASCII file type specifies that 8-bit ASCII data is to be transferred.)

If a record size (**size**) is not specified, AdvanceLink 2392 assumes record size 80 for ASCII transfers and 128 for binary transfers. **When transferring an ASCII file from HP Vectra to your system,** the record size must be greater than or equal to the number of characters in the longest line of the source file.

For example, assume that you want to transfer the file "ROLAND" from the HP Vectra to your system. The copied file should be stored on your system with the name "STICH". Also assume that you are copying the file so that it can be included in your system's weekly backup. Because the file will not be used on your system, you elect to transfer the file as type "binary". This ensures that all characters are copied exactly as they exist on the HP Vectra. The following command could be included in the command file:

```
&dscopy ROLAND,local to STICH,remote;binary
```

NOTE

AdvanceLink's Command File Edit Facility can create/modify command files up to 145 lines long. If you need to create/modify a command file larger than this, you must use a different editor.

---

8. After you add the **&dscopy** commands to the command file, include the following command as the last command in your command file. It terminates AdvanceLink 2392's connection to your system and exits AdvanceLink 2392. command as the last command in your command file:

```
&exit
```

9. To exit the Command File Edit Facility, press the softkey labeled "Save File". AdvanceLink 2392 then displays a new menu, allowing you to specify the name with which the command file will be saved.

If you want to execute this command file directly from PAM, press the softkey labeled "Save As BAT File". This creates both a normal command file with the specified file name **and** a file named *filename*.BAT, where *filename* is the specified name of the command file. The normal command file is stored in the currently active directory on the currently active device, unless a full pathname is supplied. The file *filename*.BAT is saved in the directory containing the work copy of AdvanceLink, whether or not it is currently active.

If you only want to execute this command file via AdvanceLink's softkeys, or if you only want to execute this command file from another command file, press the softkey labeled "Save As File". The command file is stored in the current directory on the currently active device, unless a full pathname is supplied.

Sample Command File

The following is a sample command file that transfers two files (SALES and COST) from the remote system to an HP Vectra and one file (stats) from the HP Vectra system to the remote system:

```
&execute hp260
&send 'MASS STORAGE IS ":T"'
&send 'RUN "MONADV"'
&waitdc "^Q"
&dscopy SALES,remote to sales
&dscopy COST to cost,local
&dscopy stats,local to STATS,remote
&exit
```

Using PAM to Transfer Files

If you regularly transfer the same set of files between the HP Vectra and your system, you can greatly reduce your efforts by creating a command file and then installing the command file in HP Vectra's PAM. A command file can be installed in PAM and executed by performing the following steps:

1. Create a command file as directed in this section's paragraphs titled "Creating a Command File". When saving the command file, make sure that you press the softkey labeled "Save As BAT File"; this automatically creates a file of the form required for installation in PAM.

2. Terminate AdvanceLink 2392 if it is still running. PAM's main menu should now be displayed. If it is not, refer to the manual titled "Using Vectra" for assistance.

3. When PAM's main menu is displayed, press the softkey labeled "Manage Applics". The menu titled "Manage Applications" is now displayed.

4. Press the softkey labeled "Add". This causes the menu titled "Add Application" to be displayed.

5. Press the softkey labeled "Add Unlisted". This displays the menu titled "Add Unlisted Application".

6. In the inverse video field labeled "Path:", type the pathname of the directory containing the command file named *filename*.BAT. Unless you have moved this file, it is located in the directory containing the work copy of AdvanceLink. Specify both a drive name (such as C:) and a path (beginning with the \ designation for the Root directory). The complete pathname can consist of no more than 64 characters.

   After typing the pathname, press ⬚TAB⬚ or ⬚ENTER⬚ to position the cursor in the next field, titled "Application Title".

7. The cursor is now positioned in the inverse video field labeled "Application Title". In this field, type the title you want to be displayed in PAM. The title can consist of up to eighteen characters, including spaces. A title must be specified. If you attempt to exit this menu without entering a title, the message "You must provide a Title" is displayed.

   Press ⬚TAB⬚ or ⬚ENTER⬚ to position the cursor in the next field, titled "Run Command".

8. The cursor is now positioned in the inverse video field labeled "Run Command". In this field, type *filename*.BAT, where *filename* is the name specified when saving the command file.

9. When you are satisfied that the information in all three fields is correct, press the softkey labeled "Save".

10. Press the softkey labeled "Exit". The "Add Application" menu is now displayed.

11. Press the softkey labeled "Exit Add" to display the "Manage Applications" menu.

12. Press the softkey labeled "Exit Manage" to display PAM's main menu. The title of your file transfer application is now displayed in PAM's menu.

13. **To execute the command file,** simply select the file transfer application from PAM's main menu as you would any other application.

Using PAM to Connect your HP Vectra to the HP 260 in Workstation Mode

1. Save the command file into which you transferred the LOGVEC file (see the section titled "An Example: Transferring a File to HP Vectra") as a BAT file using the AdvanceLink Command File Maintenance Utility.

2. Install the label "HP260 Workstation" into PAM , using the *filename.*BAT file, where *filename* is the name you gave to the LOGVEC file when you transferred it to the HP Vectra. Refer to the section titled "Using PAM to Transfer Files"; Steps 2-12, for the details of this installation.

Executing a Command File

A command file can be executed in many different ways. Several of the most commonly used ways are listed below:

- If the command file has been installed in PAM (as described in the paragraphs titled "Using PAM to Transfer Files"), simply select the file transfer application (command file) from PAM's main menu as you would any other application.

- A command file can be executed by another command file by including either of the following commands:

    &execute *command__file__name*

        or

    &chain *command__file__name*

Refer to the AdvanceLink 2392 manual for more information about these commands.

- When AdvanceLink's main menu is displayed, a command file is executed by first pressing the softkey labeled "Command" and then pressing the softkey labeled "Command File". AdvanceLink 2392 then displays a prompt, asking you to enter the name of the command file to be executed. Typing the name of the command file and pressing (ENTER) causes the command file to be executed.

Exiting from the MONADV Program without Starting A File Transfer

If you want to exit the AdvanceLink file-transfer menu without starting a file transfer, press softkey ⌐ *f8* ⌐ to return to the AdvanceLink main menu. Then press the BREAK key (softkey F1) or press (RETURN) four times. Your HP Vectra will then be in workstation mode on your computer system.

Transferring Files Through an HP 260 Network

In general the procedure for transferring files between an HP Vectra to a remote HP 260, which is connected to your own HP 260 using NET260, is very similar to the procedure for transferring files without the use of a network. Use the following procedure to initiate a file transfer operation through an HP 260 Network.

1. Load and run AdvanceLink 2392 on the HP Vectra.

2. Type (CONTROL)(BACKSPACE) to tell your system that the HP Vectra is ready to operate as a workstation.

3. Connect your HP Vectra to the remote HP 260 using the relevant NET260 commands.

4. Change the remote HP 260's default mass storage volume to be the volume containing MONADV by executing the following (where *volume specifier* is the volume specifier of the volume on which MONADV is stored):

   MASS STORAGE IS *volume specifier*

   ```
   NOTE
   ```

   The default mass storage volume must be the volume containing MONADV. If it is not and an error occurs, only an error number is displayed; an error message will not be displayed.

5. Start MONADV by executing the following command:

   RUN "MONADV"

   MONADV automatically returns the HP Vectra to local mode. AdvanceLink 2392's softkeys are displayed.

6. Press the softkey labeled "Command". A new menu is displayed.

7. When the "Command" menu is displayed, press the softkey labeled "Enter Command". AdvanceLink 2392 then displays the prompt **Enter a command directly:** and positions the cursor in an inverse video field.

8. Enter the following three commands, separately:

   ```
   &HEX ON
   &HOSTCOPY 'RUN MONITOR.PUB.SYS;INFO="HEX"'
   &BLOCKSIZE 42
   ```

The three commands that you have just entered prepare the system to conduct a file transfer in hexadecimal format. You must use hexadecimal format to avoid losing data when you transfer files to a remote HP 260 using NET260. Now you can continue with the file transfer, either interactively by pressing the softkey labeled "AdvLink Main" and continuing from Step 7. of the section titled "An Example: Transferring a File to HP Vectra", or in command-driven mode (using the procedure titled "Interactive Use of the &dscopy Command").

Transferring Files over an X.25 Connection

The operation of AdvanceLink 2392 with an HP Vectra connected to an HP 260 over an X.25 connection is exactly the same as its operation with an HP Vectra connected directly to an HP 260.

```
NOTE
```

Do not use the instructions in Appendix E of the AdvanceLink 2392 manual to conduct file transfer between an HP Vectra and an HP 260, which are connected over an X.25 connection.

Hewlett-Packard supply the HP 2334A multimux for the provision of X.25 connectivity. The following paragraphs describe the configuration of your computer system needed to connect an HP 2334A, and certain details of the configuration of the HP 2334A itself.

Configuring the HP 260 for the HP 2334A

1. Run the HP 260 "CONFIG" utility and select the **Asynchronous Port Configuration** function.

2. Select the I/O port to which the HP 2334A Multimux is attached.

3. Configure this I/O port with the following values.

CONFIG field label	Value
Class	Terminal
Speed	9600
Type	2392
SwConf	MoSwEU

Configuring the HP 2334A

You must create two "User-Defined Profiles". Refer to the HP 2334A Reference Manual for information on creating a User-Defined Profile and assigning profiles to ports.

Profile 62

User-Defined Profile 62 must have the following parameter values.

1:0	0:13
2:0	1:0
3:127	2:0
4:1	3:0
5:1	4:0
6:0	5:0
7:0	6:0
8:0	7:128
9:0	8:0
10:0	9:0
11:14	10:0
12:0	11:0
13:0	12:0
14:0	13:0
15:0	14:4
16:8	15:0
17:24	16:0
18:0	17:0
	18:0
	19:128
	20:0
	21:0
	22:64
	23:1
	24:122
	25:0

Assign profile 62 to the HP 2334A asynchronous port connected to the HP 260.

Profile 122

Profile 122 must have the following parameter values.

1:1	0:13
2:0	1:0
3:0	2:0
4:1	3:0
5:1	4:0
6:5	5:0
7:1	6:0
8:0	7:128
9:0	8:0
10:0	9:0
11:14	10:0
12:0	11:0
13:0	12:0
14:0	13:3
15:0	14:0
16:8	15:0
17:24	16:0
18:0	17:0
	18:63
	19:255
	20:0
	21:0
	22:64
	23:1
	24:0
	25:0

Dealing with Line Noise

If your computer system and your HP Vectra are connected via a MODEM, you might experience difficulty with line noise. Such noise could affect your file transfer operations. If you do have trouble with noise, there are two simple ways to deal with it. Firstly, you can reduce the size of the blocks of data you transfer by using the AdvanceLink 2392 &blocksize command. Secondly, you can increase the length of time the receiving computer waits for each block of data to arrive by using the AdvanceLink 2392 &timeout command.

These two responses: reducing the block size, and increasing the time out period will decrease the effects of line noise on your file transfer operations. Refer to your AdvanceLink 2392 manual for the details of using the &blocksize and the &timeout commands.

INTRODUCTION

MONADV is a utility that enables file transfer between your system and an HP 150. MONADV interacts with the AdvanceLink file transfer software, ensuring that all data is transferred without error and that data is formatted properly for storage on the destination system. The HP 150 must be running the following software:

- AdvanceLink, revision A.03.02 or more recent

- MS-DOS, version 2.11 or more recent*

- ROM BIOS, version B.01.04 or more recent*

Restrictions

MONADV provides for error-free transfer of files only when the following conditions are met:

- Only HP 250 or HP 260 files of type DATA can be transferred to HP 150.

- Files of type DATA must contain only string data; no other data types (such as integer or reals) can be transferred from your system to HP 150. The maximum string length is 2000 bytes.

- The minimum block size allowed for file transfer is 4 bytes. (AdvanceLink automatically defaults to a block size of 242 bytes. Users familiar with AdvanceLink can alter the block size with AdvanceLink's **blocksize** command.)

- When transferring a file from HP 150 to your system, the record size specified must be greater than or equal to the number of characters in the longest line of the source file.

- All files that are transferred between your computer system and the HP 150 must have names with **upper-case** alphabetic characters. For example, JOE is a valid file name for transfer but joe is not a valid file name.

---

*Earlier revisions can be used; however, the maximum baud rate with an earlier revision is restricted to 9600.

Assistance

If you need assistance configuring your system, installing or configuring the HP 150, or using the HP 150 as a workstation on your system, refer to the following documents:

- "Preparing for Your HP 260" - This manual describes cabling requirements for connecting an HP 150 to your system; connection can be via RS-232-C direct connection, via modem, or via X. 25.

- "Installing Your HP 260" - This manual describes physical connection of an HP 150 to your system. It also provides configuration data needed when configuring an HP 150 with AdvanceLink for operation as a system workstation.

- "Operating and Managing Your HP 260" - This manual includes instructions for use of an HP 150 as a system workstation.

- "Setting Up AdvanceLink" - This manual describes installation, configuration, and operation of AdvanceLink; it is provided with the software package.

- "AdvanceLink" - This manual provides an in-depth description for operation of AdvanceLink. You will want to refer to this manual as you read the instructions in this section.

INSTALLING MONADV

The MONADV program should have been installed on your system disc when you installed your new Operating System or updated your Operating System to the current version. Use the **CAT** command to discover whether the MONADV program is present on any of the mass storage devices in your system.

If you cannot find MONADV on any of your mass storage devices, you must install the file from your Operating System distribution medium. Refer to the section of this manual titled "Run Only Programs" where the instructions for running the ROUTIL program to copy utility programs are given. Follow the instructions in the sub-section titled "Copying Run-Only Files" to copy the MONADV file from the medium on which your current Operating System was delivered to your system disc.

The MONADV file is resident on the following Operating System distribution media:

- Operating System tape cartridge

- The 8-inch floppy titled "UTILITIES"

- The 3. 5-inch microfloppy titled "UTILITIES 2"

If you have problems making this copy, contact your local, Hewlett-Packard support person, or your computer supplier.

INTERACTIVE FILE TRANSFER

Individual files can be transferred between your system and an HP 150 by using AdvanceLink's softkey driven menus. Through these menus, you provide the name and location of the file to transfer, the name and location of the new file, and the type of file being transferred.

An Example: Transferring a File to HP 150

The following example illustrates how to transfer a single file from your system to an HP 150. By extension, this procedure can be used to transfer any file from your system to an HP 150; you need only change the name of the file.

If you need more information than is provided in the example, refer to the AdvanceLink documentation.

NOTE

In the following interactive example, you will transfer the file "LOG150" from your system to an HP 150; LOG150 is automatically installed on your system when MONADV is installed. You must transfer LOG150 to your HP 150 so that you can:

- quickly and easily connect your HP 150 as system workstation

- add an entry to HP 150's PAM, allowing automatic connection as a system workstation (see section titled "Using a Command File to Transfer Files")

- include file transfer applications in HP 150's PAM

- execute command-file driven file transfers.

1. Load and run AdvanceLink on the HP 150.

2. Type (SHIFT) ESC to signal your system that the HP 150 is now ready to operate as a workstation. The screen should be blank except for a blinking cursor.

3. Verify the workstation connection by typing the following:

   PI (RETURN)

If the HP 150 is correctly configured and connected, the system displays the value of π: 3.1415926536   If you suspect that the HP 150 is not working properly as a workstation, refer to the manuals described at the beginning of this section.

4. Next, determine the volume specifier of the volume on which the files MONADV and LOG150 are stored; ask your system's principal operator for assistance or use BASIC's **CAT** command to locate the files. With the BASIC **MASS STORAGE IS** command, set the default mass storage device to be the device containing MONADV.

<div align="center">

```
┌─────────────┐
│    NOTE     │
└─────────────┘
```

</div>

The default mass storage device must be set to the volume containing MONADV. If it is not and an error occurs, only an error number is displayed; a textual error message will not be displayed.

5. Start MONADV by executing the following command:

   `RUN "MONADV"`

   MONADV automatically returns the HP 150 to local mode; the AdvanceLink softkeys are displayed.

6. Press the softkey labelled "Transfer from Host.". AdvanceLink displays a screen allowing you to specify parameters of the file transfer.

7. Locate the inverse video field labelled "Host Source File". The cursor should be in this field (if it is not, position the cursor in the field). Type the name of the file that you want to transfer to the HP 150, and press (RETURN). If the file is not stored on the default mass storage device, include the volume specifier of the correct mass storage device in the file name. If the file has a protect code, include this protect code in the file name.

   For example, if a file called FINPLAN is stored on a device with the specifier :U2,5,0, and is protected with the code SAFE, the *filename* is as follows:

   `FINPLAN:U2,5,0::SAFE`

   In this example you want to transfer the file "LOG150". This file has no protect code, and should be stored on the same mass storage device as "MONADV". Therefore, simply type the name LOG150 in the field labelled "Host Source File".

<div align="center">

```
┌─────────────┐
│    NOTE     │
└─────────────┘
```

</div>

All files that are transferred between your computer system and the HP 150 must have names with **upper-case** alphabetic characters. For example, JOE is a valid file name for transfer but joe is not a valid file name.

8. Type the name of the file in which you want to store the transferred file on your HP 150, in the field labelled "Local Destination File".

For example you might give the name "HP260" to the file "LOG150" that you transfer to the HP 150. This name makes it clear that the file will be used to establish connection with the HP 260.

9. Press the softkey labelled "File Status". The following information is displayed about the file you want to transfer:

- Size of the file – the record size and the number of records in the file

- The "Space on Drive" field shows you how much space you have in the drive in which the file is to be stored on the HP 150

- If the file is ready to be transferred, the following message is displayed:

`Current information is valid`

10. The default mode for transfer from the HP 260 to the HP 150 is ASCII. If this is suitable for your transfer, press the softkey labelled "Start Transfer". The file transfer then takes place. If you want to transfer the file in BINARY mode, refer to the sub-section titled "Interactive Use of the &dscopy Command".

11. When the transfer is complete, the following message is displayed:

`Host to local file transfer complete`

```
NOTE
```

If the file you specified to store the transferred file already exists on the HP 150, the following message appears when you press the softkey labelled "File Status".

`Local file exists. It will be overwritten.`

You then have the choice of replacing the existing file with the new file that is to be transferred, or supplying a different name for the new file (and keeping the existing file).

If you want to replace the existing file with the new file, press the softkey labelled "Start Transfer".

If you do not want to replace the existing file, type a new name for the new file in the "Local Destination File" field. When the following message appears, press the softkey labelled "Start Transfer":

`Current information is valid`

NOTE

There is a second chance to avoid overwriting a file on your HP 150. When you press the softkey labelled "Start Transfer", you might see the message:

`File exists. Press Yes to purge file`

If you want to replace the existing file with the new file that you are about to transfer, press the Yes softkey.

If you do not want to replace the existing file, press the No softkey. Then type a different name for the new file that is about to be transferred.

Transferring Files from HP 150

The following paragraphs show you how to transfer files from your HP 150 to your computer system. If you need more information than is provided here, refer to the AdvanceLink documentation.

1. Load and run AdvanceLink on the HP 150.

2. Type (SHIFT) ESC to signal your system that the HP 150 is now ready to operate as a workstation. The screen should be blank except for a blinking cursor.

3. Verify the workstation connection by typing the following:

   PI   (RETURN)

   If the HP 150 is correctly configured and connected, the system displays the value of π: 3.1415926536   If you suspect that the HP 150 is not working properly as a workstation, refer to the manuals described at the beginning of this section.

4. Next, determine the volume specifier of the volume on which the file MONADV is stored; ask your system's principal operator for assistance or use BASIC's CAT command to locate the file. With the BASIC MASS STORAGE IS command, set the default mass storage device to be the device containing MONADV.

```
NOTE
```

The default mass storage device must be set to the volume containing MONADV. If it is not and an error occurs, only an error number is displayed; a textual error message will not be displayed.

5. Start MONADV by executing the following command:

   RUN "MONADV"

   MONADV automatically returns the HP 150 to local mode; the AdvanceLink softkeys are displayed.

6. Press the softkey labelled "Transfer to Host". AdvanceLink then displays a screen allowing you to specify the parameters of the file transfer.

7. Find the inverse video field titled "Local Source File". The cursor should be in this field (if it is not, position the cursor in the field). Type the name of the file that you want to transfer from the HP 150, and press (RETURN). If the file is not stored on the HP 150 drive to which you are currently logged, include the letter that designates the drive your file is on. For example, if you are logged on to drive A:, and the file you want to transfer is on drive B:, use the following type of name:

   B:*filename*

8. Type the name of the file in which you want to store the transferred file on your HP 150, in the field labelled "Host Destination File". Then press (RETURN). If you want to assign a protect code to the transferred file, include the protect code in the filename. For example, if you want to assign the protect code *SAFE* to a file called *FINPLAN*, use the following file name:

   FINPLAN::SAFE

NOTE

All files that are transferred between your computer system and the HP 150 must have names with **upper-case** alphabetic characters. For example, JOE is a valid file name for transfer but joe is not a valid file name.

---

9. Press the softkey labelled "File Status". The following information is displayed about the file you want to transfer:

   • Size of the file – the total number of characters (number of bytes) in the file that you want to transfer.

   • The field to the left of the "Local Source File" field shows you whether the file will be transferred in ASCII or BINARY mode. You can change the mode by pressing the ASCII/Binary softkey.

   • The "Record Size" field shows you the number of characters per line that will be used in the creation of the new, transferred file. The default record size is 80 characters for ASCII transfers and 128 characters for BINARY transfers. If you want to change the record size, use the (TAB) key to position the cursor in the "Record Size" field. Then type the record size you want to use.

   • If the file is ready to be transferred, the following message is displayed:

   Current information is valid

10. Press the softkey labelled "Start Transfer". The file transfer then takes place.

11. When the transfer is complete, the following message is displayed:

   Local to Host file transfer complete

NOTE

If the file you specified to store the transferred file already exists on your computer system, the following message appears when you press the softkey labelled "File Status":

Host file exists. It will be overwritten.

You then have the choice of replacing the existing file with the new file that is to be transferred, or supplying a different name for the new file (and keeping the existing file).

If you want to replace the existing file with the new file, press the softkey labelled "Start Transfer".

If you do not want to replace the existing file, type a new name for the new file in the "Host Destination File" field. When the following message appears, press the softkey labelled "Start Transfer":

`Current information is valid`

```
NOTE
```

There is a second chance to avoid overwriting a file on your computer system. When you press the softkey labelled "Start Transfer", you might see the message:

`File exists. Press Yes to purge file`

If you want to replace the existing file with the new file that you are about to transfer, press the Yes softkey.

If you do not want to replace the existing file, press the No softkey. Then type a different name for the new file that is about to be transferred.

COMMAND DRIVEN FILE TRANSFER

Individual files can be transferred between your system and an HP 150 using AdvanceLink's **&dscopy** command. Commands can be entered interactively or can be stored and executed as a group in a command file.

Command driven file transfer makes it easy to quickly transfer many files. It is also ideal for the regular transfer of one or more files; for example, when regularly transferring a data file from your system to HP 150 for use with a spread sheet application program.

Command driven file transfer has an additional advantage over interactive file transfer in that the file transfer can be initiated directly from HP 150's PAM (Personal Application Manager).

This section describes how to transfer a file between your system and HP 150, using AdvanceLink commands. It also describes how these commands can be stored in a command file and then integrated into HP 150's PAM.

Interactive Use of the &dscopy Command

Once you are familiar with AdvanceLink, you may find use of its interactive menus cumbersome when transferring many files. In these instances, it may be easier to use AdvanceLink's **&dscopy** command to perform the actual file transfer. To use this file transfer method:

1. Load and run AdvanceLink on the HP 150.

2. Type (SHIFT) ESC to signal your system that the HP 150 is ready to operate as a workstation.

3. Using the **MASS STORAGE IS** command, change the system's default mass storage volume to be the volume containing MONADV.

| **NOTE** |

The default mass storage device must be set to be the volume containing MONADV. If it is not and an error occurs, only an error number is displayed; a textual error message will not be displayed.

---

4. Start MONADV by executing the following command:

```
RUN "MONADV"
```

MONADV automatically returns the HP 150 to local mode; the AdvanceLink softkeys are displayed.

5. Touch the softkey labelled "Command". A new menu is displayed.

6. When the "Command" menu is displayed, press the softkey labelled "Enter Command". AdvanceLink then displays the prompt Enter a command directly: and positions the cursor in an inverse video field.

At this point, you may enter one AdvanceLink command in the field. To transfer a file, enter the **&dscopy** command in the field; the syntax of the command and an explanation of its options are provided in the following paragraphs. (If you decide against typing a command at this point, press (RETURN) with no data in the field to terminate interactive command entry.)

The syntax of the **&dscopy** command is:

$$\&dscopy \; filename \begin{Bmatrix} [\,,\text{remote}] \\ [\,,\text{local}] \end{Bmatrix} to \; filename \begin{Bmatrix} [\,,\text{local}] \\ [\,,\text{remote}] \end{Bmatrix} ; \begin{Bmatrix} [\text{ASCII}] \\ [\text{binary}] \end{Bmatrix} [\,,\text{size}]$$

The first *filename* listed is the name of the file to be copied; the second *filename* is the name of the file on the destination system in which the copied file is to be stored. With at least one of the file names, remote or local must be specified; this determines the direction of file transfer.

The *filename* can include a volume specifier and a protect code if these are necessary (that is, if the file is on a mass storage device other than the default device, and if the file has a protect code). For example, if a file called FINPLAN is stored on a device with the specifier :U2,5,0, and is protected with the code SAFE, the *filename* is as follows:

"FINPLAN:U2,5,0::SAFE"

If the file type (ASCII or binary) is not specified, AdvanceLink assumes that the file is ASCII. (ASCII file type specifies that 8-bit ASCII data is to be transferred.)

If a record size (size) is not specified, AdvanceLink assumes record size 80 for ASCII transfers and 128 for binary transfers. When transferring an ASCII file from HP 150 to your system, the record size must be greater than or equal to the number of characters in the longest line of the source file.

For example, assume that you want to transfer the file "ROLAND" from the HP 150 to your system; the copied file should be stored on your system with the name "STICH". Also assume that you are copying the file for the purpose of backing it up on your system's cartridge tape device. Because the file will not be used on your system, you elect to transfer the file as type "binary"; this insures that all characters are copied exactly as they exist on the HP 150. The following command could be used:

&dscopy ROLAND,local to STICH,remote;binary

For each file you want to transfer, enter a **&dscopy** command in response to AdvanceLink's prompt Enter a command directly:.

| **NOTE** |

All files that are transferred between your computer system and the HP 150 must have names with **upper-case** alphabetic characters. For example, JOE is a valid file name for transfer but joe is not a valid file name.

Whenever you use the **&dscopy** command (interactively or in command files, you must enclose the file names, on which the **dscopy** command operates, in quotation marks (").

7. AdvanceLink commands must be executed one-by-one when you use them interactively. To execute a command, press (RETURN) after you have typed the command. After the command has been executed, the HP 150 automatically terminates the MONADV program, and returns to workstation mode. If you want to execute another command, repeat the above procedure from the starting of the MONADV program.

If you want to execute more than one command at one time, follow the procedure given in the next sub-section, titled "Using a Command File to Transfer Files".

Installing a Command File in PAM

When regularly transferring the same file or set of files between your system and the HP 150, a command file can greatly reduce the effort required. For example, if you regularly transfer data files from your system to HP 150 for use with a spread sheet application, use of a command file allows you to transfer the files literally with "the push of a button". Similarly, if you frequently copy the same group of files from HP 150 to your system for the purpose of backing up the files, use of a command file drastically reduces the work involved.

If you want to be able to connect your HP 150 to your computer system in workstation mode by simply pressing a softkey from the HP 150's PAM, you need only install one label in the PAM. The procedure for installing this label is given later in this sub-section.

Creating a Command File

To create a command file, perform the following steps:

1. Load and run AdvanceLink on the HP 150.

2. When PAM's main menu is displayed, press the softkey labelled "Create Remote". A new menu is displayed.

3. The Create Remote screen appears. If the current default disc is not the disc on which AdvanceLink is stored, you must change the default disc. To do this, press the softkey labelled "Select Dir". Select the disc on which AdvanceLink is stored. Touch the softkey labelled "Select Dir".

```
         NOTE
```

Every installed command file uses the AdvanceLink program to execute its
commands. Therefore command files must be installed on the same disc as
AdvanceLink.

4. Press the softkey labelled "CrRemApplic". A new screen appears.

5. In the field labelled "Install or File Name", type the name you want to appear in the PAM label
when you have created and stored the command file. Then press the (RETURN) key.

6. If you want to protect the command file with a password, type the password in the next field, and
press (RETURN).

7. In the field under the title "Application Procedure", type in the sequence of commands you want
to include in the file transfer.

8. The first commands you must add to the command file that prepare your system and the HP 150
for file transfer by: connecting the HP 150 to your system as a workstation; initiating MONADV
on your system; and pausing execution of the command file until MONADV signal's AdvanceLink
that it is ready to proceed. (The easiest way to connect the HP 150 to your system as a
workstation is by executing the file **HP260** that you transferred in the earlier interactive file
transfer example.) Add the following commands to your command file to perform these
functions:

```
&execute HP260
&send 'MASS STORAGE IS volume specifier'
&send 'RUN "MONADV"'
&waitdc "^Q"
```

9. For each file you want to transfer, add one **&dscopy** command to the command file. The syntax of the command and an explanation of its options are provided in the following paragraphs.

The syntax of the **&dscopy** command is:

$$
\texttt{\&dscopy } \textit{filename} \left\{ \begin{array}{l} \texttt{[,remote]} \\ \texttt{[,local]} \end{array} \right\} \texttt{to } \textit{filename} \left\{ \begin{array}{l} \texttt{[,local]} \\ \texttt{[,remote]} \end{array} \right\} \left\{ \begin{array}{l} \texttt{[ASCII]} \\ ; \\ \texttt{[binary]} \end{array} \right\} \texttt{[,size]}
$$

The first *filename* listed is the name of the file to be copied; the second *filename* is the name of the file on the destination system in which the copied file is to be stored. With at least one of the file names, remote or local must be specified as this determines the direction of file transfer.

The *filename* can include a volume specifier and a protect code if these are necessary (that is, if the file is on a mass storage device other than the default device, and if the file has a protect code). For example, if a file called FINPLAN is stored on a device with the specifier :U2,5,0, and is protected with the code SAFE, the *filename* is as follows:

    "FINPLAN:U2,5,0::SAFE"

If the file type (ASCII or binary) is not specified, AdvanceLink assumes that the file is ASCII. (ASCII file type specifies that 8-bit ASCII data is to be transferred.)

If a record size (size) is not specified, AdvanceLink assumes record size 80 for ASCII transfers and 128 for binary transfers. When transferring an ASCII file from HP 150 to your system, the record size must be greater than or equal to the number of characters in the longest line of the source file.

For example, assume that you want to transfer the file "ROLAND" from the HP 150 to your system; the copied file should be stored on your system with the name "STICH". Also assume that you are copying the file for the purpose of backing it up on your system's cartridge tape device. Because the file will not be used on your system, you elect to transfer the file as type "binary"; this insures that all characters are copied exactly as they exist on the HP 150. The following command could be included in the command file:

    &dscopy ROLAND,local to STICH,remote;binary

```
NOTE
```

All files that are transferred between your computer system and the HP 150 must have names with **upper-case** alphabetic characters. For example, JOE is a valid file name for transfer but joe is not a valid file name.

Whenever you use the **&dscopy** command (interactively or in command files, you must enclose the file names, on which the **dscopy** command operates, in quotation marks (").

10. Once you have added the **&dscopy** commands to the command file, you are ready to supply the closing command for the command file.

If you want the command file to exit AdvanceLink and return your HP 150 to workstation mode, supply the following closing command:

&exit

If you want to run the command file from another command file, using an &execute command, supply the following closing command:

&return

11. **If you want to execute this command file directly from PAM, press the softkey labelled "Install Applic". Your command file is saved and installed in PAM on the disc you have defined as the current disc.**

If you only want to execute this command file via AdvanceLink's softkeys, or if you only want to execute this command file from another command file, press the softkey labelled "Save As File". The command file is stored in the current directory on the currently active device, unless a full pathname is supplied.

The following is a sample command file that transfers two files (SALES and COST) from the remote system to an HP 150 and one file (stats) from the HP 150 system to the remote system:

```
&execute HP260
&send 'MASS STORAGE IS ":T"'
&send 'RUN "MONADV"'
&waitdc "^Q"
&dscopy SALES,remote to sales
&dscopy COST to cost,local
&dscopy stats,local to STATS,remote
&exit
```

Installing the HP260 Workstation Label in PAM

To install the label "HP260 Workstation" in PAM, perform the following steps.

1. Load and run AdvanceLink on the HP 150.

2. When PAM's main menu is displayed, press the softkey labelled "Create Remote". A new menu is displayed.

3. The Create Remote screen appears. If the current default disc is not the disc on which AdvanceLink is stored, you must change the default disc. To do this, press the softkey labelled "Select Dir". Select the disc on which AdvanceLink is stored. Touch the softkey labelled "Select Dir".

| NOTE |

Every installed command file uses the AdvanceLink program to execute its commands. Therefore command files must be installed on the same disc as AdvanceLink.

4. Press the softkey labelled "CrRemApplic". A new screen appears.

5. In the field labeled "Install or File Name", type the following label name:

   HP260 Workstation

6. In the field under the title "Application Procedure", type the following command:

   &execute HP260

7. Press the softkey labeled "Install Applic". The command file HP260 is now installed in PAM, with the label "HP260 Workstation".

Executing a Command File

A command file can be executed in many different ways. Several of the most commonly used ways are listed below:

- If the command file has been installed in PAM, simply select the file transfer application (command file), or the label "HP260 Workstation", from PAM's main menu as you would any other application.

- A command file can be executed by another command file by including the following command:

  &execute *command_file_name*

- When AdvanceLink's main menu is displayed, a command file can be executed by first pressing the softkey labelled "Command" and then pressing the softkey labelled "Command File". AdvanceLink then displays a prompt, asking you to enter the name of the command file to be executed. Typing the name of the command file and pressing (RETURN) causes the command file to be executed.

Exiting from the MONADV Program without Starting A File Transfer

If you want to exit the MONADV program before you have pressed either of the softkeys labeled "Transfer to Host" or "Transfer from Host", press (BREAK) or press (RETURN) four times. The HP 150 will be returned to workstation mode on your computer system.

Transferring Files Through an HP 260 Network

In general the procedure for transferring files between an HP 150 to a remote HP 260, which is connected to your own HP 260 using NET260, is very similar to the procedure for transferring files without the use of a network. Use the following procedure to initiate a file transfer operation through an HP 260 Network.

1. Load and run AdvanceLink on the HP 150.

2. Type (SHIFT) ESC to tell your system that the HP 150 is ready to operate as a workstation.

3. Connect your HP 150 to the remote HP 260 using the relevant NET260 commands.

4. Change the remote HP 260's default mass storage volume to be the volume containing MONADV by executing the following (where *volume specifier* is the volume specifier of the volume on which MONADV is stored):

   MASS STORAGE IS *volume specifier*

   NOTE

   The default mass storage volume must be the volume containing MONADV. If it is not and an error occurs, only an error number is displayed; an error message will not be displayed.

   ---

5. Start MONADV by executing the following command:

   RUN "MONADV"

   MONADV automatically returns the HP 150 to local mode. AdvanceLink's softkeys are displayed.

6. Press the softkey labeled "Command". A new menu is displayed.

7. When the "Command" menu is displayed, press the softkey labeled "Enter Command". AdvanceLink then displays the prompt **Enter a command directly:** and positions the cursor in an inverse video field.

8. Enter the following three commands, separately:

   ```
   &HEX ON
   &HOSTCOPY 'RUN MONITOR.PUB.SYS;INFO="HEX"'
   &BLOCKSIZE 42
   ```

The three commands that you have just entered prepare the system to conduct a file transfer in hexadecimal format. You must use hexadecimal format to avoid losing data when you transfer files to a remote HP 260 using NET260. Now you can continue with an interactive file transfer, by pressing the softkey labeled "AdvLink Main" and continuing from Step 6. of the section titled "An Example: Transferring a File to HP 150", or from Step 6. of the section titled "Transferring Files from HP 150". Alternatively you can continue with a command-driven file transfer, using the procedure titled "Interactive Use of the &dscopy Command".

Transferring Files over an X.25 Connection

The operation of AdvanceLink with an HP 150 connected to an HP 260 over an X.25 connection is exactly the same as its operation with an HP 150 connected directly to an HP 260.

NOTE

Do not use the instructions in Appendix E of the AdvanceLink manual to conduct file transfer between an HP 150 and an HP 260, which are connected over an X.25 connection.

Hewlett-Packard supply the HP 2334A multimux for the provision of X.25 connectivity. The following paragraphs describe the configuration of your computer system needed to connect an HP 2334A, and certain details of the configuration of the HP 2334A itself.

Configuring the HP 260 for the HP 2334A

1. Run the HP 260 "CONFIG" utility and select the **Asynchronous Port Configuration** function.

2. Select the I/O port to which the HP 2334A Multimux is attached.

3. Configure this I/O port with the following values.

CONFIG field label	Value
Class	Terminal
Speed	9600
Type	2392
SwConf	MoSwEU

Configuring the HP 2334A

You must create two "User-Defined Profiles". Refer to the HP 2334A Reference Manual for information on creating a User-Defined Profile and assigning profiles to ports.

Profile 62

User-Defined Profile 62 must have the following parameter values.

1:0	0:13
2:0	1:0
3:127	2:0
4:1	3:0
5:1	4:0
6:0	5:0
7:0	6:0
8:0	7:128
9:0	8:0
10:0	9:0
11:14	10:0
12:0	11:0
13:0	12:0
14:0	13:0
15:0	14:4
16:8	15:0
17:24	16:0
18:0	17:0
	18:0
	19:128
	20:0
	21:0
	22:64
	23:1
	24:122
	25:0

Assign profile 62 to the HP 2334A asynchronous port connected to the HP 260.

Profile 122

Profile 122 must have the following parameter values.

1:1	0:13
2:0	1:0
3:0	2:0
4:1	3:0
5:1	4:0
6:5	5:0
7:1	6:0
8:0	7:128
9:0	8:0
10:0	9:0
11:14	10:0
12:0	11:0
13:0	12:0
14:0	13:3
15:0	14:0
16:8	15:0
17:24	16:0
18:0	17:0
	18:63
	19:255
	20:0
	21:0
	22:64
	23:1
	24:0
	25:0

Dealing with Line Noise

If your computer system and your HP 150 are connected via a MODEM, you might experience difficulty with line noise. Such noise could affect your file transfer operations. If you do have trouble with noise, there are two simple ways to deal with it. Firstly, you can reduce the size of the blocks of data you transfer by using the AdvanceLink &blocksize command. Secondly, you can increase the length of time the receiving computer waits for each block of data to arrive by using the AdvanceLink &timeout command.

These two responses: reducing the block size, and increasing the time out period will decrease the effects of line noise on your file transfer operations. Refer to your AdvanceLink manual for the details of using the &blocksize and the &timeout commands.

INTRODUCTION

MONREF is a utility that enables file transfer between your system and an HP Portable PLUS. MONREF interacts with the Reflection 1 file transfer software, ensuring that all data is transferred without error and that data is formatted properly for storage on the destination system. The HP Portable PLUS must be running the following software:

- Reflection 1, revision 1.0 or more recent

Restrictions

MONREF provides for error-free transfer of files only when the following conditions are met:

- Only HP 250 or HP 260 files of type DATA can be transferred to HP Portable PLUS.

- Files of type DATA must contain only string data; no other data types (such as integers or reals) can be transferred from your system to the HP Portable PLUS. The maximum string length is 2000 bytes.

FILE TRANSFER DIRECTION CONVENTIONS

The following paragraphs explain the conventions used by the MONREF program and the HP Portable PLUS in the handling of file transfer operations.

The MONREF program operates on the HP 260, and treats the HP 260 as its reference point. Therefore, after you run MONREF, and the screen prompts you to select the SEND or the RECEIVE softkey, you must remember the following:

- SEND means "transfer the file **from** the HP 260 to the HP Portable PLUS".

- RECEIVE means "transfer the file to the HP 260 from the HP Portable PLUS".

The command that initiates the actual file transfer is input to the HP Portable PLUS. Therefore this command treats the HP Portable PLUS as reference point. When you type in the command, the "xr" form indicates that the file will be transferred **to** the HP Portable PLUS from the HP 260. The "xs" form indicates that the file will be transferred **from** the HP Portable PLUS to the HP 260.

TRANSFERRING FILES TO HP PORTABLE PLUS

Reflection 1 and MONREF support interactive file transfer from your computer system to the HP Portable PLUS. An example of such a transfer is given next.

An Example of Transferring a File to HP Portable PLUS

The following example illustrates how to transfer a file from your computer system to an HP Portable PLUS. By extension, this procedure can be used to transfer any file from your system to an HP Portable PLUS; you need only change the name of the file.

```
NOTE
```

Using the following procedure, you will transfer the file "LOGPOR" from your computer system to an HP Portable PLUS. LOGPOR is automatically installed on your computer system when MONREF is installed. You must transfer LOGPOR to your HP Portable PLUS so that you can quickly and easily connect your HP Portable PLUS as a system workstation

1. Load and run Reflection 1 on the HP Portable PLUS.

2. Type (SHIFT) ESC to signal your system that the HP Portable PLUS is now ready to operate as a workstation. The screen should be blank except for a blinking cursor.

3. Verify the workstation connection by typing the following:

    PI (RETURN)

If the HP Portable PLUS is correctly configured and connected, the system displays the value of π: 3.1415926536. If you suspect that the HP Portable PLUS is not working properly as a workstation, refer to the manuals described at the beginning of this section.

4. Next, determine the volume specifier of the mass storage device on which the files MONREF and LOGPOR are stored; ask your system's principal operator for assistance or use BASIC's **CAT** command to locate the files. With the BASIC **MASS STORAGE IS** command, set the default mass storage device to be the device containing MONREF.

```
NOTE
```

The default mass storage device must be set to the device containing MONREF. If it is not, and an error occurs, only an error number is displayed; a textual error message will not be displayed.

5. Start MONREF by executing the following command:

RUN "MONREF"

6. Press the softkey labelled "SEND" to inform the system that you want to transfer the file from the HP 260 to the HP Portable PLUS.

7. Type the name of the file that you want to transfer to the HP Portable PLUS next to the prompt:

HP260 Filename:

Use the following syntax:

filename::{*protect code*}

In this example, type the following:

LOGPOR

Then press (RETURN).

If you press (RETURN) without typing the name of a file, the MONREF program is terminated.

```
┌──────────────┐
│    NOTE      │
└──────────────┘
```

If the file you specified does not exist, the warning message "No such file found" is displayed, and the system waits for you to specify another file.

8. Select the transfer mode to be used. Type "1" if you want to use 8-bit ASCII mode; type "0" if you want to use BINARY mode. Then press (RETURN). In this example, type "1", because the file "LOGPOR" should be transferred in 8-bit ASCII mode.

9. The screen then displays the prompt:

Selection correct? Y/N

Type "Y" to proceed with the transfer; type "N" to abort the transfer. Then press (RETURN). If you typed "Y", a new softkey menu is displayed, with the message:

Start File Transfer on your Workstation

10. Press the "System" key to display the Reflection 1 softkeys. Then press the ⌐ f5 ⌐ softkey.

11. Input a command of the following type:

xr *drive spec.*:PORTFILE {delete}

The *drive spec.* parameter is of the form X, where X is the letter identifying the drive on which the transferred file is to be stored.

The file name "PORTFILE" is the name that you want to give to the transferred file, on the HP Portable PLUS. In this example, you could give the name HP260 to the file LOGPOR, that you transfer from the HP 260 to the HP Portable PLUS. This name makes it clear that this file is the LOG-ON file that can be executed to establish HP 260 - HP Portable PLUS communication.

The **delete** option tells the system to purge a file on the HP Portable PLUS that has the same name as the file that is to be transferred. In this example, if the file HP260 already existed on the HP Portable PLUS, it would be purged, and replaced with the new file from your computer system.

If you omit the **delete** option, the transfer will be aborted if there is already a file with the same name as that to be transferred. In addition, the "MONREF" program is also aborted, and you must start the transfer procedure again (from the running of the "MONREF" program).

12. When the file transfer is complete, the Portable PLUS shows the command line again. However it is not ready to begin another file transfer. Press the "System" key or the (RETURN) key. The Portable PLUS is returned to workstation mode. If you want to transfer another file, repeat the above procedure from the running of the "MONREF" program.

Installing the LOGPOR File in PAM

In order to be able to quickly and easily connect your HP Portable Plus as a workstation on your computer system, you must install the LOGPOR file in the HP Portable Plus Personal Application Manager (PAM). You have already transferred the LOGPOR file from your computer system to your HP Vectra. Use the following commands to install the label HP260 WORKSTAT in PAM, so that by selecting this label from PAM you can immediately connect your HP Vectra in workstation mode to your computer system.

```
EDLIN PAM.MNU
1 i
HP260 WORKSTAT
REFLECT1 REFLECT1.CNF,HP260
(CONTROL) C
E (RETURN)
```

Refer to Chapter 11 of the manual titled "Using the Portable PLUS", (which you received when your HP Portable Plus was delivered) for the details of how to install a file in PAM.

```
| NOTE |
```

The fourth line in the above procedure contains the file name HP260. If you gave a different name to the LOGPOR file when you transferred it to the HP Portable Plus, replace the name HP260, in the above command line, with the name you selected. For example, if you gave the name CONNECT to the LOGPOR file, the fourth line should take the following form:

```
REFLECT1 REFLECT1.CNF,CONNECT
```

TRANSFERRING FILES FROM HP PORTABLE PLUS

Reflection 1 and MONREF support interactive file transfer from the HP Portable PLUS to your computer system.

Mass Storage Requirements for Transferred Files

Before you begin the transfer procedure described in the next sub-section you need to know the size of each of the files that you want to transfer from the HP Portable Plus to your computer system. Use the File Manager on your HP Portable Plus to determine the size of each file (the values you need are the DOS File Byte Counts for each file).

Your computer system requires a different amount of mass storage space to store each transferred file, depending on whether the file is transferred as an ASCII file or as a binary file.

For binary files use the following expression to calculate the amount of space required to store a file on your computer system.

```
Record Count = DOS File Byte Count/(Record Size - 4)
```

The Record Count is the amount of space required for the storage of the file on your computer system. You are prompted to supply this value during the file transfer process (see the sub-section titled "Transfer Procedure").

The Record Size is the size of each record of the file when it is stored on your computer system. You select this record size during the transfer process. The default record size is 256 bytes.

For ASCII files use the following expression to calculate the amount of space required to store a file on your computer system.

```
Record Count = (DOS File Byte Count + (line count*4))/Record Size
```

The line count is the number of lines in the file on your HP Portable Plus, and the other variables have the definitions given above.

Example of Record Count Calculation

Suppose that you have a file with a DOS File Byte Count of 3500 on your HP Portable Plus. You decide to transfer this file to your computer system using the binary file type and the default record size of 256 bytes. The minimum Record Count needed to store this file on your computer system is found in the following manner:

```
Record Count = 3500/ (256 - 4)  = 13.88
```

Therefore, you must reserve a Record Count of at least 14 during the file transfer procedure.

NOTE

This example illustrates the general points that Record Counts must be integer values, and that the calculated Record Count is the minimum value required. You can supply a larger value if you wish.

Transfer Procedure

The following paragraphs give the general procedure for the transfer of files from the HP Portable PLUS to your computer system.

1. Load and run Reflection 1 on the HP Portable PLUS.

2. Type `SHIFT` ESC to signal your system that the HP Portable PLUS is now ready to operate as a workstation. The screen should be blank except for a blinking cursor.

3. Verify the workstation connection by typing the following:
   PI `RETURN`

   If the HP Portable PLUS is correctly configured and connected, the system displays the value of π: 3.1415926536. If you suspect that the HP Portable PLUS is not working properly as a workstation, refer to the manuals described at the beginning of this section.

4. Next, determine the volume specifier of the mass storage device on which the file MONREF is stored; ask your system's principal operator for assistance or use BASIC's **CAT** command to locate the file. With the BASIC **MASS STORAGE IS** command, set the default mass storage device to be the device containing MONREF.

NOTE

The default mass storage device must be set to the device containing MONREF. If it is not, and an error occurs, only an error number is displayed; a textual error message will not be displayed.

5. Start MONREF by executing the following command:

   RUN "MONREF"

6. Press the softkey labelled "RECEIVE" to inform the system that you want to transfer the file to the HP 260 from the HP Portable PLUS.

7. Type the name that you want to give to the transferred file, on the HP 260 next to the prompt:

   HP260 Filename:

   Use the following syntax:

filename::{*protect code*}

The name "filename" is the name that you want to give to the transferred file, on your computer system. If you press (RETURN) without typing a file name, the MONREF program is terminated.

<div style="border:1px solid">NOTE</div>

If a file with the same name as the file you specified already exists on your computer system, the following message appears:

Local file exists. Press RETURN to clear.

When you press (RETURN), the command line appears again, and you can type a new file name over the old one.

8. Now you must specify the amount of space to be reserved on the HP 260 for the storage of the file that is about to be transferred. You can select both the record size and the number of records present in the transferred file. The default record size is 256 bytes. The default number of records (Record Count) is 100 records.

9. Select the transfer mode to be used. Type "1" if you want to use 8-bit ASCII mode; type "0" if you want to use BINARY mode.

10. The screen then displays the prompt:

Selection correct? Y/N

Type "Y" to proceed with the transfer; type "N" to abort the transfer. Press the (RETURN) key. If you typed "Y", a new softkey menu is displayed, with the message:

Start File Transfer on your Workstation

11. Press the "System" key to display the Reference 1 softkeys. Then press the (f5) softkey.

12. Input a command of the following type:

xs *drive spec.*:filename

The *drive spec.* parameter is of the form X, where X is the letter identifying the drive on which the file to be transferred is stored.

The name "filename" is the name of the file that you want to transfer from the HP Portable PLUS.

```
         NOTE
```

If the file you specified does not exist on the HP Portable PLUS, the following message appears:

`Local file doesnt exist. Press RETURN to clear.`

When you press (RETURN), the following message appears:

`754. Remote device transmits a CAN character`

This message tells you that the transfer has been aborted by the HP Portable PLUS. To continue with your transfer operations, press the "System" key, and repeat the above procedure from the running of the "MONREF" program.

13. When the file transfer is complete, the Portable PLUS shows the command line again. However it is not ready to begin another file transfer. Press the "System" key or the (RETURN) key. The Portable PLUS is returned to workstation mode. If you want to transfer another file, repeat the above procedure from the running of the "MONREF" program.

EXTENDED FILE COPY CAPABILITY (XCOPY)

The XCOPY utility is a binary program which provides the XCOPY statement, an enhanced version of the COPY statement. XCOPY copies any file types except SYST and DROM. To load the XCOPY binary, execute:

    LOAD BIN "XCOPY [volume spec]"

The XCOPY syntax is:

    XCOPY source file spec,file type,protect code TO dest file spec[;REPLACE]

The *source file spec* and *destination file spec* are string expressions containing the file name and, optionally, the volume spec. The *file type* is a string expression containing the four-digit file type (for example DSET, ROOT or BKUP). The *protect code* is a string expression containing the protect code or the two-digit set number.

```
NOTE
```

The name of the destination file must be the same as the name of the source file when copying a data base; XCOPY cannot be used to change the name of a data base.

For example:

    XCOPY "REF1:Q", "DSET", "01" TO "REF1:T"

As with the COPY statement, XCOPY creates the specified file on the specified volume and copies the file. If the destination file already exists, add ;REPLACE to copy the source file to the existing file. Error 851 occurs if the files are not the same size and type when ;REPLACE is used.

File Copy (XCOPY)

When copying data sets, the data base for the source and destination sets must not be open. Copying data sets without the corresponding root file and related data sets can cause data loss when the data sets are accessed.

```
┌──────────────┐
│    NOTE      │
└──────────────┘
```

This utility is also available through the TOOLS DROM.

THE TAPFIX UTILITY

The TAPFIX utility is provided for use with your cartridge tapes. Use TAPFIX when you have a problem with a cartridge tape; TAPFIX identifies the status of, and in some cases fixes problems with 150 ft. and 600 ft. cartridge tapes.

You will want to run TAPFIX if you receive an Error 160 or 161, and do not understand why you received the error.

Normal Operation of Discs with Tapes

In normal operation, an area of the disc is set aside for read/write activities between the tape and disc; this area is called a buffer. When you load a tape, a buffer is created, and the tape and buffer establish a relationship; they are now said to correspond. When you press the UNLOAD button, any incomplete tasks between the tape and buffer are taken care of, and the tape or buffer correspondence is terminated normally.

If a tape is physically removed from a drive without the UNLOAD process (e.g., after a power failure), then the tape has been removed prematurely. The buffer still holds information for the removed tape; the buffer is "pending". The tape is also pending, as it requires information from the buffer.

Reinserting the tape and allowing it to fully load re-establishes the relationship between the tape and buffer. You must, however, insert the tape into the same drive from which it was removed to allow the correct correspondence to resume.

If you do not re-insert a prematurely removed tape back into the same drive, you will generate an error and data will probably be lost. TAPFIX diagnoses this and other errors.

Operation of Stand-alone Tape Drives

Stand-alone tape drives, like the HP 9144A, have no relationship with a disc buffer during their operation. However you might still have an Error 160 when operating a stand-alone tape drive, if you insert a cartridge tape which was prematurely removed from another tape drive.

In such a case, the cartridge tape is in the "pending" state, and you cannot access its data. If you encounter this problem, use TAPFIX to solve it. Refer to the sub-section titled "Using TAPFIX with Stand-alone Tape Drives".

USING TAPFIX

To use TAPFIX, execute the following:

```
RUN "TAPFIX [volume spec]"
```

If there are no problems with your tape or buffer, "Ready" will appear in the comments line, and the screen will look like the following.

```
┌─────────────────────────────────────────────────────────────────────┐
│                 CARTRIDGE TAPE MAINTENANCE UTILITY                    │
│                                                                       │
│   Device      Tape Label     Buffer Label    Comments                 │
│                                                               ─────────│
│   :K2,5,1                                     Ready                    │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│───────────────────────────────────────────────────────────────────── │
│  Please select a key.                                                 │
│                                                                       │
│                                                                       │
│──────┬──────┬──────┬──────┬──┬──────┬──────┬──────┬───────────────────│
│      │      │      │      │  │      │      │      │         EXIT       │
│      │      │      │      │  │      │      │      │         UTILITY    │
└──────┴──────┴──────┴──────┴──┴──────┴──────┴──────┴───────────────────┘
```

Device refers to the unit address of a tape drive; each address is unique (e.g., :K2,5,1 :K2,4,1 :K2,3,1). The Buffer Label is the volume label, and the Tape Label shows the tape label the last time the tape was unloaded. When "Ready" is indicated, your buffer and tape correspond, even though the tape label may have been changed. Comments are the messages that are displayed to inform you about the status of tapes and buffers.

If a tape and buffer do not correspond, use TAPFIX to diagnose and deal with the problem. TAPFIX will tell you the status of your tapes. For example, your tape status could be:

- Tape ready.
- Tape uninitialized.
- Tape not ready.
- Tape removed from another drive.

Also, TAPFIX will tell you the status of each tape buffer located on disc. A buffer status could be:

- Buffer ready.
- Buffer waiting for tape labeled *"Label"*.
- Disc not ready.
- Disc uninitialized.

```
    NOTE
```

If you receive the message "Disc not ready.", there is probably a hardware problem.

No Cartridge Tape Drives On This System

This comment tells you that you either do not have a tape drive, or it is not recognized by the system.

If you have a tape drive in this case, check the cable connecting it to the HP 260. If the cabling is correct, call your support person and explain the situation.

TAPES DROM Not Loaded

This comment tells you that your system cannot manage tape operations because the TAPES DROM is not loaded. If this message appears, run the CONFIG program, as explained in Section 3 of this manual, and change the status of the TAPES DROM to auto-load. Then shut-down your system in the normal way, and start it up again. Your system will then be ready to manage tape drive operations.

Tape Uninitialized

This comment tells you that the tape in the drive has not been prepared for use.

```
┌─────────────────────────────────────────────────────────────────────────┐
│                  CARTRIDGE TAPE MAINTENANCE UTILITY                       │
│                                                                           │
│  Device      Tape Label     Buffer Label     Comments                     │
│ ─────────────────────────────────────────────────────────────────────── │
│  :K2,5,1                     Label            Tape uninitialized.         │
│                                               Buffer ready.               │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│ ───────────────────────────────────────────────────────────────────────│
│ Please select a key.                                                      │
│                                                                           │
│                                                                           │
│ ────┬──────┬──────┬──────┬──┬──────┬──────┬──────┬────────── │
│     │      │      │      │  │      │      │      │    EXIT    │
│     │      │      │      │  │      │      │      │  UTILITY   │
└─────────────────────────────────────────────────────────────────────────┘
```

Get out of **TAPFIX**, and run **INIT**, following the directions for tape initialization in Section 2.

Tape Not Ready/Buffer Ready

This comment could be caused by one of two situations. The drive could be empty or contain a tape that has not yet been fully loaded.

```
                    CARTRIDGE TAPE MAINTENANCE UTILITY

    Device     Tape Label     Buffer Label     Comments

    :K2,5,1                    Label            Tape not ready.
                                                Buffer ready.



    _____
    Please select a key.


    _____
    |        |        |        |       ||        |        |        | EXIT
    |        |        |        |       ||        |        |        | UTILITY
```

If there is no tape in the drive, insert any of your tapes at this time; TAPFIX will recognize that the status has changed, and will change the screen message. When the tape is fully loaded, the comment column will indicate that the tape is ready.

Tape Not Ready/Buffer Waiting For Tape 'LABEL'

This message indicates that a tape was removed prematurely from the drive; the tape/buffer correspondence was not ended normally. An error 161 (disc buffer pending) may have occurred in your normal operation.

```
                  CARTRIDGE TAPE MAINTENANCE UTILITY

   Device    Tape Label     Buffer Label    Comments

   :K2,5,1                   Label           Tape not ready.
                                             Buffer waiting for tape "Label"










  _____
  Please select a key.


  CLR BUFFR|       |       |       |  ||      |       |       |       | EXIT
   :K2,5,1 |       |       |       |  ||      |       |       |       | UTILITY
```

Insert the tape that was last used, and allow it to load. Now, you will get a "Ready" message. If you do not wish to use this tape, unload it; tape/buffer correspondence will end normally.

If you do not have the tape that was used last in the drive, TAPFIX can solve the problem. Press the CLR BUFFER softkey; the buffer is cleared and reset as if a tape was being properly unloaded.

```
┌─────────────────┐
│      NOTE       │
└─────────────────┘
```

If you clear a buffer created by a tape that was not properly unloaded, you cannot use the tape contents. The information on the tape is no longer valid; you must initialize the tape the next time you use it. ALL INFORMATION WILL BE LOST.

Tape Removed From Another Drive

If a tape has been removed prematurely, and you try to use it in another drive, you will generate this comment. Determine where the tape came from, and re-insert it in that drive, loading and unloading it normally. If, for some reason you cannot do this , press the CLR TAPE softkey. Then, run "INIT" and use the purge all option. This destroys all information on the tape.

```
┌──────────────────────────────────────────────────────────────────────────┐
│                   CARTRIDGE TAPE MAINTENANCE UTILITY                       │
│                                                                            │
│   Device      Tape Label     Buffer Label    Comments                      │
│                                                                            │
│   :K2,5,1    Label1         Label2          Tape removed from another drive.│
│              .                              Buffer ready.                   │
│                                                                            │
│                                                                            │
│                                                                            │
│                                                                            │
│                                                                            │
│                                                                            │
│                                                                            │
│                                                                            │
├────────────────────────────────────────────────────────────────────────── │
│ Please select a key.                                                       │
│                                                                            │
│                                                                            │
├──────┬──────┬──────┬──────┬─┬──────┬──────┬──────┬──────────│
│CLR TAPE│      │      │      │ │      │      │      │ EXIT     │
│ :K2,5,1│      │      │      │ │      │      │      │ UTILITY  │
└────────┴──────┴──────┴──────┴─┴──────┴──────┴──────┴──────────┘
```

```
┌─────────────────┐
│     NOTE        │
└─────────────────┘
```

A tape abnormally removed from another drive will appear normal, but you must assume that all files are corrupt.

```
┌─────────────────┐
│     NOTE        │
└─────────────────┘
```

If you have only one drive or are certain that a tape has never been used in another drive, and the comment "Tape Removed From Another Drive" occurs, you may have a system error. Clear both the tape and buffer; you cannot recover the data on this tape.

DIAGNOSING ERRORS

Error During Normal System Operation.   Tape Data Is Recoverable.

In this situation, your buffer and tape correspond, but a power failure or system error occurred during an operation, causing an Error 160 or 161.

```
┌─────────────────────────────────────────────────────────────────────────┐
│              CARTRIDGE TAPE MAINTENANCE UTILITY                           │
│                                                                           │
│   Device    Tape Label    Buffer Label    Comments                        │
│  ─────────────────────────────────────────────────────────────────────   │
│   :K2,5,1   Label1        Label2          Error during normal system operation. │
│                                           Tape data is recoverable.       │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│  ─────────────────────────────────────────────────────────────────────   │
│  Please select a key.                                                     │
│                                                                           │
│                                                                           │
│ ┌────────┬─────┬─────┬─────┬─┬─────┬─────┬─────┬──────┐                    │
│ │FIX TAPE│     │     │     │ │     │     │     │ EXIT │                    │
│ │:K2,5,1 │     │     │     │ │     │     │     │UTILITY│                   │
└─────────────────────────────────────────────────────────────────────────┘
```

You can remedy this situation by pressing the FIX TAPE softkey that corresponds to the drive with a problem. FIX TAPE is a normal operation that will not affect the contents of a tape.

```
┌──────────┐
│   NOTE   │
└──────────┘
```

The comment "Apparent system malfunction. TAPE DATA IS CORRUPT." indicates that information on this tape is corrupt, even though it may appear normal. Reset the tape by pressing the CLR TAPE softkey. Then, run INIT as discussed in Section 2, and use the PURGE ALL option to purge all files from the tape.

USING TAPFIX WITH STAND-ALONE TAPE DRIVES

To use TAPFIX, execute the following:

    RUN "TAPFIX [volume spec]"

If there are no problems with your tape, "Ready" will appear in the comments line, and the screen will look like the following.

```
                    CARTRIDGE TAPE MAINTENANCE UTILITY

    Device      Tape Label      Buffer Label    Comments
    _____

    :K2,5,1     Label           <no disc>       Ready


















    _____
    Please select a key.


    _____
    |        |        |        |        ||        |        |        | EXIT   |
    |        |        |        |        ||        |        |        | UTILITY|
```

Stand-alone tape drives have no relationships with disc buffers. Therefore, when you run TAPFIX on a system with only stand-alone tape drives, the "Buffer Label" field displays <no disc>. If the comment "Ready" appears in the "Comments" field, there is no problem with your tape, and you should be able to continue operation.

The following paragraphs discuss situations where there is a tape problem. The problems diagnosed by TAPFIX are:

- No Cartridge Tape Drives on this system

- TAPES DROM not loaded

- Tape uninitialized

- Tape not ready

- Tape removed from another drive

No Cartridge Tape Drives On This System

This comment tells you that you either do not have a tape drive, or it is not recognized by the system.

If you have a tape drive in this case, check the cable connecting it to the HP 260. If the cabling is correct, call your support person and explain the situation.

TAPES DROM Not Loaded

This comment tells you that your system cannot manage tape operations because the TAPES DROM is not loaded. If this message appears, run the CONFIG program, as explained in Section 3 of this manual, and change the status of the TAPES DROM to auto-load. Then shut-down your system in the normal way, and start it up again. Your system will then be ready to manage tape drive operations.

Tape Uninitialized

This comment tells you that the tape in the drive has not been prepared for use.

```
┌──────────────────────────────────────────────────────────────────────┐
│                  CARTRIDGE TAPE MAINTENANCE UTILITY                    │
│                                                                        │
│  Device      Tape Label      Buffer Label     Comments                 │
│                                                                        │
│  :K2,5,1                     <no disc>        Tape uninitialized.      │
│                                                                        │
│                                                                        │
│                                                                        │
│                                                                        │
│                                                                        │
│                                                                        │
│                                                                        │
│                                                                        │
├──────────────────────────────────────────────────────────────────────┤
│ Please select a key.                                                   │
│                                                                        │
│                                                                        │
├────────┬────────┬────────┬────────┬─┬────────┬────────┬────────┬───────┤
│        │        │        │        ││ │        │        │        │ EXIT  │
│        │        │        │        ││ │        │        │        │UTILITY│
└────────┴────────┴────────┴────────┴─┴────────┴────────┴────────┴───────┘
```

Get out of **TAPFIX**, and run **INIT**, following the directions for tape initialization in Section 2.

Tape Not Ready

This comment could be caused by one of two situations. The drive could be empty or contain a tape that has not yet been fully loaded.

```
┌─────────────────────────────────────────────────────────────────────┐
│                  CARTRIDGE TAPE MAINTENANCE UTILITY                   │
│                                                                       │
│   Device      Tape Label      Buffer Label     Comments               │
│                                                                       │
│   :K2,5,1                      <no disc>        Tape not ready.        │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│  ─────────────────────────────────────────────────────────────────  │
│  Please select a key.                                                 │
│                                                                       │
│  ┌────┬────┬────┬────┬──┬────┬────┬────┬────────┐                    │
│  │    │    │    │    ││  │    │    │    │  EXIT  │                    │
│  │    │    │    │    ││  │    │    │    │ UTILITY│                    │
│  └────┴────┴────┴────┴──┴────┴────┴────┴────────┘                    │
└─────────────────────────────────────────────────────────────────────┘
```

If there is no tape in the drive, insert any of your tapes at this time; TAPFIX will recognize that the status has changed, and will change the screen message. When the tape is fully loaded, the comment column will indicate that the tape is ready.

Tape Removed From Another Drive

If a tape has been removed prematurely, and you try to use it in another drive, you will generate this comment. Determine where the tape came from, and re-insert it in that drive, loading and unloading it normally. If, for some reason you cannot do this , press the CLR TAPE softkey. Then, run "INIT" and use the purge all option. This destroys all information on the tape.

```
                      CARTRIDGE TAPE MAINTENANCE UTILITY

    Device       Tape Label      Buffer Label     Comments_____

    :K2,5,1      Label           <no disc>        Tape removed from another drive.












  _____

  Please select a key.


  _____ _____ _____ _____ __ _____ _____ _____ _____ _____
 |CLR TAPE|     |       |      ||      |       |       |       | EXIT   |
 |:K2,5,1 |     |       |      ||      |       |       |       | UTILITY|
```

```
 ┌──────────────┐
 │     NOTE     │
 └──────────────┘
```

A tape abnormally removed from another drive will appear normal, but you
must assume that all files are corrupt.

NOTE

If you have only one drive or are certain that a tape has never been used in another drive, and the comment "Tape Removed From Another Drive" occurs, you may have a system error. Clear both the tape and buffer; you cannot recover the data on this tape.

INTRODUCTION

The HP 260 EDITOR program is used to create and maintain data files containing lines of text. The primary purpose of the EDITOR is to build and modify data base definition files (schemas). EDITOR may also be used to edit files containing only string data, such as files produced by the SAVE statement.

The EDITOR program does not make changes to existing data files directly. Instead, a copy of the file is maintained in memory and in two scratch files. This copy of the file is known as the work file. The work file may be copied to a new or existing data file at any time.

EDITOR organizes the work file into pages (blocks). A page can contain from 5 through 200 lines, depending on the available user memory size. Pages are automatically loaded into memory and copied to the scratch files as needed. Lines within the page in memory may be accessed quickly, while all other lines must be located on the scratch files and loaded into memory. Thus, editing time may be significantly reduced by making changes to lines in ascending line-number order.

HP 260 Editor

To run the EDITOR program, execute the command:

    RUN "EDITOR [volume spec]"

The *volume spec* parameter must appear when the EDITOR program is not on the default mass storage
device. Following the RUN command, the EDITOR displays:

```
                              TEXT EDITOR
```
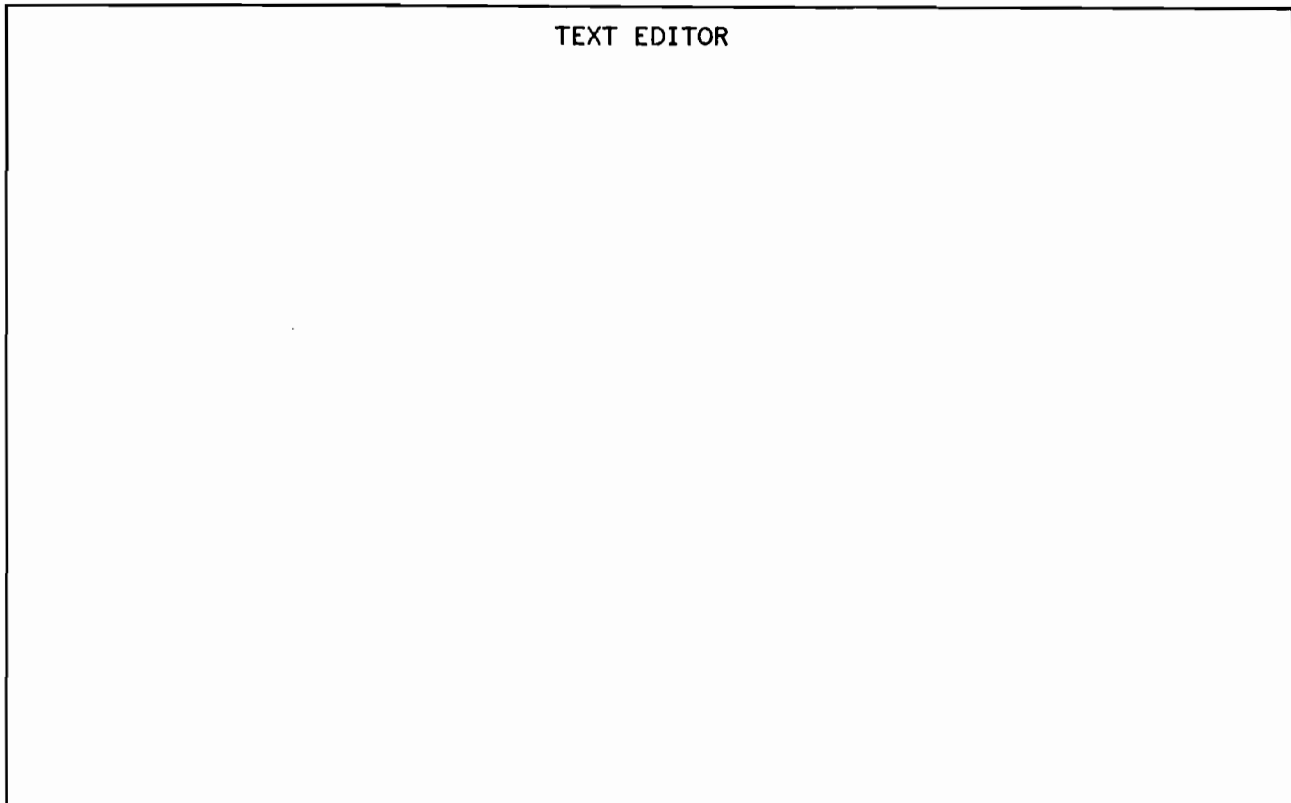
The slash (/) following the heading indicates the EDITOR is ready to execute commands. Commands may
be entered in upper or lower case. Several commands may be entered on one line by separating commands
with semicolons (;). The total command line cannot exceed 160 characters (two display lines). EDITOR
commands are described later in this section.

During normal operations, two scratch files EDxA and EDxB, are used to store portions of the work

file. A third file, EDxH is created if a HOLD command is executed.* These files are created on the default mass storage device, which must remain on-line while the program is running. Each file requires a minimum of 80 sectors, and might require more disc space when editing large data files.

All data in the work file is stored and retrieved as lines. Each line is assigned a unique line number from .001 through 9999.999.

Lines are normally 80 characters or less, but may be as long as 160 characters** (two display lines). When the line number is displayed along with the line, the number is displayed in half bright to distinguish it from the line.

EDITOR commands operate on a single line or on groups of lines. Individual lines are specified by a single line number. In addition, the first and last lines of the work file can be specified by using the words FIRST or LAST instead of a line number. A group (range) of lines is specified by two line numbers separated by a slash (/). All lines in a work file are specified by the word ALL. Some examples of line and range specifiers are:

1	Specifies line one.
FIRST	Specifies the first line in the workfile.
1/10.5	Specifies all lines from 1 through 10.5.
FIRST/LAST	Specifies all lines in the work file.
ALL	Specifies all lines in the work file.

---

*In each file name, the letter x will be replaced by a letter from A through K.
**The Schema Processor reads and prints only the first 80 characters of a line, and processes only the first 72 characters of a line, regardless of the actual line length.

ERROR MESSAGES

Two different kinds of error messages are reported by EDITOR. Normal errors are reported when the given command cannot be performed (for example SYNTAX ERROR). Warning messages are displayed when special conditions are encountered (for example LINE TRUNCATED), but do not interfere with the execution of the command. Error messages are generated using a special error message file, EDERRS. If the disc containing the EDERRS file is not on-line, error messages will have the form:

    ---ERROR--- *error number*

A list of error numbers and their meaning is in the appendix titled "Error Messages".

SPECIAL CONTROL KEYS

(RETURN)   is used to execute all EDITOR commands.

(CLEAR)   clears the line just typed and positions the cursor at the left margin; on the HP 45262D workstation, you must press (SHIFT) with the key labeled "Clear Line" to obtain this function.

(HALT)   terminates an edit operation. Press (HALT) to terminate the ADD, CHANGE, DELETE, FIND, HOLD, LIST and MODIFY commands.

(☆)   is used the examine the value of certain EDITOR parameters. The total number of lines in the work file are displayed by typing LINES and pressing (☆). Type LENGTH and press (☆) to display the maximum number of characters per line. Type LP and press (☆) to display the number of lines per page output on an offline listing.

EDITOR COMMANDS

The following commands are used with EDITOR to edit the work file.

ADD	Add lines to the work file.
CHANGE	Changes character strings in the work file.
DELETE	Deletes lines from the work file.
END	Terminates the EDITOR program.
FIND	Finds specified character strings or current line position.
GATHER	Renumbers a work file.
HOLD	Saves lines from the work file into the hold file.
KEEP	Saves the work file as a data file.
LIST	Lists lines from the work file to the display or printer.
MODIFY	Modifies lines in the work file.
SET	Sets EDITOR parameters.
TEXT	Copies a data file into the work file.
WHILE	Repeats a group of EDITOR commands.

ADD COMMAND

$$\left\{ \begin{array}{c} \text{A} \\ \text{ADD} \end{array} \right\} [\ \text{Q}]\ [line\ number]\ [\ \text{,HOLD}]$$

The ADD command adds lines of text into the work file. Lines may be entered from the keyboard or from the HOLD file. Entering two slashes (//) or pressing (HALT) terminates the ADD command.

If no options are specified, the line number of the line to be added is displayed (in half bright), and the cursor is positioned after the number in preparation for input from the keyboard. Lines are added directly after any existing lines in the work file. Subsequent lines are numbered in increments of 1. If the Q (quiet) parameter is specified, no line numbers are displayed. When the quiet option is used, a maximum of 160 characters can be entered on the line.

If a line number is specified, lines are added starting at the specified line. Subsequent lines are added in increments of 1, .1, .01, .001, depending on the line number specified and the next higher line in the work file. The specified line number must be numeric, and not reference an existing line number. The line number parameter allows lines to be added anywhere in the work file. If a line is added using a line number, a maximum of 155 characters can be entered for the line.

Specifying HOLD allows lines of text to be added from the hold file into a work file. Lines from the hold file are numbered as if they were entered from the keyboard.

Two examples of this command are shown below:

    ADD 5.1

This first example adds line 5.1 into the work file. Subsequent lines are numbered in increments of .1, .01, or .001, depending on the number of the next line in the work file.

    ADD,HOLD

This second example adds text from the hold file. Lines are inserted at the end of the work file. All lines in the hold file are added unless either (HALT) is pressed or an error occurs.

CHANGE COMMAND

$$\left\{ \begin{array}{c} \text{CHANGE} \\ \text{C} \end{array} \right\} \textit{string}_1 \text{ TO } \textit{string}_2 [\text{ IN } \textit{range list}]$$

The CHANGE command replaces character strings within specified lines. Both string₁ and string₂ may be any ASCII string, and must be delimited by any non-alphanumeric character* not appearing in the string.

If no options are specified, all occurrences of string₁ are replaced with string₂ in the current line. The line is then displayed if any replacements were made. If Q (quiet) is specified, the line is not displayed as it is deleted.

If a range is specified, all instances of string₁ that occur within the specified range are changed. Changed lines are displayed if Q is not specified. The change operation is terminated by pressing (HALT).

Some examples of this command are shown below:

C "ABC" TO "CBA" IN 1/5,8,9/13

Changes all occurrences of ABC to CBA in lines 1 through 5, line 8, and lines 9 through 13. All changed lines are displayed.

CHANGE Q "ABC" TO "DEF" IN 1

Changes all occurrences of the string ABC to DEF in line 1. Line 1 is not displayed.

CHANGE "ABC" TO "ABC" IN ALL

Displays all lines containing the string ABC.

---

* The string delimiter must be a single character, and cannot be a space, semicolon (;), alphabetic character (A through Z, a through z) or a number (0 through 9).

DELETE COMMAND

$$\left\{ \begin{array}{c} \text{DELETE} \\ \text{D} \end{array} \right\} [\text{Q}] [range\ list]$$

The DELETE command deletes lines from the work file. Deleted lines are not recoverable.

If no parameters are specified, the current line is displayed and deleted. If Q (quiet) is specified, the line is not displayed.

If a range is specified, all lines within the specified range are deleted. Deleted lines are displayed if Q is not specified. The delete operation may be terminated by pressing (HALT).

Some examples of this command are shown below:

    DELETE 5

Displays and deletes line 5 from the work file.

    DELETE /LAST

Displays and deletes all lines from line 5 to the last line in the work file.

    DQ 5/7,9/13,15

Deletes lines 5 through 7, lines 9 through 13, and line 15. No lines are displayed.

END OR EXIT COMMAND

$$\left\{ \begin{array}{l} \text{E} \\ \text{EXIT} \\ \text{END} \end{array} \right\}$$

The END or EXIT command terminates the EDITOR program and returns control to the operating system. All scratch files used to store the work file are purged. If any modifications have been made to the work file without executing a KEEP command, the EDITOR requests confirmation before purging the work file.

For example, entering EXIT terminates the edit session. If any modifications have been made to the work file, the program displays:

If it is okay to clear type "YES".

Clear?

If a Y or YES is entered, the program clears the work file, purges the scratch files, and displays:

END OF EDITOR PROGRAM

FIND COMMAND

$$\left\{\begin{matrix} F \\ FIND \end{matrix}\right\} \; [\; Q] \; \begin{bmatrix} string \; IN \; range \; list \\ line \; number \end{bmatrix}$$

The first form of the FIND command is used to locate a specified character string in the work file and to position the current line pointer at that line. If no options are specified, the work file is scanned for the first occurrence of the specified character string, starting with the current line. Lines preceding the current line are not searched. The character string may be any ASCII character string, delimited by any non-alphanumeric character* not appearing in the string.

If a range list is specified, the line or lines specified are scanned for the first occurrence of the character string. If the character string is found, that line is displayed and the line pointer is set to that line. If the character string is not found, a message is displayed, and the line pointer is set to the line following the last line scanned. If Q is specified, the pointer containing the character string is not displayed.

When only a line number is specified (in the second form of FIND), the line pointer is set to the specified line, and the line is then listed. If Q is specified, the pointer is set without displaying the line. If a line number is not specified, the current line is listed without advancing the line pointer.

Some examples of this command are shown below:

    FIND "ABC" IN 5/15

Lists the first line in the given range (lines 5 through 15) that contains the string ABC and sets the line pointer to that line.

    FIND FIRST

Resets the line pointer to the first line in the work file, and displays that line.

    F "XYZ" IN ALL

Displays the first line in the work file that contains the string XYZ. The current line pointer is set to the line displayed.

---

* The string delimiter must be a single character, but cannot be a space, semicolon (;), alphabetic character (A through Z, a through z), or a number (0 through 9).

GATHER COMMAND

$\left\{ \begin{array}{c} \text{G} \\ \text{GATHER} \end{array} \right\}$ ALL [TO *line number* [BY *increment value*]]

The GATHER command renumbers the entire work file. If the line number and increment value are not specified, lines are numbered in increments of 1 starting with the value 1.

If a line number is specified, the first line is renumbered with the value specified. If an increment value is specified, it is used as the incremental value for the renumbering process instead of the default value of 1.

An example of this command is:

GATHER ALL TO 100 BY 10

Renumbers the work file in increments of 10. The first line number in the work file is assigned line number 100.

HOLD COMMAND

$$\left\{ \begin{matrix} \text{H} \\ \text{HOLD} \end{matrix} \right\} [\text{ Q}] \, [range] \, [\text{ ,APPEND}]$$

The HOLD command copies lines from the work file to the hold file. Lines saved in the hold file may be added into the work file using the ADD command. Groups of lines may be moved within the work file using the HOLD, DELETE and ADD commands.

If no parameters are specified, the hold file is cleared, and the current line is copied into the hold file. If the Q (quiet) option is not specified, the copied line is also displayed.

If a range is specified, all lines within the specified range are copied into the hold file. Copied lines are displayed unless Q is specified. The hold operation is terminated by pressing (HALT).

If APPEND is not specified, the hold file is cleared before copying lines. If the hold file contains any lines, EDITOR requests confirmation before clearing the hold file. If APPEND is specified, the specified lines are appended to the end of the hold file.

Some examples of this command are shown below:

    HOLD 5/10,APPEND

Copies lines 5 through 10 to the end of the hold file. Existing lines in the hold file are unaffected.

    HOLD 5/10; DELETE 5/10; ADD,HOLD

Moves lines 5 through 10 to the end of the work file. Before clearing the hold file, the program displays CLEAR HOLD? A response other than Y or YES terminates the command without affecting the contents of the hold or work file.

KEEP COMMAND

$$\left\{ \begin{matrix} \text{K} \\ \text{KEEP} \end{matrix} \right\} \; file \; spec \; \left[\begin{matrix} \text{,UNN} \\ \text{,UNNUMBERED} \end{matrix} \right]$$

The KEEP command saves the contents of the work file in a file specified by the file spec. The file specifier must be enclosed in quotes.

The *file spec* parameter consists of the file name and an optional volume specifier. For example, if you want to specify a file called letter on a disc with the volume specifier :U2,5,0, use the following file spec:

"account:U2,5,0"

If the file already exists, the old file is purged before the file is kept. The EDITOR requires confirmation from the user before the old file is purged. If the old file is protected (files can be protected using the BASIC command PROTECT), the correct protect code must be entered before EDITOR can purge the old file.

When **UNN** or **UNNUMBERED** is specified, lines are saved without line numbers. If this option is not specified, blanks are appended to the end of each line to fill the maximum number of characters per line, followed by an 8-character line number. The Schema Processor accepts either numbered or unnumbered files.

Two examples of this command are:

    KEEP "SADTXT",UNN

Creates a data file SADTXT on the default mass storage device, and copies the work file without line numbers into that file.

    KEEP "ED,SAM"

Creates a data file ED on volume SAM, and copies the work file to file ED in numbered format. If the data file ED already exists on volume SAM, the program displays:

    ED,SAM already exists. Type "YES" to purge and then keep. PURGE?

If a **Y** or **YES** is entered, the data file is purged and the work file is copied to the file ED on volume SAM.

LIST COMMAND

$$\left\{ \begin{matrix} L \\ LIST \end{matrix} \right\} [\ Q]\ [range]\ [\ ,OFFLINE]$$

The LIST command lists lines from the work file. Lines may be output to either the CRT or a printer.

If no parameters are specified, the current line is displayed on the CRT.

If a range is specified, all lines within the specified range are listed. Line numbers are not listed when Q is specified. The list operation may be terminated by pressing (HALT).

If OFFLINE is specified, lines are printed on the default printer. The SET command may be used to select the offline printer, and to set the number of lines per page to be printed.

Some examples of this command are shown below:

    LIST ALL

Lists the entire work file on the display. The listing can be terminated at any time with (HALT).

    LISTQ 25/LAST

Display all lines starting at line 25. No line numbers are displayed.

    L ALL,OFFLINE

Lists the entire work file to the default printer (if no other printer has been defined using SET).

MODIFY COMMAND

$\left\{\begin{matrix} \text{M} \\ \text{MODIFY} \end{matrix}\right\}$ [range list]

The MODIFY command modifies lines in the work file. The specified lines are displayed, one at a time, and the cursor is positioned to the right of the displayed line. The displayed line can then be modified and re-entered. The entire line may be replaced by pressing (CLEAR) (on the HP 2622D workstation) or pressing (SHIFT) with the key labeled "Clear line" (on the HP 45262D workstation); then enter the new line.

The current line being modified may be re-displayed by pressing (CLEAR), on the HP 2622D workstation or (SHIFT) and the "Clear line" key on the HP 45262D workstation; then typing two slashes (//) and pressing (RETURN). Pressing (HALT) before re-entering the line to be modified terminates the command and leaves the displayed line unchanged.

Some examples of this command are shown below:

MODIFY 5/6

Displays lines 5 through 6 for editing. Lines may be entered without modification, or may be modified before being entered.

M FIRST

Displays the first line of the work file for modification.

SET COMMAND

$$\left\{ \begin{array}{l} \text{S} \\ \text{SET} \end{array} \right\} \left\{ \begin{array}{l} \text{LENGTH=}nnn \\ \text{PRINTER=}n\ [\ \text{,WIDTH=}nnn] \\ \text{LINES=}nnn \end{array} \right\}$$

The SET command is used to change EDITOR default parameters. The LENGTH parameter is used to set the maximum number of characters per line. The default length is 80 characters, but can be set from 20 thru 160 characters per line*. Odd values are incremented, causing the length to always be even. The TEXT command automatically sets the length parameter when the UNNUMBERED option is not specified. To display the value of the length parameter, first clear the line (this is done with (CLEAR) on the HP 2622D workstation or by pressing (SHIFT) with the "Clear line" key on the HP 45262D workstation); then type Length and press (⌀).

The PRINTER parameter is used to set the default printer for offline listings. The width is set to 132 characters per line, or is specified with the option WIDTH parameter.

The LINES parameter is used to set the number of lines printed per page on offline listings. The default value is 66, and may be set to any integer value from 20 through 999. To display the value of the LINES parameter, first clear the line (this is done with (CLEAR) on the HP 2622D workstation or by pressing (SHIFT) with the "Clear line" key on the HP 45262D workstation); then type Lp and press (⌀).

Some examples of this command are shown below:

    SET LENGTH=160

Sets the maximum number of characters per line to 160. Lines longer than 160 characters are truncated and a warning message is displayed.

    SET PRINTER=0

Sets the default printer (used for offline listings) to the standard printer. The width is set to 132 characters per line.

    S LINES=88

Sets the number of lines printed per page to 88 for offline listings.

---

*   If the work file is not empty, the length may only be increased from its current value.

TEXT COMMAND

$\left\{ \begin{matrix} T \\ TEXT \end{matrix} \right\}$ *file spec* $\left[\begin{matrix} ,UNN \\ ,UNNUMBERED \end{matrix} \right]$ $\left[,"Protect Code" \right]$

The TEXT command copies the specified data file into the work file. The old work file is lost. If the specified file is protected, the correct protect code must be entered before the file is copied into the work file.

The *file spec* parameter consists of the file name and an optional volume specifier. For example, if you want to specify a file called letter on a disc with the volume specifier :U2,5,0, use the following file spec:

"account:U2,5,0"

If UNN or UNNUMBERED is specified, the lines are numbered as they are read. Lines longer than the length specified by the set command are truncated, and a warning message is displayed. If UNNUMBERED is not specified, the length parameter is automatically set, and lines are numbered using the line numbers appended to the end of each line.

Some examples of this command are shown below:

    T "SADTXT",UNNUMBERED

Copies the data file SADTXT from the default mass storage device into the work file. Lines are automatically numbered as they are copied.

    TEXT "ED,SAM"

Copies the numbered file ED from the volume SAM into the work file.

    T "TFILE:U2,5,0"

Copies the numbered file TFILE from device :U2,5,0 into the work file.

WHILE COMMAND

$$\left\{ \begin{matrix} \texttt{W} \\ \texttt{WHILE} \end{matrix} \right\}$$

The WHILE command repeats two command sequences. A command sequence can be up to two display lines containing EDITOR commands (separated by semicolons). When executed, WHILE prompts for two command sequences (each is entered with (RETURN)). After the second command sequence is entered, the command sequences are displayed and executed, one after the other, until either (HALT) is pressed immediately after the command sequence is displayed, or until an error occurs. When (HALT) is pressed during execution of an EDITOR command in the WHILE loop, it terminates the command and proceeds to the next command, but does not terminate the WHILE loop. A WHILE command cannot be nested in another WHILE command.

An example of this command is:

```
FIND FIRST;WHILE
FINDQ "ABC"
MODIFY
```

This command sequence positions the line pointer in the first line of the file, locates each line containing the string ABC, and displays each line found for modification. When no more instances of the string ABC are found, the WHILE command terminates.

The LK 3000 Utility is a run-only, BASIC-language program which allows you to:

- Use the HP 250/260 as a remote terminal in an HP 3000 computer system.

- Transfer ASCII data to or from the HP 3000.

- Transfer BASIC programs to or from the HP 3000.

The utility is provided with the operating system of the HP 250/260. The utility requires that the TIO DROM is configured into the operating system and that the HP 250/260 contains an Asynchronous Serial Interface board. The HP 3000 can be connected to the HP 250/260 either directly with cables, or indirectly via modems (see the sub-section titled, "Using Modems", later in this section). The example operations in this appendix assume a direct interface to the HP 3000.

LOG-ON PROCEDURE

To load LK 3000 and log on:

1. Load the HP 250/260 operating system and execute:

    RUN "LK3000"

2. The utility first requests the port number at which the HP 3000 is connected:

    RUN "LK3000"

    HP 250/3000 INTERACTIVE LINK, for use with MPE V.
    Enter port number (1 . . 10): __

    The HP 250 has five ASI ports and the HP 260 can have either five or ten ASI ports. Type in the port number you want and press (RETURN):

    RUN "LK3000"

    HP 260/3000 INTERACTIVE LINK
    Enter port number (1 . . 10): 5

3. The HP 3000 system prompt (:) indicates that you are connected and can log-on by entering your assigned name and account. For example:

```
: HELLO JOHN.ACCOUNTS
```

To ensure using the correct protocol, append ";Term=10" to the log-on sequence when files are to be transferred. For example:

```
: HELLO JOHN.ACCOUNTS ;TERM=10
```

The standard log-on message and system prompt indicate the computer is waiting for your next command:

```
: HELLO JOHN.ACCOUNTS
HP3000 / BLOGGS COMPANY A  THU, MAR 20, 1986, 10:30 AM
:_
```

You can now execute HP 3000 commands and call any available subsystems, as described in your HP 3000 Users Manual.

LOG-OFF PROCEDURE

To end your session with the HP 3000, simply enter BYE in response to the system prompt:

```
: BYE

CPU=6.  CONNECT=17. THU, MAR 20, 1986, 10:47 AM
```

This closes your account and disconnects you from the HP 3000. Press ⌈HALT⌋ to terminate the LK 3000 utility. The following message is then displayed:

END OF HP 260/3000 INTERACTIVE LINK

NOTE

Exiting the LK 3000 utility before logging off (e.g., by pressing ⌈HALT⌋ (or ⌈BREAK⌋) or powering off) leaves your HP 3000 account open. To return to the point where you left off, execute RUN "LK3000" and enter the port number.

TERMINAL OPERATION

The LK 3000 utility allows interacting with the HP 3000 using the full HP 250/260 keyboard and display control keys. Press (RETURN) to transmit each command to the HP 3000.

After you have logged onto the HP 3000, the utility defines these softkeys to aid in terminal operation:

```
HP 260/3000 INTERACTIVE LINK, Rev X.XX.X   Date
Enter port number (1..20): 3
```

CONTROL	CARRIAGE	DATA LINK	BAUD RATE	TRANSFER	TRANSFER	HARD COPY	REMOVE
Y	RETURN	BREAK	9600	FROM 3000	TO 3000	**NONE**	KEY DISP

CONTROL Y – Sends a control character, which halts operation in the current subsystem and returns the subsystem prompt.

CARRIAGE RETURN – Enters a CR character, which returns the display cursor to the start of the current line.

DATA LINK BREAK – Sends a BREAK signal, a prolonged NULL, to interrupt computer operation and returns to the system prompt.

BAUD RATE – Selects the data transmission rate. The selected rate is displayed below the softkey label. This rate must match the rate set for the HP 260's port.

TRANSFER FROM 3000 – Initiates a procedure which transfers information from a source file in your HP 3000 account to a file created on the HP 250/260.

TRANSFER TO 3000 - Initiates a procedure which transfers the contents of an existing type DATA file to a source file created in your HP 3000 account.

HARD COPY - Selects the output device to be used for terminal output operations. The address of the currently-set device is shown below the softkey label. To select another available device, press the softkey until the device address is displayed. The default printer is usually configured at device address 0.

REMOVE KEY DISP - Removes the softkey definitions and labels, providing more display work area. Press SFK 8 again to re-define the other softkeys.

Two additional SFKs are available which do not have a definition shown on the CRT.

SFK 17 - Allows you to type in an HP 250/260 command to be executed. Such commands as CAT, PURGE, MSI are useful. After the command has executed, the LK 3000 utility resumes processing.

SFK 20 - Toggles the debug mode internal to the LK 3000 utility. The current contents of the display are not affected by pressing this key. In debug mode, all commands sent to the HP 3000 are displayed with an indication of current program state (input or output).

TRANSFERRING FILES

The two special procedures within the LK 3000 utility, TRANSFER TO 3000 and TRANSFER FROM 3000, provide an easy means to transmit information to or from an HP 3000 account. Whether transmitting data or programs, the information must be in ASCII- coded format. This means only HP 250/260 type DATA files and HP 3000 source files (created using EDITOR/3000 or TDP) can be used at the originating end. Each special procedure automatically creates the appropriate file at the destination. The HP 3000 uses the FCOPY utility.

Each program stored in a type PROG file can easily be duplicated into a type DATA file before using the LK 3000 utility to transfer the program to the HP 3000. For example:

> **LOAD "SALES"**   (load type PROG file)
> **SAVE "sales"**   (save in type DATA file)

After BASIC program lines have been transferred from the HP 3000 to a type DATA file, they can be stored into a type PROG file:

> **GET "orders"**   (get program into memory)
> **STORE "ORDERS"**   (store in type PROG file)
> **PURGE "orders"**   (erase type DATA file)

HP 3000 to HP 250/260 Data Transfer

To transfer the contents of an existing HP 3000 source file to the HP 250/260:

1. If you haven't done so already, log on as explained earlier.

2. When the system prompt appears, press the TRANSFER FROM 3000 softkey:

```
:
HP 3000 TO 260 FILE TRANSFER UTILITY
HP 3000 source file name: _
```

3. Enter the name of the source file containing data or BASIC program lines to be transferred to the HP 250/260. For example:

```
HP 3000 source file name: SFORM
HP 3000 file SFORM contains 55 records of 102 bytes each.
HP 260 destination file name: _
```

<div align="center">

┌─────────────┐
│   NOTE   │
└─────────────┘

</div>

The maximum record-size that is guaranteed to be transferred from the HP 3000 to the HP 250/260 is 155 bytes. Depending on the asynchronous configuration of your HP 3000, you might find it possible to transfer files with records larger than 155 bytes. The absolute maximum record-size that can be handled in an HP 3000 to HP 260 file transfer is 240 bytes.

If you have difficulty transferring files that have record-sizes greater than 155 bytes, you should change the structure of the file on the HP 3000 so that its records are 155 bytes long (or shorter).

4. Enter the name of a destination file, a type DATA file to be created on the HP 250/260 default drive:

```
HP 260 destination file name: SFORM1
START FILE TRANSFER
```

The utility creates the destination file and then transfers each record from the source file. If the data already exists, LK 3000 asks if the file is to be purged then resaved. The final display is:

```
FILE TRANSFER COMPLETE

END OF PROGRAM
: _
```

If the utility cannot create the destination file, or if an error is encountered during data transfer, the utility exits the procedure and displays a message. Refer to the "Data Transfer Errors" paragraph of this section for more information.

HP 250/260 to HP 3000 Data Transfer

To transfer the contents of an existing type DATA file to the HP 3000:

1. Log on as explained earlier.

2. When the system prompt (:) appears, press the TRANSFER TO 3000 softkey:

```
:
HP 260 TO HP 3000 FILE TRANSFER UTILITY
HP 260 source file name:
```

3. Enter the name of a type DATA file containing data to be transferred to the HP 3000. For example:

```
HP 260 source file name: DATA
HP 260 source file DATA contains 22 records of 256 bytes each.
Enter estimated record count to override catalog value: 139
Enter actual maximum record size to override catalog value: 160
HP 3000 destination file name: DATA
```

Once the source file has been located, its size is displayed. If the file was SAVEd, its record size is always 256 bytes and record count is just sufficient to contain the program. However, there is a maximum of 160 bytes of data in a SAVEd file, and there can be no size-dependent problem with the transfer of SAVEd files.

On the HP 250/260, strings may cross record boundaries within HP 250/260 files. This is not true on the HP 3000. Therefore, LK 3000 gives you an opportunity to supply the record size and record count of the HP 3000 destination file. The record size must be the size of the longest string in the HP 250/260 data file. The record count must be the number of strings in the file. If exact values are not known, always supply overestimates for these values. Underestimates will result in lost data. If the size and count of the HP 250/260 file is the correct size and count for the HP 3000 file, press (RETURN) without entering new values.

NOTE

The maximum record size that can be transferred from the HP 250/260 to the HP 3000 is 255 bytes.

4. Enter the name of the destination file, which must be a new file (the destination file cannot be a file that already exists in your HP 3000 account):

```
HP 3000 destination file name: PAYROL
START FILE TRANSFER
```

The utility creates the new source file and transfers each record from the HP 250/260 DATA file. The final display is:

```
FILE TRANSFER COMPLETE

END OF PROGRAM
: _
```

Terminating File Transfers

If you decide not to transfer a file, whenever a file name is asked for press (RETURN) without giving a file name. This terminates the file transfer.

If the transfer is already in progress, press (HALT) to terminate the transfer. Press the CARRIAGE RETURN softkey repeatedly until the FCOPY prompt ">" appears. Then type EXIT (RETURN) to terminate the FCOPY utility.

Data Transfer Errors

If the subprogram encounters an error while creating a file or transferring data, it automatically exits the procedure and displays a message. For example:

```
:
HP 3000 TO 260 FILE TRANSFER UTILITY
HP 3000 source file name: SFORM
HP 3000 file SFORM contains 55 records of 102 bytes each.
HP 260 destination file name: SYSTEM
ERROR IN CREATING FILE
END OF FILE TRANSFER
: _
```

If you abort the transfer operation (via power off), you must first RUN "LK3000", enter the port number and abort operation in the HP 3000's FILE COPIER subsystem. For example:

```
:
HP 3000 TO 260 FILE TRANSFER UTILITY
HP 3000 source file name: SFORM
HP 3000 file SFORM contains 55 records of 102 bytes each.
HP 260 destination file name: SFORM1
RECORD 39 TRANSFERRED          HALT pressed during file transfer.

END HP 260/3000 INTERACTIVE LINK

RUN "LK3000"
```

```
    HP260/3000 INTERACTIVE LINK
    Enter port number (1 . . 10): 5          re-establish link

    EXPECTED "YES" or "NO".   (CIWARN 990)
    ABORT? YES        respond to prompt to abort FILE COPIER subsystem

    PROGRAM ABORTED PER USER REQUEST.    (CIERR 989)

    HP32212A.3.20 FILE COPIER (C) HEWLETT-PACKARD CO. 1984

    :  _          return to operating system
```

If other HP 3000 operating system errors occur while running LK 3000, use the CONTROL Y, CARRIAGE RETURN, and/or DATA LINK BREAK softkeys to recover from the error. In some cases, re-running LK 3000 and logging-on again may be required.

There is a special-case error which is not recognized as such by the LK 3000 utility. This error occurs if you under-specify the record size of the new file to be created on the HP 3000. This error shows itself by the termination of the data file transfer without the display of the message :

END OF FILE TRANSFER

USING MODEMS

The LK 3000 data communication link can be used with direct connection between the HP 3000 and the HP 250/260, and also when the devices are connected indirectly using modems.

Your HP 260 will operate with the following types of modem:

```
BELL 103J
BELL 212A
European standard CCITT V.21 modems
European standard CCITT V.22 modems
```

Operating Considerations

Be sure to consider these points when using LK 3000.

- Program (PROG) files cannot be transferred from the HP 250/260 without first making them DATA files.

- IMAGE files cannot be transferred. If you wish to transfer a data base or data set, first write an HP 250/260 program to read the data set. Then, create a DATA file and write the appropriate information into the file using PACK and UNPACK statements.

- The HP 250/260 and HP 3000 do not have the same floating point capabilities. When transferring information to the HP 3000, checks should be made to ensure that the numbers do not overflow or underflow on the HP 3000.

- Binary (BIN) files cannot be transferred.

Floating Point Ranges

Limit	HP 250/260	HP 3000
Maximum	9.9E99	5.7896E76
Minimum	1E-99	1.727E-77

THE DISC REPACK UTILITY

REPACK rearranges files on disc (REPACK cannot be used on tapes) into one contiguous area so that fragmented free space can be used. Use REPACK when the system reports that there is insufficient disc space to store a file. Use of REPACK does not improve file access time.

CAUTION

Perform a full backup before using REPACK. If a serious disc error occurs during REPACK (such as an ERROR 81, 88, 89, or 90), REPACK will stop and a file could be lost. If such an error ever occurs, call your Hewlett-Packard support representative. The disc could be defective.

Repack

To run REPACK, enter **RUN "REPACK"**. A list of mass memory devices appears on the screen. If the device is **"unavailable"**, either the disc is not inserted in the drive or is not initialized. Press the softkey corresponding to the disc you want to REPACK.

```
                          DISC REPACK UTILITY



             LABEL        DEVICE                 COMMENT

             SYSTEM          CTD    :K2,5,1
             Volume       7945/46   :U2,5,0
                          MICRODISC :A2,2,1
             SYSTEM       9133/34   :M2,2,0




 _____
 Please select a device


 _____
 |   CTD   | 7945/46 |MICRODISC| 9133/34 |   |   |   |   |   |   |  EXIT   |
 | :K2,5,1 | :U2,5,0 | :A2,2,1 | :M2,2,0 |   |   |   |   |   |   | PROGRAM |
```

The **CHECKREAD** feature ensures data integrity during repacking. Although REPACK takes longer when CHECKREAD is **ON**, this feature is recommended, especially when repacking flexible discs. Press **CHANGE CHECKREAD** to turn the **CHECKREAD** feature **ON** or **OFF**, then press **CONTINUE** to start the repacking. When the utility is finished, press **RESTART** to repack another disc, or press **EXIT** if finished with the utility.

```
                            DISC REPACK UTILITY


                LABEL        DEVICE              COMMENT

                SYSTEM          CTD    :K2,5,1
                Volume       7945/46   :U2,5,0
                             MICRODISC :A2,2,1   SELECTED
                SYSTEM       9133/34   :M2,2,0




Repack 100% complete                            CHECK READ ON


REPACK COMPLETE
```

							RESTART		EXIT PROGRAM

INTRODUCTION

In order to maximize efficiency and minimize the amount of code that you would have to write to use an HP 39800A bar code reader on your computer system, a set of five BASIC subprograms are available. These subprograms are supplied with the standard set of utilities, and are stored in the program named "BCRSUB".

CONFIGURATION

The HP 39800A bar code reader can be connected to an Asynchronous Serial Interface (ASI) port with a standard direct connect RS-232-C cable. Once connected, it must also be configured into the system by using the "CONFIG" utility. The following is the procedure for connecting and configuring the bar code reader (BCR) to your computer.

A)   On your computer:

   1.   Select an unused ASI port for the BCR connection.

   2.   **RUN "CONFIG"** from your system disc.

   3.   Select the **"DROM Edit"** function (#2) and:

      -   Configure the TIO DROM (#10) to be loaded.

      -   Record the configuration.

   4.   Next select the **"Asynchronous Port Configuration"** function (#9) and:

      -   Configure the port that the BCR is connected to as follows:

Class:	Terminal
Type:	26XX
Fmt:	701*
Speed:	9600 **
SwConf:	DIRECT

      *   NOTE that this is not the only FORMAT that the reader will work on, but if a different FORMAT is selected, then the PARITY and STOP BIT switches on the BCR must reflect the change.

   **   If your system allows this.

Bar Code Reader

B)   On the HP 39800A:

   1.   Ensure that both the BCR and the ASI port are configured to the same baud rate:

        For example:

        - If the ASI port is set at 9600, set the BCR to 9600 baud:

        Switch 0:   0 (off)
               1:   1 (on)
               2:   1 (on)

   2.   According to the format configuration given above set the parity and stop bits:

        PARITY: Odd   Sw 3:   1
                                4:   1
        STOP BITS: One   5:   0

   3.   Below are the settings for the remaining switches:

        CHARACTER DELAY   Sw:
          Disabled   6:   0
        S/W HANDSHAKE:
          Standalone Enq/Ack   7:   1
                                      8:    1
        MODE: Character   9:   0
        LOCAL ECHO:
          Disabled   10:   0
        TERMINATOR: CR   11:   0
                                     12:    0
        BLOCK MODE
          TERMINATOR: None   13:   0

        For CODE SELECTS, CHECKSUMS, and LABEL LENGTHS (switches 14-23), refer to the
        Operating and Installation Manual that comes with the bar code reader.

C)   Power the computer off and then on (re-boot) to download the new configuration to the ASI
     firmware. Run the test program "BCRTST" to verify that the bar code reader is connected and
     functioning properly.

Once the BCR is configured into the system, a program must be written to access and control the BCR.
This can easily be achieved by using the subprograms provided in the BCRSUB utility.

SUBPROGRAMS

The subprograms control the operation of the bar code reader (BCR). The following subprograms are available:

Bcr__initiate   -   resets reader and puts it in intercept data mode

Bcr__tell__oper   -   turns LEDs on and off and sounds tone

Bcr__id__status   -   returns model number and status

Bcr__accept__msg   -   enables reader for one scan

Bcr__terminate   -   terminates exclusive access to port

Each of the subprograms trap any error that occurs within the subprogram. The HALT key is also trapped by any of the subprograms with a return to the calling program and an indicator that (HALT) was pressed. Those subprograms that send information to the Bar Code Reader (via **PRINT** statements) issue a **PRINTER IS** statement. The **PRINTER IS** device is returned at the end of a subprogram to the device specified in the call of the subprogram. This eliminates the need for the calling program to re-issue a **PRINTER IS** to continue printing.

The BCR Subprograms can be either loaded and stored with the program that calls them or they can be loaded dynamically from within the calling program. Loading the subprograms dynamically allows new revisions of the BCRSUB utility to be used without modifying your program. To load the subprograms from within your program, include statements similar to these at the beginning of your program:

```
DEL 9000,9999
LOAD SUB "BCRSUB",9000,1
```

This loads the bar code reader subprograms at line 9000 of your program with line increments of one.

If the amount of available memory in your application is limited, the subprograms can be loaded individually, used as needed, and then deleted. Refer to Chapter 6 of the BASIC Programming Manual for more information on how to load individual subprograms from within a subprogram file.

Bcr__Initiate

```
SUB Bcr_initiate(Bcr_port,Bcr_port_wait,Bcr_gr_pitch,Bcr_end_printer,Bcr_error)
```

Function

This subprogram is used to request exclusive access to the port to which the bar code reader is connected. It issues a hard reset to the reader and puts it in intercept data mode. It also sets the good-read beep pitch.

Entry Conditions

Bcr__port:	Port Number (1-10) to which bar code reader is connected. Device Address = Port Number + 10
Bcr__port__wait:	0 - do not wait for port if currently being used non-zero - wait for port if currently being used
Bcr__gr__pitch:	0 - do not use good-read beep Integer 1 through 16 - pitch or good-read beep other - set good-read beep to 15 (default)
Bcr__end__printer:	address of printer that is destination device for **PRINTER IS** upon exit from this subprogram
Bcr__error:	ignored

Exit Conditions

Bcr__port:	value upon entry
Bcr__port__wait:	value upon entry
Bcr__gr__pitch:	value upon entry
Bcr__end__printer:	value upon entry
Bcr__error:	0 - no error occurred in subroutine
	-1 - **HALT** key pressed
	other - error number (**ERRN**) for the first error that occurred in the subroutine

If no error occurred:

- the task has exclusive access to port Bcr__port

- the bar code reader has been hard reset and is in intercept data mode

- the pitch for the good-read beep is set as specified upon entry in Bcr__gr__pitch

If an error occurred:

- the task may or may not have exclusive access to port Bcr__port

- the bar code reader may or may not have been hard reset and may or may not be in intercept data mode

- the pitch for the good-read beep may or may not have been set as specified upon entry in Bcr__gr__pitch

- the destination device for **PRINTER IS** is Bcr__end__printer unless an error occurred on that statement. In that case, the destination device for **PRINTER IS** is 8.

```
┌─────────────┐
│    NOTE     │
└─────────────┘
```

There should be at least a two-second delay after Bcr__initiate is called before any other data is sent to the bar code reader. This allows the reader time to reset.

Bcr__tell__oper

```
SUB Bcr_tell_oper(Bcr_port,Bcr_green_led,Bcr_red_led,Bcr_sound_tone,

        Bcr_end_printer,Bcr_error)
```

Function

The subprogram passes information to the operator of the bar code reader by turning the LEDs on the reader on or off, by enabling or disabling the LEDs, or by sounding the tone.

The subprogram Bcr__initiate must have been called previously in the program and a value of zero must have been returned in Bcr__error.

Entry Conditions

Bcr__port:	Port Number (1-10) to which the bar code reader is connected. Device Address = Port Number + 10
Bcr__green__led:	0 - turn off the green LED on the bar code reader
	1 - turn on the green LED on the bar code reader
	2 - disable automatic feedback on the green LED
	3 - enable automatic feedback on the green LED
	other - do not modify the green LED
Bcr__red__led:	0 - turn off the red LED on the bar code reader
	1 - turn on the red LED on the bar code reader
	2 - disable automatic feedback on the red LED
	3 - enable automatic feedback on the red LED
	other - do not modify the red LED
Bcr__sound__tone:	Integer 1 through 16 - sound the appropriate tone
	other - do not sound a tone
Bcr__end__printer:	address of the printer that is to be the destination device for **PRINTER IS** upon exit from this subprogram
Bcr__error:	ignored

Exit Conditions

Bcr__port:	value upon entry
Bcr__green__led:	value upon entry
Bcr__red__led:	value upon entry
Bcr__sound__tone:	value upon entry
Bcr__end__printer:	value upon entry
Bcr__error:	0 - no error occurred
	-1 - **HALT** key pressed
	other - error number (**ERRN**) for the first error that occurred in the subprogram

If no error occurred:

- the green LED is set as specified upon entry in Bcr__green__led

- the red LED is set as specified upon entry in Bcr__red__led

- the tone was sounded as specified upon entry in Bcr__sound__tone

- the destination device for **PRINTER IS** is Bcr__end__printer

If an error occurred:

- the green LED may or may not be set as specified upon entry in Bcr__green__led

- the red LED may or may not be set as specified upon entry in Bcr__red__led

- the tone may or may not have been sounded as specified upon entry in Bcr__sound__tone

- the destination device for **PRINTER IS** is Bcr__end__printer unless an error occurred on that statement. In that case, the destination device for **PRINTER IS** is 8.

Bcr_Id_status

```
SUB Bcr_id_status(Bcr_port,Bcr_id$,Bcr_status$,Bcr_end_printer,Bcr_error)
```

Function

This subprogram returns the model number of the bar code reader and its current status.

The subprogram Bcr_initiate must have been previously called in the program with a value of zero returned in Bcr_error.

Entry Conditions

Bcr_port:	Port Number (1-10) to which the bar code reader is connected. Device Address = Port Number + 10
Bcr_id$:	ignored (string must be able to hold at least 6 characters)
Bcr_status$:	ignored (string must be able to hold at least 14 characters)
Bcr_end_printer:	address of the printer that is to be the destination device for **PRINTER IS** upon exit from this subprogram
Bcr_error:	ignored

Exit Conditions

Bcr__port:	value upon entry
Bcr__id$:	If Bcr__error is not equal to zero and if the error occurred before the destination device for **PRINTER IS** was set on exiting the subprogram, then the string is null. Otherwise, it contains the six-character model of the bar code reader.
Bcr__status$:	If Bcr__error is not equal to zero and if the error occurred before the destination device for **PRINTER IS** was set on exiting the subprogram, then the string is null. Otherwise, it contains a 14-character escape sequence. The escape sequence contains the status of the bar code reader.
Bcr__end__printer:	value upon entry
Bcr__error:	0 - no error occurred in the subprogram
	-1 - **HALT** key pressed
	other - error number (**ERRN**) for the first error that occurred in the subprogram

If no error occurred:

- the model number of the bar code reader is returned in Bcr__id$

- the current status of the bar code reader is returned in Bcr__status$

- the destination device for **PRINTER IS** is Bcr__end__printer

If an error occurred:

- Bcr__id$ and Bcr__status$ are set as described above under exit conditions

- the destination device for **PRINTER IS** is Bcr__end__printer unless an error occurred on that statement. In that case, the destination device for **PRINTER IS** is 8.

Bcr_accept_msg

```
SUB Bcr_accept_msg(Bcr_port,Bcr_timeout,Bcr_message$,Bcr_error)
```

Function

This subprogram enables the bar code reader for one good scan. It then disables the bar code reader and returns the bar code message. A time-out is issued if a good scan does not occur within the specified period of time (to allow further operator prompting, etc.)

The subprogram Bcr_initiate must have been previously called in the program and a value of zero must have been returned in Bcr_error.

Entry Conditions

Bcr_port:	Port Number (1-10) to which the bar code reader is connected. Device Address = Port Number + 10
Bcr_timeout:	Integer 1 through 32767 - maximum number of seconds to wait before timing-out if no good scan is obtained
	other - do not time-out waiting for a good scan
Bcr_message$:	ignored (string must be able to hold the largest possible bar code message that can be scanned)
Bcr_error:	ignored

Exit Conditions

|	
Bcr__port:	value upon entry
Bcr__timeout:	value upon entry
Bcr__message$:	If Bcr__error is not equal to zero or if a time-out occurred, then the string is null. Otherwise, it contains the bar code message just scanned.
Bcr__error:	0 - no error occurred in subprogram
	-1 - HALT key pressed
	other - error number (ERRN) for the first error that occurred in the subprogram

If no error occurred:

- the bar code message just scanned is returned in Bcr__message$ or the time-out occurred so a null string is returned, and further scans are disabled.

If an error occurred:

- Bcr__message$ is set as described above under exit conditions for that variable

- further scans are disabled

Bcr_terminate

SUB Bcr_terminate(Bcr_port,Bcr_error)

Function

The subprogram allows you to release exclusive access of the port to which the bar code reader is connected.

Entry Conditions

Bcr_port: Port Number (1-10) to which the bar code reader is connected. Device
                     Address = Port Number + 1

Bcr_error: ignored

Exit Conditions

Bcr_port: value upon entry

Bcr_error: 0 - no error occurred in subroutine

                     -1 - HALT key pressed

                     other - error number (ERRN) for the first error that occurred in the
                             subprogram

If no error occurred:

-   the port Bcr_port is released from exclusive access

If an error occurred:

-   the port Bcr_port may or may not be released from exclusive access

BACKUP ERROR MESSAGES

Error encountered, disc not erased.

Checkread error encountered.

Write error on the backup file encountered.

I/O error on updating the directory.

The spare directory on the volume recovered was required.

Destination volume cannot be the same as the source.

Selected device was not available.

Backup file already exists on _____.

File is protected or wrong protect code specified.

Illegal file name specified.

Specified destination volume not found.

Destination volume failure, not present or door open.

Backup failure in FNCK-B FILE # _____.

The backup log may not be directed to a null device.

Invalid printer select code.

Printer channel XX is down, off-line, or not available.

Invalid printer select code.

Unable to find the source volume.

Unable to obtain exclusive access to the source volume.

Unable to create the destination file.

Read error on the directory of the volume being backed up.

In selected files mode, you must enter at least one file.

Error Messages

The largest hole has XXXXX physical records; at least four are required.

You must re-label the destination volume to _____ before continuing.

Illegal volume label.

Destination volume is write-protected.

The label specified does not match the one on the disc you selected. You should re-label the disc or change the destination.

Any files on _____ or _____ will be erased.

The volume _____ on _____ will be relabeled.

Unable to lock door on device program run from.

The revision of BKSUB1 or BKSUB2 does not match the revision of the programs.

Error XXX encountered on attempt to load subprogram.

Error XXX in line YYYY.

Error XXX encountered on attempt to re-label volume.

Error on attempt to get form _____.

The backup file may not be the same as any of the BACKUP utility files.

RECOVR ERROR MESSAGES

Illegal file name.

Invalid printer select code.

Printer channel xx is down, off-line or not acceptable.

Disc error on backup file header.

File specified is not a backup file.

Backup file was made by version of the backup utility that was more recent than this version of the recovery utility.

Incorrect protect code specified for the backup file.

Backup file was renamed from: <filename>.

Disc error in file header.

Unable to find next file in the backup file.

Checkread error on <filename>.

Records <start> through <end> lost.

Program load error on <file>.

Write failure on <file>. File not recovered.

File already exists. No change.

Insufficient space on volume to recover <file>.

Directory failed on destination. <File> not recovered.

Spare directory accessed on destination.

Read failure on backup file. Unable to determine name of next backup volume.

Records lost. <File> can only be partially recovered.

Directory error on destination volume. <File> not recovered.

Illegal volume seg #.

Unable to obtain exclusive access to the source volume.

Recovery report may not be directed to the null device.

Error Messages

Unable to obtain exclusive access to destination volume.

File ignored. Already exists on <volume>.

In selected files mode, you must enter at least one file.

Memory overflow with subroutines <subroutine name> through <subroutine name>.

Subroutine file error (error #) with subroutines <sub name> through <sub name>.

Program error number ..... #.

Error occurred in line ..... #.

Error occurred in file ..... <file name>.

File lost due to incorrect backup volume sequence.

Read error at records <start> through <end>. <File> lost.

Backup file corrupt starting at <File>. File not recovered.

File name already entered.

Illegal name already entered.

Illegal volume. Vol. set. # must be ascending.

Program load error. Incorrect revision on <file>.

Could not get form _____

DBLOAD/DBUNLD ERROR MESSAGES

Error Number	Error Message
1	**INCORRECT PASSWORD** The specified maintenance password does not match the data base maintenance password.
2	**IMPROPER SET COUNT *** The number of data sets in the data base is out of range.
3	**IMPROPER ITEM COUNT *** The number of items in the current data set is out of range.
4	**SEARCH ITEM SUBCOUNT >1 *** The sub-item count of the search item of the current data set is greater than one.
5	**UNKNOWN SEARCH ENTRY TYPE *** The search item type is not INTEGER, SHORT, REAL or STRING.
6	**IMPROPER SEGMENT ENTRY COUNT** A program or system failure has caused the creation of a data set backup segment to fail.
7	**PROGRAM COMPLETION REQUIRES ROOT FILE ****
8	**NO ROOM ON CURRENT BACKUP VOLUME** There is no free space on the specified backup volume to create the backup file.
9	**DATA SET NAME NOT FOUND** The specified data set name is not in the data base.
10	**DATA BASE STATUS status** A data base operation has failed, producing the status information shown.
11	**DATA BASE NOT AVAILABLE** The data base cannot be opened for exclusive access.
12	**BACKUP FILE VOLUMES OUT OF ORDER** The backup segment on the backup volume does not correspond with a previous segment.
13	**DUPLICATE BACKUP FILE NAME **** A file with the backup file name on the backup volume must be purged before the backup file may be created.
14	**PURGE NOT CONFIRMED; OLD FILE KEPT** The response to the 'purge file' request was 'N' or 'NO'. The original file is unchanged.
15	**FATAL ERROR error ENCOUNTERED IN PROGRAM program name--status** The named program encountered a program error while processing. The error number corresponds to the error encountered. The status number is for Hewlett-Packard's use only.

16

ROOT FILE NOT FOUND
    The data base root file does not exist on the specified volume.

17

ATTEMPT TO UNLOAD OR LOAD AUTOMATIC MASTER
    The single data set option was used to request an unload or load of an automatic master
    data set.

18

ITEM POSITION VALUE EXCEEDS ITEM COUNT
    An entry in the backup set-item-position list exceeds the number of items in the backup
    data set.

19

IMPROPER VOLUME COUNT *
    The number of data base volumes is out of range.

20

ITEM TYPES DO NOT MATCH
    The item types of the backup data set (possibly restructured with the 're-order' option)
    do not match the item types of the destination data set.

21

ATTEMPT TO LOAD CORRUPT DATA BASE
    The data base has been marked corrupt by IMAGE; the data base must be erased before
    it is loaded.

22

REQUESTED DATA SET NUMBER NOT FOUND
    The source data set number is not in backup file.

23

ZERO LENGTH BACKUP FILE
    Directory information on the backup volume is inconsistent.

24

IMPROPER DATA SET NUMBER **
    The data set number of the specified data set name is 0.

25

FORM IS NOT COMPLETE
    Not all of the necessary values have been entered: the cursor is positioned in the required
    field.

26

FILE NAME NOT FOUND
    The backup file name is not on the backup volume.

27

IMPROPER PATH NUMBER **
    The path number is out of range.

28

IMPROPER INPUT VALUE
    An input value is invalid or out of range; the cursor is positioned at the improper value.

29

INCORRECT FILE TYPE
    For DBUNLD, the indicated file cannot be purged.
    For DBLOAD, the specified file is not a backup (BKUP) file.

30

BACKUP FILE NOT CREATED BY DBUNLD UTILITY
    The internal format of the backup file is incorrect. The backup file may have been
    created by another backup utility.

31   ERASE REQUIRES ALL VOLUMES BE MOUNTED *
        The data base is marked corrupt and all data base volumes must be mounted for the data
        base to be erased.

32   FEWER ENTRIES UNLOADED THAN EXPECTED
        The number of data entries retrieved from the data set is less than the expected number
        of entries in the data set.

33   FEWER ENTRIES LOADED THAN EXPECTED
        The number of entries in the backup data set segment is less than the anticipated number
        of data set entries.

34   DATA BASE IS MARKED CORRUPT *
        A data base marked corrupt by IMAGE has been opened to allow the recovery of data
        from the data base.

35   PROGRAM FILE VERSION DISAGREEMENT
        The revision code of the program (segment) loaded does not agree with the previous
        program segment revision code.

36   BACKUP SET NUMBER NOT IN DATA BASE
        A data set number in the backup file does not exist in the data base.

37   READ FAILURE IN DATA SET RECORD POSITION number
        A mass memory read failure has occurred for the data set record position shown. The
        unload process will continue with the next data set record position.

38   SEARCH ITEM ERROR **
        Data base search item information is inconsistent.

39   DATA SET ENTRY OMITTED FOR SEARCH VALUE value **
        For a master set: The manual-master entry for the search value shown is duplicate and
        cannot be added to the data set.

        For a detail set: The related manual-master entry for the search value shown is missing
        and the detail entry with this search item value cannot be added to the data set. The
        load process will continue with the next entry.

40   VOLUME NAME TOO LONG: TRUNCATED VALUE name *
        The specified volume name is longer than eight characters. The first eight characters of
        the name will be used.

41   FILE PROTECT CODE DOES NOT MATCH
        The specified protect code does not match the backup file protect code.

42   MISSING DATA SET number
        The data set number has not been created. If this message is displayed during a data base
        erase, no number will be displayed.

43   DATA ITEM LENGTH OR PRECISION LOST *
        During data base restructuring, either non-blank characters were lost from the end of a
        string, or significant digits or exponent range was lost in a numeric conversion.

44   ITEM CONVERSION ERROR **
     Data base or backup file item-length information is incorrect.

45   CORRUPT DATA BASE REQUIRES SERIAL MODE
     Chained mode unload is not allowed on the data base. Serial mode operation must be used to access the data entries.

46   DATA SET REQUIRES ITEM RESTRUCTURING *
     Item conversions must be performed on the backup file data entries to load the entries into the data set. Numeric value conversions or string length conversions are required.

*   Indicates that data or structural information within the data base has been lost, preventing the operation from completing.

**   This message is for information or warning to the user. Program execution will continue.

EDITOR ERROR MESSAGES

Error Code	Error Message
1	CLEAR NOT CONFIRMED, HOLD FILE UNCHANGED
2	CLEAR NOT CONFIRMED, WORK FILE UNCHANGED
3	FILE NOT FOUND
4	FILE NOT NUMBERED, WORK FILE IS EMPTY
5	FILE NOT NUMBERED, WORK FILE UNCHANGED
6	HOLD FILE FULL
7	ILLEGAL COMMAND
8	ILLEGAL FILE NAME
9	ILLEGAL LINE NUMBER
10	ILLEGAL SET PARAMETER
11	ILLEGAL SET PARAMETER VALUE
12	ILLEGAL VOLUME OR MASS MEMORY SPECIFIER
13	IMPROPER FILE TYPE
14	LINE ALREADY PRESENT
15	LINE NOT FOUND
16	LINE NUMBER OUT OF RANGE
17	NESTED WHILE COMMAND IS ILLEGAL
18	NO TEXT IN HOLD FILE
19	NO TEXT IN WORK FILE
20	NULL RANGE OR FIRST>SECOND
21	PURGE NOT CONFIRMED, TEXT NOT KEPT
22	SCRATCH FILE ERROR (FATAL)
23	STRING NOT FOUND WITHIN RANGE
24	SYNTAX ERROR
25	WORK FILE FULL ... KEEP (NUMBERED) AND THEN TEXT
26	UNABLE TO OPEN OR READ FILE
27	UNDELIMITED FILE SPECIFIER
28	UNDELIMITED STRING
29	UNEXPECTED SYSTEM ERROR (FATAL)
30	VOLUME NOT FOUND
31	WARNING, COMMANDS FOLLOWING WHILE ARE LOST
32	WARNING, LINE TRUNCATED