# 13 Disk Maintenance

Disk Maintenance
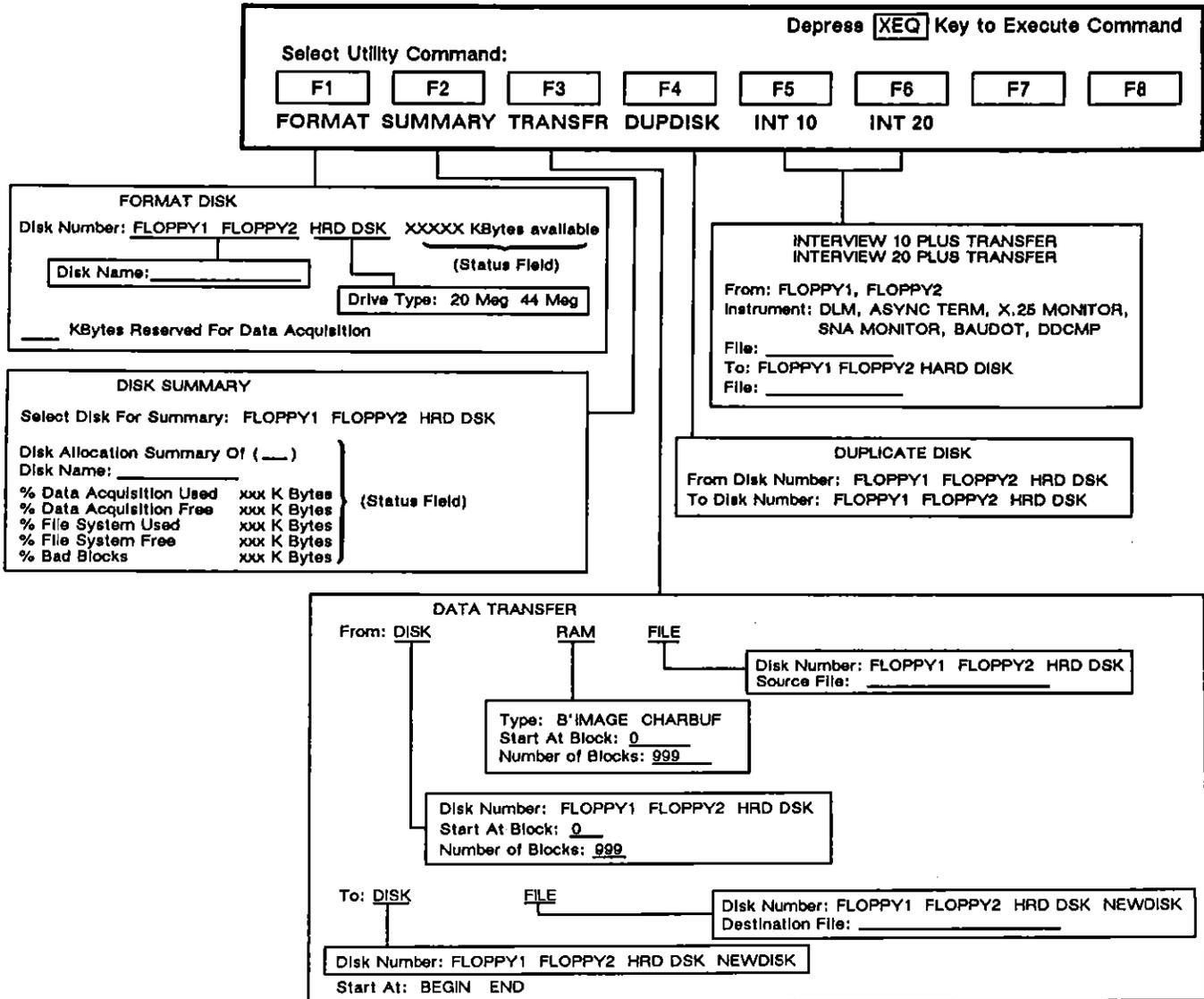
Figure 13-1 Disk Maintenance menu.

13 Disk Maintenance

13.1 The Disks

The INTERVIEW has two disk drives designed for 3.5 inch double-sided, high-density microfloppy disks. Maximum storage capacity of each microfloppy is 1.4 Mbytes.

A hard disk is installed in the 7200 *TURBO*, 7500, and the 7700 *TURBO* and is available as an option for the 7000. Depending on which hard disk is installed, maximum storage capacity of the hard disk is either 20 or 44 Mbytes.

The drives are referenced by number. Floppy Disk 1 (FD1) is the disk installed in the left-hand drive. Floppy Disk 2 (FD2) resides in the right-hand drive. The Winchester Disk is referred to as Hard Disk (HRD). The default drive at power-up is the disk from which the system loads initialization software. The INTERVIEW first checks FD1, then FD2, and finally, HRD. As soon as it detects system software, it stops the search and boots up.

13.2 Allocating Disk Space

Each disk must be formatted before it is available for data capture. Memory on each INTERVIEW disk can be partitioned for two types of storage: data acquisition tracks and a filing system. This partitioning must be performed before information is stored on disk. The Format command on the Disk Maintenance screen is used for this purpose. This command is explained later in this section.

13.3 Data Acquisition Tracks vs. the Filing System

Data acquisition tracks are sequential access data tracks which store Bit-Image or Character-oriented data in block format. Block size is 2 Kbytes, and each recorded block is numbered and date/time stamped. When data is recorded on disk in real-time, it is always captured on data acquisition tracks.

Recorded blocks can be accessed by block number and played back. However, any subsequent disk recording session overwrites the contents of the data acquisition tracks, so it is advisable to save this recorded data to a file using the Data Transfer command on the Disk Maintenance screen (see Section 13.4).

The filing system is a user-created hierarchy of files and directories for storing and organizing captured line data, setups (menu contents), protocol package data, C code, or entire test programs. Files are identified and accessed by name (full or

relative pathname). Existing files and directories, descriptive information, and file management commands all appear on the File Maintenance screen. The File Maintenance screen, file naming conventions, and file access are discussed in Section 14.

13.4 The Disk Maintenance Screen

The Disk Maintenance screen is part of the Utilities menu group. All selections available on the menu are shown in Figure 13-1. The default Disk Maintenance screen is shown in Figure 13-2. Several disk management functions are grouped on this menu (as evidenced by the function keys in Figure 13-2). Disk formatting, data transfers, and disk duplication are all performed from this menu. In addition, the menu provides a summary of disk space for each of the disks associated with the INTERVIEW.

```
**  Disk  Maintenance  **


                  Command:  ▌ DATA  TRANSFER ▌


From: ▌DISK▌    Disk  Number: ▌FD1▌

Start  At  Block:  0
Number  Of  Blocks:  999


To: ▌DISK▌        Disk  Number: ▌FD1▌

Start  at: ▌BEGIN▌
                            Depress ▌XEQ▌ Key  To  Execute  Command

Select  Utility  Command
▌ F  1 ▌  ▌ F  2 ▌  ▌ F  3 ▌  ▌ F  4 ▌  ▌ F  5 ▌  ▌ F  6 ▌  ▌ F  7 ▌  ▌ F  8 ▌
FORMAT  SUMMARY  TRANSFR  DUPDISK   INT  10  INT  20
```

Figure 13-2 The default screen.

The selected command is always posted at the top of the screen. The screen repaints for each command. Once you have filled in appropriate menu fields, press ▭ to execute the command. In cases where data could be destroyed, you will have the option to continue the process by pressing GOAHEAD, or to stop the process by pressing ABORT. Status messages will inform you of any errors that are encountered. Error messages are listed and defined in Appendix A.

(A) Format Disk

This command (see menu selections, Figure 13-3) is used primarily to prepare floppy disks for data acquisition and file creation. A new disk must always be formatted before use.

The hard disk is formatted prior to delivery. *It is not recommended that you format the hard disk.* If you do want to format it to reallocate storage space, however, be sure that you know the size of your hard disk before you begin. Use the Disk Maintenance Summary command to check the size. See Section 13.4(B). The total in the right–hand column should approximate either 20 or 44 Mbytes.

> *CAUTION: Formatting a disk causes loss of its entire contents.*
> *It is recommended that you write–protect or duplicate any disk*
> *you wish to preserve. Periodic back–up of the hard disk is*
> *strongly recommended. Backup is* required *prior to formatting*
> *the hard disk. See Section 2.4 for instructions on backing up the*
> *hard disk.*

Before this command is executed, a number of subfields must be filled in. Subfields appear when you press the FORMAT function key.

```
**  Disk  Maintenance  **

                Command:        FORMAT  DISK

Disk Number:  FD1              1440K    Bytes Available
Disk Name: _____

_____K Bytes Reserved For Data Acquisition
```

Figure 13-3 New disks must be formatted for data acquisition and file creation.

1. *Disk number.* Floppy 1, Floppy 2, or Hard Disk must be designated for formatting in the **Disk Number** field. Once the disk is selected, a status field appears to the right, indicating the total number of Kbytes of storage available on the disk.

   > NOTE: Floppy 1 (FD1) refers to the INTERVIEW's left–hand
   > micro–floppy drive; Floppy 2 (FD2) to the right–hand drive. The
   > abbreviation HRD represents the hard disk drive.

2. *Disk name.* When one of the floppy drives is selected, the **Disk Name** field appears. A disk name is optional; however, it provides a useful identification for each disk.

```
**  Disk  Maintenance  **


            Command:           FORMAT  DISK

Disk  Number:  HRD             44472K  Bytes  Available
Drive  Type:   44  Megabytes

     K  Bytes  Reserved  For  Data  Acquisition
```
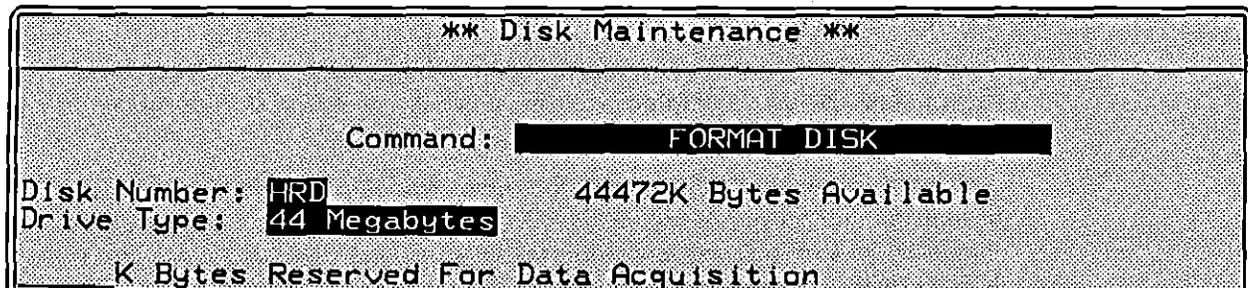
Figure 13-4 Indicate the size of the hard disk installed in your unit.

3. *Drive type.* When you select **Disk Number: HRD**, the **Drive Type** field appears. See Figure 13-4. Select either **20 Meg** or **44 Meg** to indicate the size of your hard disk. If you try to format a 20-Mbyte disk as a 44-Mbyte disk, you will get an error message. If you inadvertently format the 44-Mbyte disk as a 20-Mbyte disk, reformat it back to 44 Mbytes.

4. *Allocate space for data acquisition.* The next menu field requests an entry for the amount of space on the disk which is to be dedicated to the data acquisition tracks. Legal entries in this field are 0 to 1322 for micro-floppies and 0 to 20536 for a 20-Mbyte hard disk. (Higher entries will be accepted, but no additional space will be allocated.) If the field is left blank, no space is allocated for data storage.

For the 44-Mbyte hard disk, valid entries are 11704 through 44064. The minimum amount of space for data acquisition is 11704 (12M). Lower entries or a blank field will be accepted, but no less space will be allocated. This means that the maximum amount of space that can be allocated to the file system is 32768 Kbytes (or 32 Mbytes).

> **NOTE:** The 20-Megabyte hard disk is factory formatted to allocate approximately 5M to data acquisition and 15M to file storage. The 44-Megabyte is already formatted to allocate 12M to data acquisition and 32M to the file system.

The amount of space allocated to data acquisition tracks is subtracted from the total Kbytes available (as listed in the status field on this menu). When disk space is allocated to data acquisition tracks, the amount of space is always rounded upwards to an integral number of cylinders. Remaining Kbytes are automatically allocated to the filing system. At least two cylinders of disk space (36 Kbytes) is always reserved for the file system on floppy disks. On the hard disk, a minimum of eight cylinders (272 Kbytes on the 20-Mbyte disk and 408 Kbytes on the 44-Mbyte hard disk) is required for the file system.

Press ☒ to start formatting. If the disk selected contains data, the warning message "Formatting disk will destroy data" appears at the top of the screen. Press GOAHEAD (F1) to continue the formatting process. Press ABORT if you decide not to format. After you press ☒, you may not abort formatting since the disk has already been altered.

(B) Disk Summary

Press SUMMARY, select the disk you want summarized, and press ☒ for a synopsis of disk contents. The status field (see Figure 13-5) is updated when you press ☒, so that the number of the disk drive being summarized appears between the parentheses, and the name of the disk appears on the line below.

```
                                  ** Disk Maintenance


                        Command:   DISK SUMMARY

Disk Number:  FD1

Disk Allocation Summary Of (FD1)
Disk Name: thirty_min
  25% Data Acquisition Used        362   K Bytes
  44% Data Acquisition Free        646   K Bytes
   1% File System Used              27   K Bytes
  30% File System Free             405   K Bytes
   0% Bad Blocks                     0   K Bytes
```

Figure 13-5   Results of a *DISK SUMMARY* command.

Several lines of disk information follow. The amount of disk space dedicated to data acquisition tracks, the amount of file system space used, and the amount of file space remaining are all reported. Each amount is given as a percentage of total disk space and in Kbytes. Note that the total in the left column always equals 100%, while the total in the right column always is 1440 Kbytes for a floppy diskette. For the hard disk, the total is either 20 Mbytes or 44 Mbytes.

(C) Data Transfer

Use this command (see Figure 13-6) to move data from one storage medium to another. Available media are the following: data–acquisition memory (whether character or bit-image) on a disk; files on a disk; bit-image RAM ("RAM" on the Record Setup menu); or character RAM (the screen buffer). Data transfer is necessary in some cases. For example, data in bit–image RAM, data in the screen buffer, and data saved to a file must be transferred to disk before it may be played back.

> NOTE: Transferring data to disk blocks which contain data or to an existing file will overwrite the previous contents of the disk or file.

```
                            ** Disk Maintenance

                    Command: ▮ DATA TRANSFER ▮

From: DISK    Disk Number: HRD

Start At Block: 0
Number Of Blocks: 100


To: DISK        Disk Number: FD1
Start at: BEGIN
```

Figure 13-6 The source of transferred data may be RAM, disk, or file;
the destination may be disk or file.

Press TRANSFER to display subfields for the command.

1. *From RAM, disk, or file.* The From field allows you to specify the source of
   data to be transferred. When you select RAM, DISK, or FILE, the screen
   repaints. New menu fields are explained at the end of this section.

2. *RAM.* When RAM is selected, you must specify type of RAM and the
   number and location of blocks you want to transfer. See below,
   subsection 6.

3. *Disk.* This selection refers to the data acquisition tracks on disk. When
   DISK is selected, you must specify the disk number and the number and
   location of blocks you want to transfer.

4. *File.* This selection allows you to transfer data out of the filing system.
   When FILE is selected, you must specify the name of the file and the disk
   number on which it resides. Data in a file is not available for later
   playback—it must be transferred onto data acquisition tracks to be played
   back.

5. *Disk number.* Designate the source disk by selecting FD1 (left-hand drive),
   FD2 (right-hand drive), or HRD .

6. *Type.* The first subfield which appears when RAM is selected is Type. You
   must specify BIT IMAGE or CHARBUFFER in the Type field when transferring
   data from RAM.

Bit–image RAM is the RAM that is selected in the **Capture Memory** field on the Record Setup menu. This RAM is 1 Mbyte in the 7500 and the 7700 *TURBO*, and 256 Kbytes in the 7000 and 7200 *TURBO*. (An optional XDRAM board can increase the size of bit–image RAM. See Section 7.)

Character RAM is the 64 Kbyte screen buffer (or "character buffer").

7. *Start at block.* Enter the number of the first block to be transferred from the data source (whether disk or RAM) in the **Start At Block** field. (You can observe the current block number at the top of the display when you are recording data in Run mode.) Valid entries in the **Start At Block** field are 0 to 99999. If you do not enter a value, the value will default to zero. Block 0 means that data transfer will start from the beginning of the data source, regardless of the actual block number. All other entries represent actual block numbers.

   NOTE: It is not necessary to enter leading zeroes in this field. For example, you may enter 10 instead of 00010.

8. *Number of blocks.* In this field, enter the total number of blocks you wish to transfer. Valid entries are 1 to 99999. Again, it is not necessary to enter leading zero's.

9. *To disk or file.* When you transfer data to **DISK**, the data is transferred onto the data acquisition tracks for later playback. Specify the disk by selecting **FD1** (left–hand drive), **FD2** (right–hand drive), or **NEW** (for use when you have only one floppy disk drive available and are transferring data from one disk to another.)

   When you transfer data to a **FILE**, you must indicate the number of the destination disk as well as the file name. (Either relative or full pathname may be given.) Specify the disk by selecting **FD1** (left–hand drive), optional **FD2** (right–hand drive), or **NEW** (for use when you have only one floppy disk drive available and are transferring data from one disk to another.) If the name of an existing file is entered, the contents of the file will be overwritten with new data during the transfer. Data in a file is not available for later direct playback.

10. *Start at.* Specify in this field whether data will be stored on the destination disk starting at the beginning of the disk or file (overwriting any existing data), or whether the transferred data will be appended to the end of existing data.

Once you press ⌷, you may stop the transfer at any point by pressing F8 (ABORT).

(D) Duplicate Disk

If both floppy disk drives are operable, this command allows you to make a copy of full disk contents.

> NOTE: Duplicating the contents of one disk onto another destroys the previous contents of the destination disk.

Press DUPDISK to see subfields for this command. In the **From Disk Number** field (see Figure 13-7), select the drive number for the disk to be copied. Select the disk which will receive the copy in the **To Disk Number** field.

> NOTE: If the disk receiving data is write-protected, the Duplicate command will fail. Otherwise, any data on a receiving floppy disk will be overwritten. Only those files on a receiving hard disk drive *with the same names* as those on the sending disk will be overwritten, but files with new names will be added to those existing on the hard drive.

From time to time, you may need to use the Duplicate Disk command to install new system software on the hard disk of the INTERVIEW 7200 *TURBO*, 7500, or 7700 *TURBO*. (See Section 2.3.)


```
                              ** Disk Maintenance


                    Command:  DUPLICATE DISK

From Disk Number:  FD1

To Disk Number:  FD2
```
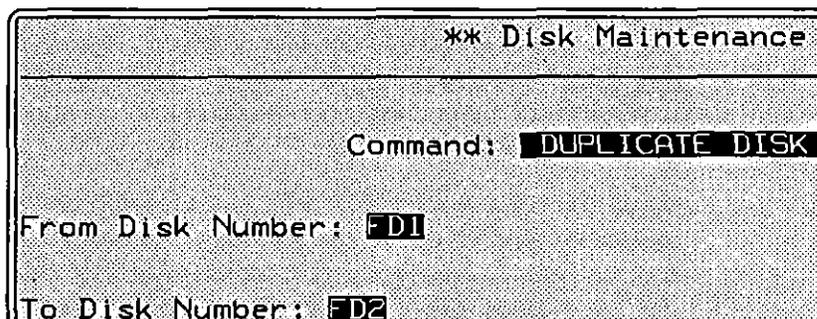
Figure 13-7   Entire disks may be duplicated on the Disk Maintenance menu.

(E) Transferring INTERVIEW 5 Plus, 10 Plus, 15 Plus, or 20 Plus Data to the 7000 Series

The INTERVIEW Transfer command (explained in Section 13.4(F)) allows you to copy files from a disk recorded with an INTERVIEW 5, 10, 15, or 20 Plus onto the hard disk of an INTERVIEW 7200 *TURBO,* 7500, or 7700 *TURBO* (or onto a microfloppy). The INTERVIEW 5/10/15 Plus and 20 Plus Series uses a 3.5 inch double-sided, double-density disk which can be distinguished from the INTERVIEW 7000 Series disk because it has a write-protect/enable window (with a plastic cover) but no second window on the opposite corner.

**High density
indicator
hole appears
on 7000 Series
disks**

**Write-protect
window
(disk protected
if open)**
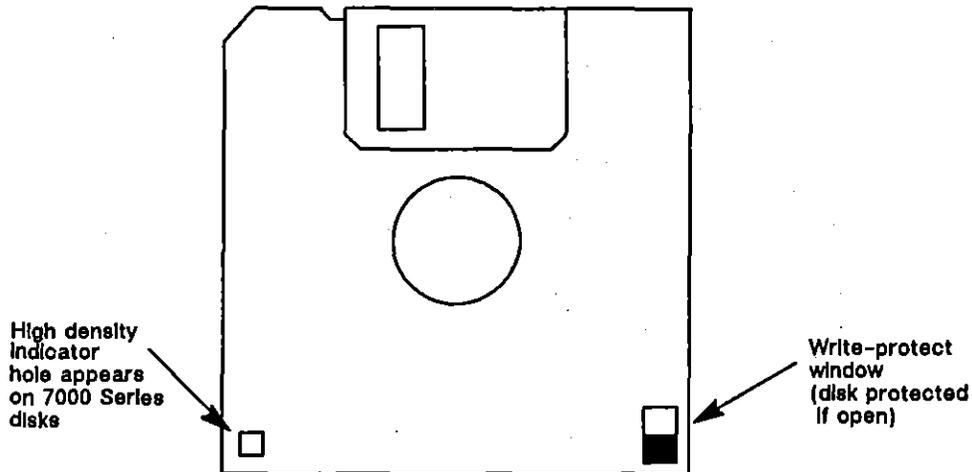
Figure 13-8 The INTERVIEW 7000 Series uses 3.5 inch quad- or high-density,
double-sided microfloppy diskettes. The INTERVIEW 5/10/15 Plus and 20 Plus
uses 3.5 inch double-sided, double-density diskettes which lack the high density
window.

These disks are compatible (that is, they may be *read* by any 7000 Series unit)
if the INTERVIEW 5/10/15 Plus or 20 Plus on which they were recorded has
been reconfigured so that it records to disk in the correct format.

> NOTE: We recommend that you record disks reconfigured for
> the 512 bytes/sector format (Software Version 1.10A or higher).
> If you are communicating with INTERVIEW 5, 10, or 15 Plus
> field units which have not yet been reconfigured for this format
> (still have Software Version 1.00C with old 1024 bytes/sector
> format), we recommend you contact the AR Division for
> instructions on reconfiguring the unit so that data is recorded to
> disk in the proper format.

Programs for the INTERVIEW 5/10/15 Plus and 20 Plus Series may not be
transferred to disk for the INTERVIEW 7000 Series. Furthermore, neither data
nor programs recorded on a INTERVIEW 7000 Series unit can be copied or
read by the INTERVIEW 5/10/15 Plus or 20 Plus Series. This precludes the
storage of data on the 7000 Series for later analysis on the INTERVIEW
5/10/15 Plus or 20 Plus. However, a more sophisticated analysis of this data is
possible when it is played back on the INTERVIEW 7000 Series.

All INTERVIEW 5/10/15 Plus files are transferred as ASCII character data,
regardless of the format in which the data was originally recorded. Because of
the conversion in data format, the size of the file once it is transferred may
increase by as much as 5%.

However, all INTERVIEW 20 Plus files are transferred as the same character data format in which the data was originally recorded. (For example, data recorded on an INTERVIEW 20 Plus in EBCDIC format would be transferred as EBCDIC data.)

The resulting data file may be handled as any other character-oriented data. The only difference is that data originally recorded on the INTERVIEW 5/10/15 Plus or 20 Plus Series does not contain the time and date stamp that normally appears at the upper right of the display screens. The time field in a layered protocol trace, likewise, does not contain the actual time that the data was recorded; rather, it contains information on the relative time between frames. The INTERVIEW 7000 Series stamps the first frame in the trace with the time elapsed since [RUN] was pressed. The time displayed for subsequent frames depends on the delay since the start of Run mode. The time between frames will vary for the same data depending on the playback speed.

> NOTE: Microfloppies configured for 512 bytes/sector have a maximum storage capacity of 691,200 bytes as opposed to the 766,976 bytes of maximum storage available on the older 1024 bytes/sector disk. Maximum recording speed of the 512 bytes/sector disks is 64 Kbps.

Data samples captured on the INTERVIEW 5/10/15 Plus and 20 Plus Series and saved to disk files may be transferred to the INTERVIEW 7000 Series. You must first, however, know the filenames for the recorded data. If no printout accompanies the INTERVIEW 5/10/15 Plus or 20 Plus disk, you may obtain a listing of disk files using the procedure which follows.

1. Install the INTERVIEW 5/10/15 Plus or 20 Plus disk into the INTERVIEW 5, 10, 15, or 20 Plus.

2. Press the Menu key until you see the start-up screen. This screen displays the name of the device in a banner and gives the copyright date and the software version. The prompt above the function keys instructs you to select an instrument. Press the function key indicated for more instruments.

3. A new set of function key labels appears on the screen. Press the function key indicated for Disk Utilities.

4. *For INTERVIEW 5/10/15 Plus:* The screen repaints to reveal file listings for all files stored on the disk. As shown in Figure 13-9, for the INTERVIEW 5/10/15 Plus there are four columns, labeled at the top of the screen. The first column tells the instrument type for the file named on the same line. The second column tells whether it is a data file (D) or a program file (P). The name of the file appears in the third column. The size of the file is listed in the final column.

Figure 13-9 INTERVIEW 5/10/15 Plus disk file directory.

> NOTE: Data samples which have been saved as a memory buffer rather than a file are not recorded on the microfloppy, will not appear in the file listings, and cannot be transferred to the INTERVIEW 7000 Series.
>
> If the "–CURRENT" file is to be transferred, we recommend renaming it. In the event that another file is saved before the transfer, that new file will overwrite the present "–CURRENT" file. Select the file to be renamed and press the Rename function key; enter a new name for the file as the display directs.

5. *For INTERVIEW 20 Plus:* The screen repaints to reveal file listings for all files stored on the disk. For the INTERVIEW 20 Plus, as shown in Figure 13-10, there are three columns. The first column lists the instrument type for the file named on the same line and the size of the file is listed in the final column. The second column contains three pieces of information:

<center>A|02|–CURRENT</center>

"A" – the "device" in which the file is stored (A – RAM, B – Floppy, C and D – ROM disks),

"02" – the type of file (00 and 01 – program names, 02 – DLM capture buffers, 03 – VT100 capture buffers, 04 – DVOM capture buffers, PR – printer files), and

"–CURRENT" – the name of the file.

```
╔══════════════════════════════════════════╗
║          SYSTEM  DIRECTORY               ║
╠══════════════════════════════════════════╣
║ SERT         A:02-CURRENT            33  ║
║ DLM          A:00-SAVED              55  ║
║                                          ║
║                                          ║
║                                          ║
║                                          ║
║ Press A,B,C or D to sel Device.          ║
║ ═F1═══════F2═══════F3═══════F4═══F5═══F6═ ║
║ ┌Re-──┐┌De-──┐┌Copy─┐┌─────┐┌─────┐┌Dev─┐║
║ │name │││lete │││     ││     ││     │││Pars│║
╚══════════════════════════════════════════╝
```
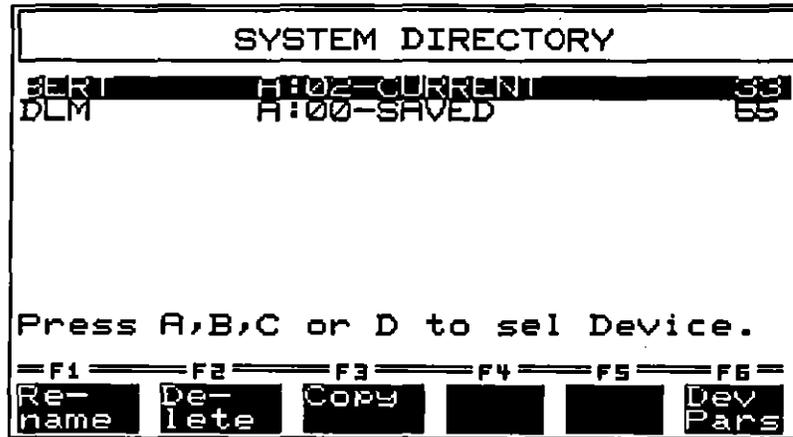
Figure 13-10 INTERVIEW 20 Plus disk System (file) Directory.

(F) INTERVIEW Transfer

To transfer data from a Series 1 INTERVIEW 5/10/15 Plus disk to the INTERVIEW 7000 Series, press the function key labeled INT 10; to transfer data from an INTERVIEW 20 Plus or a Series 2 INTERVIEW 5/10/15/20 Plus disk to the INTERVIEW 7000 Series unit, press the function key labeled INT 20. These keys appear when the cursor is at the top of the Disk Maintenance Screen. The screen then repaints to display the fields shown in Figure 13-11; the Command field will display INTERVIEW 10 PLUS TRANSFER or INTERVIEW 20 PLUS TRANSFER for the selection made.

Install the microfloppy from the INTERVIEW 5/10/15 Plus or 20 Plus Series into either of the floppy disk drives. If you are copying the files to another floppy, install a formatted INTERVIEW 7000 Series microfloppy into the other floppy disk drive. (The two types of disk can be distinguished before they are installed as described in Section 13.4(E).)

1. *From.* In this field, select the drive (FLOPPY1 or FLOPPY2) into which you have inserted the disk from the INTERVIEW 5/10/15 Plus or 20 Plus.

2. *Instrument.* This field indicates the type of interface used to record data on the INTERVIEW 5, 10, 15, or 20 Plus. Data from each of the instruments is recorded in a different format, and this must be taken into account in the transfer. There are six possible selections in the Instrument field. These are DLM (data line monitor), TERM (asynchronous terminal), X25 MON (X.25 protocol monitor), SNA MON (SNA protocol monitor), BAUDOT (Baudot protocol monitor), and DDCMP (DDCMP protocol monitor).

```
┌─────────────────────────────────────────────────────────────────────┐
│                    ** Disk Maintenance **                           │
├─────────────────────────────────────────────────────────────────────┤
│                                                                       │
│             Command:  ▌INTERVIEW 10 PLUS TRANSFER▐                    │
│                                                                       │
│ From: ▌FD1▐       Instrument:  ▌    DLM    ▐                          │
│ File: _____                                          │
│ To: ▌FD1▐                                                            │
│                                                                       │
│ File: _____                                          │
│                                                                       │
│                                                                       │
│                        Depress ▌XEQ▐ Key To Execute Command          │
│ Select Source Disk                                                    │
│ ▌ F 1 ▐  ▌ F 2 ▐  ▌ F 3 ▐  ▌ F 4 ▐  ▌ F 5 ▐  ▌ F 6 ▐  ▌ F 7 ▐  ▌ F 8 ▐│
│ FLOPPY1 FLOPPY2                                                        │
└─────────────────────────────────────────────────────────────────────┘
```

Figure 13-11 Use the Interview Transfer command to transfer data from an INTERVIEW 5/10/15 Plus disk to INTERVIEW 7000 Series disk files.

It is possible to determine from the file listings on the INTERVIEW 5, 10, 15, or 20 Plus what instrument was used to record the data. See Section 13.4(E) for instructions on accessing these file listings.

Once the data is transferred from an INTERVIEW 5/10/15 Plus Series unit, it is stored in the INTERVIEW 7000 Series as ASCII character data, regardless of the instrument on which it was recorded.

However, all INTERVIEW 20 Plus files are transferred as the same character data format in which the data was originally recorded. (For example, data recorded on an INTERVIEW 20 Plus in EBCDIC format would be transferred as EBCDIC data.)

3. *File.* Enter the name of the source file from the INTERVIEW 5, 10, 15, or 20 Plus. The filename for the last data sample collected is -CURRENT (unless the file has intentionally been renamed). Enter this filename exactly as shown. The initial hyphen is part of the name. Other filenames are listed in the disk file directory of the INTERVIEW 5, 10, 15, or 20 Plus. Obtain directory listings as described in Section 13.4(E).

Only data files can be transferred to the units in the INTERVIEW 7000 Series. For the INTERVIEW 5/10/15 Plus, these files are indicated by the letter D in the second column in the file directory. Do not attempt to transfer program files (marked P).

For the INTERVIEW 20 Plus, these files are indicated by the numbers "02" or "03" after the colon in the second field of the second column on the system (file) directory. Do not attempt to transfer other files. For an explanation on how to distinguish the data files which can be transferred on an INTERVIEW 20 Plus from other types of files, see Section 13.4(E)5.

INTERVIEW 5/10/15 Plus and 20 Plus filenames are always UPPERCASE single words (rather than a full pathname) and must be entered as such in the File field in the INTERVIEW 7000 Series.

4. *To.* Indicate in this field the destination drive to which the data is to be transferred. You may transfer data to either of the floppy disk drives (FD1 or FD2) or to the hard disk (HRD).

5. *File.* Enter the destination filename in the second File field. You may enter either a full pathname or a pathname relative to the current directory. For a description of how pathnames work in the INTERVIEW 7000 Series refer to Section 14.

None of the information from the INTERVIEW 5/10/15 Plus file listings is transferred with the file when it is copied into the INTERVIEW 7000 Series. It is important as a result to use descriptive filenames (or pathnames) to tag your data samples properly.

6. *XEQ.* When all entries on the screen are correct, press ⌧. The message "Transfer In Progress" appears on the second line of the screen to indicate that the file is being copied. To abort the transfer while it is in progress, press F8.

The message "Transfer Complete" is posted at the top of the screen when the process is complete. If there is a problem with the transfer, an error message appears in the same area. Refer to Appendix A for an explanation of error messages.

Once the transfer is complete, the name of the file, the file type CHDAT (for character data), the size of the copied file (which is likely to be somewhat larger than the original file), and the date and time of the transfer are recorded in the 7000 Series directory. If the file has been placed in a directory other than the current directory, you must use the Change Directory command to find it in the listings. This command and the File Maintenance screen are described in Section 14.

Use the regular Data Transfer command to move the data into the data acquisition tracks of the disk for playback and analysis. The Data Transfer command is discussed in Section 13.4(C). Playback is discussed in Section 5.2.

14 File Management

File Maintenance

Command: LOAD   Push ⌊XEQ⌋ To Perform Command
Drive: FD1 Name:_____

Current Directory:

Select File Maintenance Command:

F1	F2	F3	F4	F5	F6	F7	F8
LOAD	SAVE	CHNGDIR	MAKEDIR	COPY	VIEW	PRINT	MORE

Select Type Of
File To Save:
PROGRAM SETUP OBJECT LPRGRM

Select Drive:
FLOPPY1 FLOPPY2 HRD DSK

Enter Pathname Of File To
Save: _____

Select Drive: FLOPPY 1 FLOPPY 2 HRD DSK
Enter Pathname Of File: _____

Select Drive: FLOPPY 1 FLOPPY 2 HRD DSK
Enter Directory Pathname: _____

Select Drive: FLOPPY 1 FLOPPY 2 HRD DSK
Enter Pathname Of File: _____

Select Drive: FLOPPY 1 FLOPPY 2 HRD DSK
Enter Pathname of File: _____
Paginate Output? YES NO

Select Source Drive: FLOPPY1 FLOPPY 2 HRD DSK
Enter Source Pathname: _____
Select Destination Drive: FLOPPY1 FLOPPY2 HRD DSK NEWDISK
Enter Destination Pathname: _____

RENAME ENABLE PROTECT   DELETE   COMPILE   MORE

Select Drive: FLOPPY1 FLOPPY2 HRD DSK
Enter Pathname Of File To Rename: _____
Enter New File Name: _____

Select Drive: FLOPPY 1 FLOPPY 2 HRD DSK
Enter Pathname Of File: _____

Select Drive: FLOPPY 1 FLOPPY 2 HRD DSK
Enter Pathname Of File: _____

Select Source of Code to Compile: FILE SPRDSHT

Select Source Drive: FLOPPY1 FLOPPY 2 HRD DSK
Enter Source Pathname: _____

Select Drive: FLOPPY 1 FLOPPY 2 HRD DSK
Enter Pathname Of File or Directory: _____

Select Destination Drive: FLOPPY1 FLOPPY2 HRD DSK
Enter Destination Pathname: _____

Figure 14-1 File Maintenance menu.

14 File Management

The filing system is a set of files and directories, grouped by disk, created and managed by the user. Files may contain captured line data, setups, protocol package data, entire test programs, or text. Files are identified and accessed by name. The file's location in the system is indicated by its full or relative pathname, as explained later in this section.

All file management functions are performed from the File Maintenance screen (FMAINT; see Figure 14-1 for menu options and Figure 14-2 for default screen). The menu options are described at the end of this section. These functions include copying files, loading and saving files, compiling files or the contents of the Protocol Spreadsheet, permanently deleting files, viewing the contents of certain files, write-protecting or write-enabling files, printing files, and grouping files into directories.

```
                        ** File Maintenance **
Command:         LOAD               Push  XEQ  To Perform Command
Drive:  FD1  Name: _____

Current Directory:    HRD/usr
   (filename)          (type)   (write-protect)  (size)          (date/time)




















Select Source Drive
  F 1       F 2       F 3       F 4       F 5       F 6       F 7       F 8
FLOPPY1  FLOPPY2  HRD  DSK
```

Figure 14-2 Default File Maintenance screen.

14.1 Loading and Saving Files

The File Maintenance screen is an important interface between the filing system and the INTERVIEW's data analysis functions. All INTERVIEW test programs are loaded from the File Maintenance screen. Newly created or modified tests are saved on this menu as well.

NOTES:

1. READ and WRITE commands appear as editing functions on the Protocol
    Spreadsheet. These commands, described in Section 29, load or save
    only Protocol Spreadsheet contents and do not interfere with the
    contents of other menus.

2. Protocol packages, although part of the filing system, are loaded from
    the Layer Setup screen. For a description of this menu, see Section 8.

14.2 Orienting Yourself in the Filing System

The INTERVIEW's filing system is a simple tree-structured filing system similar to
the UNIX™ filing system. (UNIX is a trademark of AT&T Bell Labs.) Each disk
has its own hierarchy. At the top of the tree is the "Root" directory, represented by
the single slash (/). When new, the System disk contains this directory and two
others, /sys and /usr. These are subdirectories of the Root directory; that is, they are
one step below the top of the hierarchy. (The slash at the beginning of the name
locates the directory with reference to the Root directory. Naming conventions for
directories will be fully explained later in this section.)

At power-up, the operating system automatically moves you into the /usr directory of
the disk from which the system software was loaded. System software is loaded from
floppy drive 1 if a system disk is inserted; by next preference, it is loaded from
floppy drive 2; and, if no other system software is found and a hard disk is present,
it is loaded from the hard disk.

(A) Directories

Directories may contain both files and other directories. Once you are in a new
directory, the files and subdirectories it contains are listed in the area at the
bottom of the File Maintenance screen. Directories are indicated by "DIR" in
the second column (see Figure 14-3).

1. *How to move through the directories.* You may use the CHNGDIR (Change
    Directory) command to move into any of these directories and view their
    contents. As you work within the filing system, you can use this command
    to change levels and directories. However, you can never be in more than
    one working directory at a time. This working directory is referred to as the
    "current directory." The current directory is always posted on the fourth
    line of the File Maintenance screen.

    To move from the /usr directory of the boot disk up to the Root directory,
    use the Change Directory command and enter the pathname /. To move
    into the /sys directory, enter the pathname /sys. There will be no other
    directories on a new system disk; you must create new directories yourself.

To move from disk to disk, use the Change Directory command and select the correct disk drive in the highlighted window below the command line. In the entry field provided, enter slash (/) to move to the Root directory of the new disk, or enter the absolute pathname of the directory you want. Absolute pathnames are described in the next subsection.

2. *How to create new directories.* New directories are created using the MAKEDIR (Make Directory) command on this menu. A maximum 256 files and/or directories may be created on one microfloppy diskette. The maximum for hard disk is 4,096. Directories follow the same naming conventions as files. These conventions are explained in the following paragraphs. The pathname you enter as you make a directory indicates where you wish to locate the directory in the filing hierarchy. Pathnames are explained later in this section.

```
********* File  Maintenance **

Command:        LOAD              Push XEQ To Perform Command
Drive: FD1 Name: _____

Current Directory:   HRD/usr
BSC                   DIR           167        12/03/86   12:12
BSC_Test_Data         BITIM      114371        01/30/87   12:30
Emul_3270_Term        PRGM        12620        11/17/86   11:27
Line_Eff_3270         PRGM         4438        11/09/86   17:00
SNA_Bind              PRGM    W     3107        09/06/86   09:11
SNA_Sessions          PRGM    W    10700        09/30/86   10:22
Test_3270_Term        PRGM         9722        11/10/86   07:12
X25_Cert              DIR           213        03/14/87   10:25
X25_Cert_desc         ASCII        1020        03/16/87   19:12
X25_Frm_Lev           SETUP        2504        02/02/87   10:25
X25_Pkt_Size          PRGM         9380        02/22/87   14:32

Select File Maintenance Command
  F 1      F 2      F 3      F 4      F 5      F 6      F 7      F 8
 LOAD     SAVE   CHNGDIR  MAKEDIR    COPY     VIEW    PRINT    MORE
```

Figure 14-3 Contents of the current directory are listed on the File Maintenance Screen.

(B) Absolute Pathnames

A pathname identifies the path through the directory structure which terminates at a particular file or directory. Each file and directory has an absolute pathname and a relative pathname.

An absolute pathname always begins with a slash. This indicates the path from the "root," or starting point, of the filing system. The directories and/or file it "owns" are listed to the right, each separated from the next higher level by a slash.

The absolute pathname is useful when you aren't sure of your current location in the filing system. Using the absolute pathname always alerts the operating system of the precise location of the directory or file you specify in any command.

(C) Relative Pathnames of Files and Directories

The relative pathname of a file or directory is the route to the file or directory from the current directory. The relative pathname may be as simple as a one-word filename. (It never begins with a slash.) If, for example, your current directory (*dir_c*) contains a file (*your.file*), then the relative pathname of the file is, simply, *your.file*. Now suppose that you move to a different current directory (*dir_b*) which contains *dir_c* as a subdirectory. The same file would have a different relative pathname: *dir_c/your.file*.

Each time you move up a directory level, the relative pathname gains a new subdirectory name as a component. The new component is always separated from its subdirectory (or file) by a slash. The relative pathname of this same file when you are working in the */usr* directory might, for example, be *dir_a/dir_b/dir_c/your.file*. The absolute pathname for the same file would be */usr/dir_a/dir_b/dir_c/your.file*.

(D) Files

Files are the basic elements of the filing system. Files can be identified in the Type field of the Directory Listings. Any type other than "DIR" is a file.

The INTERVIEW files named in the directory listings on the File Maintenance screen are created in a variety of ways. The files in the */sys* directory, for example, are placed on each system disk at the factory. This directory contains data essential to the operating system. It is not advisable to store user files in the */sys* directory.

The */usr* directory, also created on each disk at the factory, is intended for the storage of files (and directories) which you create.

1. *Program files.* Program files, which contain the configuration of all INTERVIEW menus and the Protocol Spreadsheet contents, are created when you use the SAVE command on this menu.

2. *Setup files.* Use the SAVE command on the File Maintenance screen to create Setup files. Setup files contain a partial set of configured menus.

3. *Object files.* Object files, which contain the configured Setup menus, the Layer packages, and the object-code compilation of the Trigger menus and the Protocol Spreadsheet, are created when you use the SAVE command on the File Maintenance menu.

4. *Linkable–object files.* Use the Compile command on the File Maintenance menu to create linkable–object (LOBJ) files. Linkable–object files may contain the object–code compilation of standard C code. The compiled C code in linkable–object files usually contains the definitions of user–created routines.

   Linkable–object (LOBJ) files may also contain the compiled contents of the Protocol Spreadsheet, different from object (OBJ) files which additionally contain all menu configurations.

5. *Linkable–program files.* Use the Save command on the File Maintenance menu to create linkable–program (LPGM) files. Linkable–program files contain all of the setup menus of program (PRGM) files except for Triggers and source–code Spreadsheet. In addition to the menus, LPGM files contain the linkable–object code compilation of the Protocol Spreadsheet. When you load an LPGM file and go to the Protocol Spreadsheet, all you see is an OBJECT block identifier that references the pathname of the LPGM file.

   Once a linkable–program file is loaded (via the File Maintenance Load command), you may modify the setup menus and rerun or save the program. Since the spreadsheet program has already been compiled, changes to the setup menus do not cause a lengthy recompile time.

6. *Protocol Spreadsheet files.* Use the WRITE command provided by the spreadsheet editor (described in Section 29), specify a filename, and press ⬚ or ⬚ to save only the contents of the spreadsheet. The file which results is listed in the File Maintenance directory as type ASCII; however, when you want to use the file again, it should be read in by the spreadsheet editor (rather than loaded from the File Maintenance screen.)

7. *Data files.* Use the Data Transfer command on the Disk Maintenance screen to store data from disk into a file. See Section 13.4(C). The files which result appear in the directory listings on the File Maintenance screen. Before you replay data files, you must transfer them back onto the data acquisition tracks of a disk; a file is not a valid Source of data on the Line Setup menu. Do not attempt to load data files from the File Maintenance screen.

(E) Naming Conventions for Files and Directories

There are a few simple rules to keep in mind when naming files. The maximum length of any component is 12 characters. Legal characters for filenames are letters; numbers (0–9); and the symbols dash (–), underscore (_), dollar sign ($), and period (.). Filenames must start with a letter or a period.

Upper and lower case letters may be used. Filenames are case-sensitive; that is, the pattern of upper and lower case letters in an existing name must be repeated exactly any time that file is referenced.

Filenames may include extensions for convenience, but the system attaches no special meaning to the extension. When you refer to a file with an extension, you must include the extension in the filename.

Filenames cannot be duplicated within the same directory. If, for example, there is already a file in your current directory called *unifile* and you save a newly created file to the name *unifile*, then the old file is destroyed.

Single periods (.) and double periods (..) have special uses when referring to files or directories. Their uses are described in the paragraphs which follow.

(F) Use of Periods in Pathnames

Single periods and double periods, when used alone as file components, have special meanings. A single period (.) always represents the current directory. A double period (..) always represents the parent directory; that is, the directory immediately above.

The double period (..) is a useful abbreviation for defining pathnames. A common use for the component would be to change the current directory to the parent directory. In this case, you don't need to use the name of the parent directory. Just select the Change Directory command and enter .. as the pathname to the new current directory. String a series of these together, separated by slashes (for example, Change Directory ../../..) to move up the file tree.

Study the file system in Figure 14-4 to see how the following points apply.

1. The relative pathname of *your.file* is *dir_c/your.file*. Its absolute pathname is */usr/dir_a/dir_b/dir_c/your.file*.

2. The relative pathname of *other.file* is *dir_d/other.file*. Its absolute pathname is */usr/dir_a/dir_b/dir_d/other.file*.

3. To move up to the */usr* directory from the current directory, enter the pathname ../.. when you use the Change Directory command.

4. To move from the current directory (*dir_b*) to *dir_e*, use the Change Directory command and enter this pathname to the new directory: *../dir_e*. (This is simpler than using the absolute pathname, */usr/dir_a/dir_e*.)

HRD
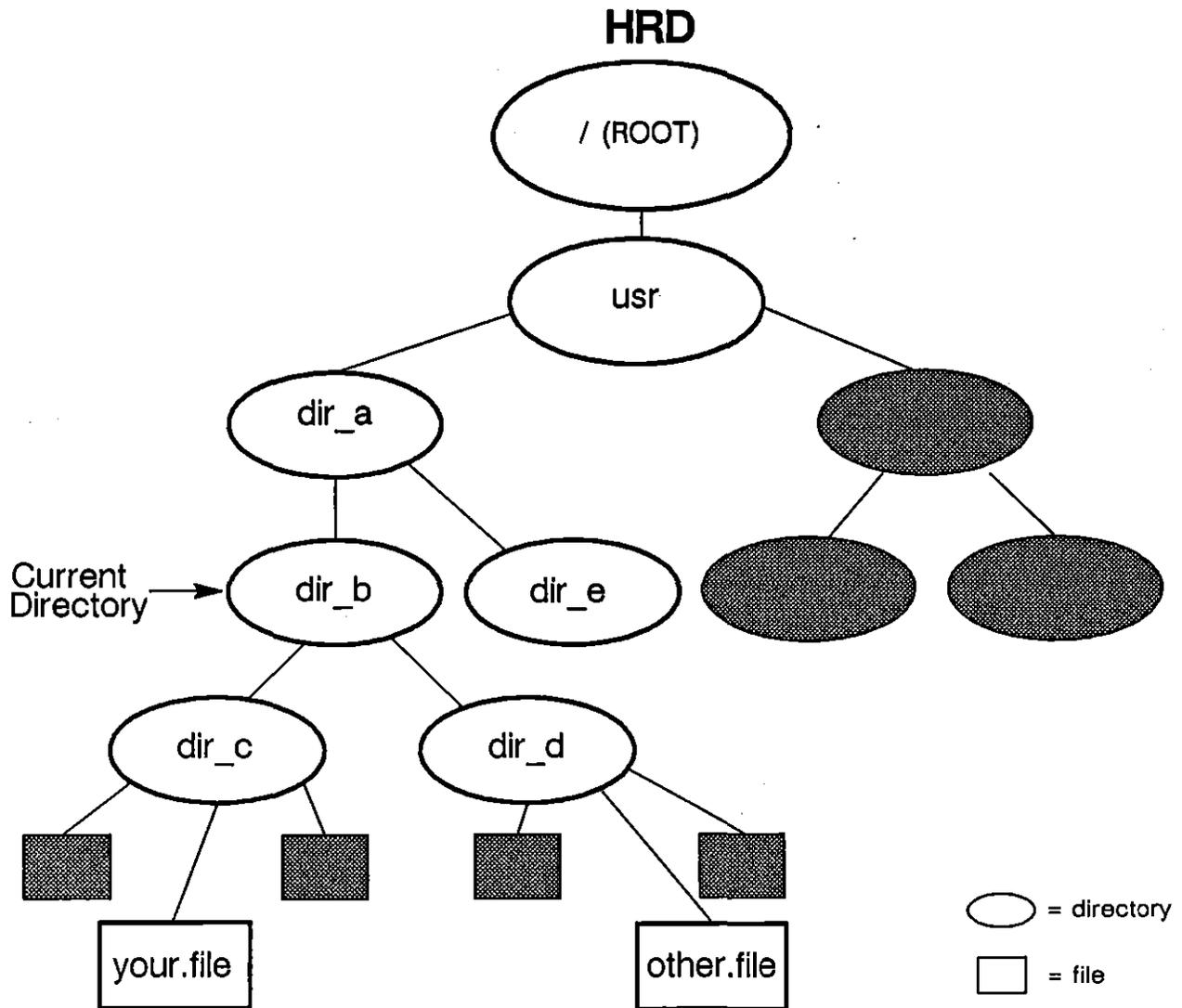
Figure 14-4 The INTERVIEW has a hierarchical filing system.

14.3   The File Maintenance Screen

(A) The Top of the Screen

Twelve commands can be executed from the File Maintenance screen (see Figure 14-1 for a full set of menu fields). There are two alternate banks of commands. Use the MORE function key to switch from bank to bank (see Figure 14-5 and Figure 14-6). When you press the function key to select a particular command, the screen repaints, and a set of unique menu fields appears. The selected command always appears on the top line of the menu.

1. *Current drive.* At the top of the screen, just below the **Command** field, the name of the current disk is given (see Figure 14-7). The files displayed in the directory listings on the screen reside on the disk named in this area.

   NOTE: The current disk at power-up is the disk from which the INTERVIEW is initialized. If all three drives are present, the INTERVIEW checks FD1, then FD2, and finally HRD for system initialization software and boots from the first system disk it finds.

Select File Maintenance Command:

F 1	F 2	F 3	F 4	F 5	F 6	F 7	F 8
LOAD	SAVE	CHNGDIR	MAKEDIR	COPY	VIEW	PRINT	MORE

Figure 14-5 Press *MORE* to display the alternate bank of function keys.

Select File Maintenance Command:

F 1	F 2	F 3	F 4	F 5	F 6	F 7	F 8
RENAME	ENABLE	PROTECT	DELETE	COMPILE			MORE
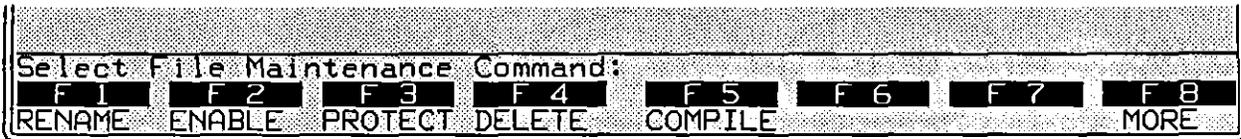
Figure 14-6 Alternate bank of function keys.

2. *Name field.* Every command requires at least one filename and provides a field in the menu area for filename entry (see Figure 14-7) where you MAY enter the name of the file to be acted upon. The file's absolute or relative pathname can be entered. If you enter the filename, you must type it exactly as it appears in the directory listings.

   NOTE: There are several ways to specify the file or files which are to be acted upon. Read Section 14.3(C) before executing any command.

   Study the directory listings if you are uncertain of the filename. If you require more information on a file, use the View command to see the contents of the file.

** File Maintena

Command: WRITE ENABLE
Drive: FD1   Name: _____
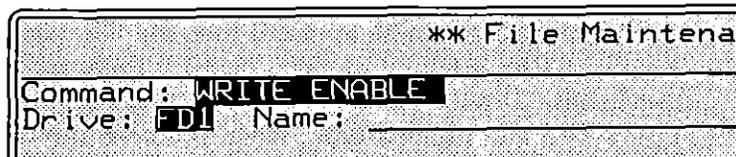
Figure 14-7 The name of the current disk is selected in the *Drive* field.

(B) Directory Listings

The name of the current directory is listed in a field at the top of the screen. The contents of the current directory are listed in a 12-line field in the center of the menu. Six columns of information appear for each file (see Figure 14-8). The (relative) filename is given in the first column.

The Type field to the right defines the contents of the file. All types that may appear in this column are defined in Table 14-1. When a file is write-protected, the letter "W" appears immediately to the right of the Type column.

The size of the file (in bytes) is given in the next column. The date and time that the file was last modified appear in the two far-right columns.

Figure 14-8 Current directory listings. Data types are listed in the column to the right of the file or directory name.

1. *Moving through directory listings.* The contents of the current directory are displayed on the File Maintenance screen.

   More than 12 lines of information may be available for the directory. To display additional lines, position the cursor on the last line of the listings and press ⏷. (This will display new lines one at a time.)

   Press ⇧ and ⏷ at the same time to move to the end of the listings. Press ⬛ to display the next 12 lines of information. Position the cursor on the first line and press ⏶ to expose previous lines one at a time. Press ⬛ to display the previous 12 lines.

Press ⊞ and ⊞ to move to the top of the listings.

To see the listings for another directory, you must use the Change Directory command.

Table 14-1
File Types

Type	Meaning	Comments
PRGM	Program	Full set of configured screens.
SETUP	Setup	Subset of five configured Setup screens, in particular, excludes Trigger Setup screens, Layer Setup screen, and Protocol Spreadsheet.
OBJ	Object	Five configured Setup screens, the Layer packages, and the object-code compilation of the Trigger menus and the Protocol Spreadsheet
LOBJ	Linkable Object	Object-code compilation of a standard C file or of the contents of the Protocol Spreadsheet. C files may be generated via the WRITE/U (editor)command on the Protocol Spreadsheet.
LPGM	Linkable Program	Setup menus of a PRGM file (except for Triggers and source code of spreadsheet) in addition to the linkable-object code compilation of the Protocol Spreadsheet. LPGM files are compatible between units with different hardware and/or software configurations.
BITIM	Recorded data	Bit-image data saved for reanalysis. May be reformatted and rechecked for BCC error.
CHDAT	Recorded data	Character data saved for reanalysis. This data has already been formatted and checked for BCC error (if received block-checking enabled) and may not be reformatted or rechecked.
ASCII	Text	Text file generated by user on Protocol Spreadsheet screen.
DIR	Directory	A directory, potentially containing files and subdirectories, which is part of the structured file system.
SYS	System files and internal INTERVIEW files	files generated by AR Division, including Personality Packages.

(C) Selecting Files

There are several ways in which you can designate files to be acted upon by a chosen command.

1. *Name field.* The first means of selecting a file is to enter its name in the **Name** field at the top of the menu.

   > NOTE: The cursor must remain in the menu area (see Figure 14-8) in order for the command to operate on the named file.

2. *Cursor location.* You may designate a single file to be acted on by moving the cursor into the directory listings and positioning it over the desired file. The file name will be highlighted.

   > NOTE: When the cursor is located in the Directory Listings, the highlighted file will be acted upon by any command executed. Any file named in the **Name** field will NOT be acted upon.

   If you have selected a file with the cursor, but the file–maintenance command shown at the top of the screen is not the one you want, press ⌸. The cursor will return automatically to the **Command** field. Choose the appropriate command and press ⌸ again. The cursor will return to its previous location, highlighting the selected file.

3. *Marking files.* For certain commands, the 🔳 key can be used to select files on which you want the command to operate. To mark a file, locate the cursor over it and press 🔳. Once a file is marked, you need not fill in the **Name** field for the command.

   The next command executed will operate on the marked file or files. Even if there is a filename in the **Name** field, marked files (and NOT the entered file) will be acted upon.

   Marked files also take precedence over the file at the cursor location. That is, if files are marked, they will be acted upon by the command, but the file at the cursor location will not be acted upon.

   With one exception, 🔳 works only with commands which are used to operate on multiple files simultaneously. These commands are Copy, Delete, Write–Protect, Write–Enable, and Print. The exception is the Compile command. In this case, only a single file should be marked. If you mark more than one file for compiling, the following error message will be displayed: *"Too many source files selected."*

4. *Unmarking a file.* 🔳 is an alternate action key. To deselect a marked file, locate the cursor next to it and press 🔳 again.

   Once the command is executed, the file is no longer marked. Marked files are no longer marked if you leave the File Maintenance screen.

(D) Executing Commands

To execute any of the 12 commands, make sure that all entries are correct. Then press ⌷. Status messages will inform you of any errors. Refer to Appendix A for an explanation of error messages.

(E) Load

For fast access to this command, press ⌷ as an alternative to accessing the File Maintenance screen with function keys. Use this command to load a working copy of a file from disk into the internal memory of the INTERVIEW. The Load command is frequently used to load complete programs into the INTERVIEW in preparation for running a test. Any program or setup file you wish to modify must first be loaded.

Only program, setup, object (OBJ), or linkable-program (LPGM) files can be loaded with this command.

- Program files are a full set of configured menus, including the Layer Setup screen, Trigger Setup screens, and the Protocol Spreadsheet.

- Setup files are a smaller set of configured menus which includes only the five Setup screens: Line Setup, Interface Control, BCC Control, Front-End Buffer Setup, and Bit Error Rate Test Setup.

- Object files are the configured Setup menus, the Layer packages, and the object-code compilation of the Trigger menus and the Protocol Spreadsheet.

- Linkable-program (LPGM) files contain all of the setup menus of program (PRGM) files except for Triggers and source-code Spreadsheet. In addition to the menus, LPGM files contain the linkable-object code compilation of the Protocol Spreadsheet. When you load an LPGM file and go to the Protocol Spreadsheet, all you see is an OBJECT block identifier that references the pathname of the LPGM file. Although it makes no difference from which drive you load a linkable-program file, in order for the program to run, the file must remain accessible on that same disk drive.

  Once a linkable-program file is loaded, you may modify the setup menus and rerun or save the program. Since the spreadsheet program has already been compiled, changes to the setup menus do not cause a lengthy recompile time.

  NOTE: To successfully execute the File Maintenance Copy command on linkable-program files, you must have software revision 8.00 (or later). LPGM is an unknown file type to earlier software revisions.

You must specify the disk on which the file you are loading resides and the (relative or absolute) pathname of the file before executing the load command. The simplest means of loading a file from the current directory is to place the cursor over the filename in the directory listings and press ⌷. Cursor selection overrides any entries that may appear at the top of the menu.

NOTES:

1. Remember that loading a program or setup overwrites the program or setup already in the INTERVIEW. Save the resident program or setup if you wish to use it later, and then load another file.

2. Loading an object file allows you to enter Run mode without recompiling, unless you make substantive changes (i.e., changes in fields not listed in Table 2-1).

3. The spreadsheet portion of a program (when saved via the Protocol Spreadsheet WRITE editor command) can be loaded via the READ command without overwriting the contents of other menus. See Section 29 for an explanation of the READ and WRITE commands.

4. Protocol layer setups are loaded from the Layer Setup screen (see Section 8). They may also be loaded along with a program, linkable–program, or object file.

5. Data files are not "loaded" from the File Maintenance screen. Instead, see Section 13.4(C), Data Transfer.

6. Linkable–object (LOBJ) files are not loaded from the File Maintenance screen. Depending on the file's contents, use either the OBJECT block–identifier or the *#pragma object* preprocessor directive to access the compiled C code in an LOBJ file. Refer to Sections 27.4 and 59.4.

7. You cannot load the Printer Setup file (*/sys/print_setup*) from the File Maintenance screen. It is loaded automatically during boot–up. See Section 2.1(B).

(F) Save

For fast access of this command, press ⌷ as an alternative to accessing the File Maintenance screen with function keys. Use this command to preserve a newly created program, setup, or object file or to retain any changes you have just made to an existing file.

Before executing this command, you must select the type of file to be saved. Program, setup, object (OBJ), and linkable–program (LPRGRM) are the only options on this screen.

- A setup is a set of five configured menus: Line Setup, Interface Control, BCC Control, FEB Setup, and BERT Setup.

- A program contains all menus, including the Layer Setup screens, Trigger Setup screens, and the contents of the Protocol Spreadsheet.

- An object contains the configured Setup menus, the Layer packages, and the object-code compilation of the Trigger menus and the Protocol Spreadsheet. If you have not compiled the program prior to saving the object, the compilation occurs as part of the SAVE process.

- Linkable-program (LPGM) files contain all of the menus of program (PRGM) files except for Triggers and source-code spreadsheet. In addition to the menus, LPGM files contain the object-code compilation of the Protocol Spreadsheet. The compilation occurs as part of the SAVE process.

     NOTE: To successfully execute the File Maintenance Copy command on linkable-program files, you must have software revision 8.00 (or later). LPGM is an unknown file type to earlier software revisions.

Before executing the command, you must also select the drive to which you wish to save the file, and you must enter the pathname to the file you are saving. If you are saving to a filename which already exists in the current directory, you may indicate the file by placing the cursor over its name in the directory listings before pressing [ɪɪo]. Cursor selection of a file overrides any entries which may appear at the top of the menu.

You cannot save to a directory which does not already exist. First, create the directory with the Make Directory command.

Press [ɪɪo]. During the Save operation, status messages are posted at the top of the File Maintenance screen. For a diagnostic message about errors that prevent compilation of OBJ or LPGM files, press [ᴘʀᴏɢʀᴀᴍ], SPDSHT, [ᴇᴅɪᴛ], GO-ERR. Press GO-ERR again for a message about the next error. Continue until no more errors are detected.

You may abort the Save procedure by pressing the ABORT softkey or [ᴘʀᴏɢʀᴀᴍ]. Note, however, that if the destination file is an existing file, it may have been partially overwritten.

NOTES:

1. You may use the Save command to create a new set of default values for all menus. If you create a file called */usr/default* on the initialization disk, all menus will be set to your saved selections when the INTERVIEW boots from that disk. See Section 2.2(C) for a description of this procedure. See Section 13.1 for disk selection at boot-up.

2. If you only wish to save the contents of the spreadsheet, use the Protocol Spreadsheet WRITE command (see Section 29). Or use the File Maintenance Compile command to save the compiled object–code version of the contents of the spreadsheet. See Section 14.3(P).

3. Saving an *object* or *linkable–program* file requires a considerable amount of disk space and should be reserved for frequently used tests with long compilation times. (The program file for a test may occupy only 5320 bytes, while the object file for the same test occupies 109894 bytes.)

4. Preserve a copy of the source code (the program version) of a test as well as the OBJ or LPGM version. The program code is more *versatile* than the OBJ file code: in subsequent software revisions, the program version may still compile even if the object–code version no longer does. You may then generate a new object file from the source–code version.

   Although linkable–program files are as compatible as program files, editing on the Protocol Spreadsheet must take place in the source program file.

5. Data can also be saved to a file using the Data Transfer command on the Disk Maintenance screen; see Section 13.4(C). Once data is saved in a file, the file appears in the directory listings of the File Maintenance screen.

6. Linkable–object (LOBJ) files are created via the Compile command, not the Save command. See Section 14.3(P).

7. Save the Printer Setup configuration file (*/sys/print_setup*) from the Printer Setup screen, not the File Maintenance screen. See Section 15.3.

(G) Change Directory

This command, labeled CHNGDIR on the function key, is the only method of moving from one current directory to another. Indicate the drive on which the new directory resides and give its absolute or relative pathname before executing the command. The name of the new current directory replaces the old one on the fourth line at the top of the File Maintenance screen, once the command is executed.

NOTES:

1. By definition, all relative pathnames of files and directories change once you change to a new current directory.

2. To move up to a higher directory, you must name the directory in the **Name** field.

3. If the name of the parent (the next higher) directory is not known, enter two periods (..) in the **Name** field. This moves you up one directory.

4. To change to a directory on another disk, select the drive in the rotating window and enter the absolute pathname of the directory in the name field.

(H) Make Directory

You must use the MAKEDIR (Make Directory) command to create a new directory. Use this command to create your own file hierarchy. You may create any number of subdirectories to the root (/) or */usr* directory on any disk, and you may subordinate directories to another directory, thereby building as many levels of subdirectories as you wish.

The relationship of one directory to another is identified by its name, as explained earlier in this section.

> NOTE: When you create a directory, you may use the absolute pathname for the new directory to locate it anywhere you specify on any of the disks. If you use a relative pathname, the new directory will be created as a subdirectory of the current directory.

(I) Copy

Use this command to copy a file or group of files to a new location. (The original copy or copies will remain, unless you choose to delete them using the Delete command.) This command is useful, for example, when you wish to copy certain files from one disk onto another disk. If you are using only one floppy disk drive, the system will prompt you to insert the "source" disk or the "destination" disk at the proper times and you should select NEW as your destination disk on the File Maintenance screen.

> NOTE: To successfully execute the File Maintenance Copy command on linkable-program files, you must have software revision 8.00 (or later). LPGM is an unknown file type to earlier software revisions.

When you select the Copy command, you will be asked to select the Source drive (where the file or files to be copied now reside), enter the source pathname of the file to be copied, select the destination drive, and enter the destination pathname (the intended directory location and filename for the new copy). The pathname you enter may be relative or absolute.

1. *Copying a group of files.* Multiple filenames may be "marked" in the directory for copying. See Marking Files, Section 14.3(C)3.

    If you designate a directory as the source you want to copy, all files and subdirectories contained in the directory are also copied.

    > NOTE: Copying a group of files may require more space than is available on one disk. When the first disk is full, you will be prompted to insert the next disk.

2. *Copying an entire directory.* You may indicate an entire directory to be copied. The directory and all its subdirectories and files will be copied. If the name of an existing directory is given, all files and directories are placed inside that directory. But the original directory is not retained. This means that any files or directories in the destination directory are, unless write-protected, overwritten by files or directories of the same name in the copied directory. You may also copy files to a fictitious subdirectory. As long as the subdirectory has a real parent directory, such a destination pathname is valid. (For example, if you have a directory named *lusr/programs* on FD1, you may copy a directory from the hard disk to *lusr/programs/x25* on FD1, even though the directory *lx25* did not previously exist.) The subdirectory is created as part of the Copy command, and all files and directories from the source are copied into it.

3. *Copying an entire disk.* If both floppy disk drives are operable, you would use the Duplicate Disk command on the Disk Maintenance screen. See Section 13.4(D).

    If you have only one floppy disk drive available, the Duplicate Disk command is not applicable to your hardware. However, it is possible to copy an entire disk to another disk in three steps: format the destination disk, copy the root directory to the disk, and transfer the data acquisition tracks to the disk.

    After a disk is formatted, it may be copied to via the Copy command. Copy the root directory from one disk to another; the file name for both the source and destination disks will simply be "/" and the softkey selection for the destination disk is NEWDISK. The system will prompt you to insert the "source" disk or the "destination" disk at the proper times. You must then use the Data Transfer command on the Disk Maintenance screen—see Section 13.4(C)—to copy to data acquisition tracks to your destination disk. The disk is now duplicated.

NOTE: Copying to a new disk in the same drive will use the same memory as the current program and the Layer Personality packages. The procedure may need fewer repetitions of disk-insertion/removal if it is done at a time when a large program and multiple layer packages are not loaded in.

(J) View

The purpose of the View command is to allow you to look at the contents of a file without actually loading the file. The program or data currently in the internal memory of the INTERVIEW is not overwritten by the View command.

Prior to executing the View command, you must select the drive on which the file resides and provide the (relative or absolute) pathname of the file.

When you press [xxo], the screen repaints, displaying the first 12 lines of the file in the Directory Listing area. New function keys are available as labeled.

Descriptive text is presented to the user when a program or setup file is viewed. For an ASCII file, the file is presented "as is." Bit-image and character-data files cannot be viewed.

1. *Moving through a view file.* The beginning of a file appears on the screen when a file is viewed. The cursor location is highlighted. Use [↓] to move the cursor to the bottom of the screen and continue pressing [↓] to scroll down through the file a line at a time. Move the cursor to the top of the screen by repeatedly pressing [↑] and continue pressing it to scroll back up through the file.

   Press [shift]-[↓] to move down to the end of the file. Use [shift]-[↑] to move to the top of the file.

   Use [PAGE] to move one page (12 lines) forward in the file. Press [PAGE] to move backward one page in the file.

   To leave the file being viewed and return to the File Maintenance screen, press [done] or the function key labeled ABORT.

(K) Print

This command prints a hard copy of the file when a printer is properly connected to the INTERVIEW's Printer Port. Indicate the disk on which the file resides, as well as the file's relative or absolute pathname. Then make a selection in the **Paginate** field.

If you select **Paginate: YES**, each printed page will contain a header. The header includes the name of the file (not its pathname) and the page number:

File : filename   Page : 1

Section 15 provides instructions on configuring a printer for use with the INTERVIEW and explains printed format.

(L) Rename

Use the Rename command to assign a new name to a file. A file can only be renamed if it resides on the active disk (named on the current directory line). In order to rename a file, you must indicate the disk on which the file resides, provide the pathname of the file (that is, give the old filename), and enter the new name you wish to give the file.

> NOTE: When you rename a file, the original file disappears.

The Rename command can also be used to move a file to a new location. Both new and old locations must be on the active disk (named on the current directory line.) To relocate a file to a different disk, use the Copy command, and then delete the original file.

> NOTE: Do not use the abbreviations (. and ..) for naming the new location for a renamed file since they are valid characters for a file name. They will be interpreted as part of the new name.

(M) Enable

This command is used to remove the write protection from a file or directory. Once a file or directory has been write-enabled, the save, delete, and rename commands can be executed on the file or directory.

When a directory is write-enabled, the files within the directory are also enabled, unless they have been individually write-protected. In this case, you must also enable each file before it can be modified or deleted.

Prior to executing the command, you must select the drive on which the file or directory resides and provide the (relative or absolute) pathname of the file or directory. Or you may simply cursor-select a filename for write-enabling and press ⬚. Multiple filenames may be "marked" in the directory for write-enabling. See Marking Files, Section 14.3(C)3.

(N) Protect

This is the Write Protect command. It is used as a security measure. When a file is write-protected, any attempt to save, delete, or rename the file will be rejected.

Prior to executing the Write Protect command, you must indicate the drive on which the file (or files) reside and you must provide the name of the file (or files) you wish to protect.

A directory may be named, cursor-selected, or marked for write protection. This write-protects the individual files within the directory. It is possible to write-protect the individual files as well; in which case, both the directory and the file must be enabled before the file can be modified or deleted.

> **NOTE:** Reformatting a floppy disk destroys all files and data, whether they are protected or not. Floppy disks can be write-protected manually against formatting, as explained in Section 1. The hard disk cannot be write-protected against a Format command entered from the Disk Maintenance menu.
>
> It is strongly recommended that you regularly back up the hard disk as well as any floppies you wish to preserve.

(O) Delete

Use this command to remove files permanently from a disk. Prior to executing the Delete command, you must select the disk drive from which you are deleting the file and give the (relative or absolute) pathname of the file you wish to delete. In order to delete an entire directory, you must first delete all files and subdirectories it contains. To delete a subdirectory you must be located in the directory above it (the parent directory).

> **NOTE:** Be aware that you can delete a file by placing the cursor over a filename in the directory listings and then executing the Delete command. Cursor selection takes precedence over any filename in the **Name** field.
>
> You may also mark one or more files for deletion with ▣. Any marked files take precedence and will be deleted instead of the file at the cursor location or a file named in the field at the top of the menu.

(P) Compile

Use this command to compile and save as object code the contents of the Protocol Spreadsheet or a file.

> **NOTE:** If you want to save setup menus in addition to the compiled spreadsheet program, use the Save command and create a linkable-program (LPGM) file. See Section (F) above.

One of the advantages of using linkable-object (LOBJ) files instead of object (OBJ) files is that OBJ files created on one unit will not run on another unit that is configured differently. In contrast, LOBJ files (as well as LPGM files) are

transparent to the configuration of the unit—i.e., they are just as transparent as the code would be, were it actually present in the spreadsheet buffer. The code, however, must still be compatible with the various menu parameters. For example, a call to *ll_il_transmit* or a SEND action, whether contained in an LOBJ file or written to the Protocol Spreadsheet, would not be compatible with a Line Setup selection of **Mode:** ▓MONITOR▓.

Linkable-object files also assist the programmer in efficiently using the INTERVIEW's memory and spreadsheet buffer. Refer to Section 27.4(D).

1. *File.* ▓FILE▓ is the default selection. A valid source file for compiling contains only standard C code, typically definitions of user-created routines. It may also contain *#pragma hook 0* preprocessor directives. (Refer to Section 59.4.) The code does not have to be a complete program. Program or setup files are not valid source files.

   > **NOTE:** Write C code from the Protocol Spreadsheet to a file by using the WRITE/U spreadsheet-editor command. See Section 29. The file will be type ASCII in the directory listing on the File Maintenance screen.

   If you choose ▓FILE▓, also select the Source drive (where the file resides) and enter the source pathname of the file to be compiled. To select a source file, you may enter the relative or absolute pathname of the file, position the cursor over the filename in the current directory, or mark the file in the current directory. See Selecting Files, Section 14.3(C).

   Depending on whether or not the file contains "hook", use either the OBJECT block-identifier (Section 27.4) or the *#pragma object* preprocessor directive (Section 59.4) on the Protocol Spreadsheet to access the C code in the file.

2. *Spreadsheet.* If you choose ▓SPREADSHEET▓, the contents of the Protocol Spreadsheet will be compiled. The spreadsheet program may include C code, softkey-generated entries, or a combination of the two, but it must be a valid program in order to compile.

   The linkable-object file which results will always contain system-generated *#pragma hook* directives, at least one of which will be a type-zero hook. (See Section 59.4.) To access this spreadsheet file, therefore, you must reference it on the Protocol Spreadsheet with the OBJECT block-identifier. See Section 27.4.

Whether you are compiling a file or the spreadsheet, specify a destination drive and enter the destination pathname (the intended directory location and filename for the LOBJ file). The pathname you enter may be relative or absolute.

Linkable–object files follow the standard naming conventions discussed in Section 14.2(E). As an added convention, you may want to append the suffix *.o* to the end of the name.

> NOTE: A */lib* subdirectory (if present in the */sys* or */usr* directory) is included in the search routine for linkable–object files. See Section 27.4. We recommend, therefore, that you make a */usr/lib* directory for storing the LOBJ files you create.

Press ⌷. During the Compile operation, status messages are posted at the top of the File Maintenance screen. If there are errors in the source file that prevent compilation, the following message will be displayed: *"Compilation failed — Errors detected."* For a diagnostic message about the first error, press ▭, SPDSHT, ⌷, GO-ERR. Press GO-ERR again for a message about the next error. Continue until no more errors are detected.

You may abort the Compile procedure by pressing the ABORT softkey or ▭. Note, however, that the destination file may have been partially overwritten if compile was to an existing file.

15 Printer Control

Utility Menu

Select Desired Utility Screen:

F1	F2	F3	F4	F5	F6	F7	F8
DT/TIME	PRINTER	D/MAINT	MISC	EZSETUP			

See Time-of-Day Clock Section

See Disk Maintenance Section

See Easy View Setup Section

Printer Setup

Enter Printer Speed: 2400
Select Number Of Bits Per Character: 8 BITS 7 BITS
Select Parity: NONE EVEN ODD SPACE MARK
Enter New Line Control Sequence: ᵏᵣ ᵏ
Enter Form Feed Control Sequence: ᶠ
Enter Number Of Pad Characters: 00
Select Number Of Characters Per Line: 72 120
Enter Number Of Lines Per Page: 066
Format Run Mode Output: YES NO
Select Printer Type: DUMB EPSON
Select Handshaking Mode: DC1/DC3 DTR
Redirect Run Mode Output: NO YES

        To: FLOPPY1 FLOPPY2 HRD DSK   Name:_____
        Append: NO YES

Figure 15-1 The Printer Setup menu.

15 Printer Control

The INTERVIEW will control most serial ASCII printers. In Program mode you may print program menus, triggers, the spreadsheet, and the contents of most files. In Freeze mode, you may print character data, statistics, and protocol and program traces. You may print prompts and statistics in Run mode (real–time.) Printing is controlled from the keyboard, from the Protocol Spreadsheet, and from the Printer Setup screen (see Figure 15-3), described later in this section.

15.1 The Connector

There is a separate male RS–232/V.24 Printer connector on the rear of the INTERVIEW (see Figure 15-2). The Printer connector is a DCE interface: it transmits to the printer on Pin 3 (RD) and applies ON voltage (+12 V) on Pins 5 (CTS), 6 (DSR), and 8 (CD). Information can be transmitted asynchronously in 7 or 8 bit ASCII code, with selectable parity.

For flow–control information, see Section 15.2(K).
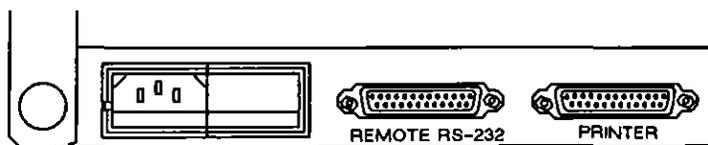
Figure 15-2 The printer connector is a 25–pin male connector.

15.2 Configuring the Printer Setup Screen

The Printer Setup screen is shown in Figure 15-3. The various menu fields are described in this section.

```
┌────────────────────────────────────────────────────────────┐
│  ┌──────────────────────────────────────────────────────┐   │
│  │              ** Printer Setup **                     │   │
│  ├──────────────────────────────────────────────────────┤   │
│  │                                                      │   │
│  │          Printer Speed: 2400                         │   │
│  │          Number of Bits: 8                           │   │
│  │          Parity Selection: NONE                      │   │
│  │          New Line: ⌐⌐                                │   │
│  │          Form Feed: ⌐F                               │   │
│  │          Pads: 00                                    │   │
│  │          Chars Per Line: 72                          │   │
│  │          Lines Per Page: 066                         │   │
│  │          Format Run Mode Output: YES                 │   │
│  │          Printer Type: DUMB                          │   │
│  │          Printer Handshaking Mode: DC1/DC3           │   │
│  │          Redirect Run Mode Output: YES               │   │
│  │          To: FD1  Name: _____        │   │
│  │          Append: NO  Press Shift-SAVE key to SAVE setup│ │
│  │                      Press XEQ key to ABORT printing │   │
│  ├──────────────────────────────────────────────────────┤   │
│  Enter Printer Speed: 2400                                   │
│  ┌────┐ ┌────┐ ┌────┐ ┌────┐  ┌────┐ ┌────┐ ┌────┐ ┌────┐   │
│  │ F 1│ │ F 2│ │ F 3│ │ F 4│  │ F 5│ │ F 6│ │ F 7│ │ F 8│   │
│  └────┘ └────┘ └────┘ └────┘  └────┘ └────┘ └────┘ └────┘   │
└────────────────────────────────────────────────────────────┘
```

Figure 15-3 Printer Setup screen.

(A) Speed

Enter the speed of the printer in this field. Default entry is 2400 bps.
Maximum print speed is 19200 bps.

(B) Number of bits

Select the number of data bits (i.e., total bits less parity) which the printer
expects in each byte. Possible selections are 8 (the default) and 7.

(C) Parity

Select the parity of the printer. Available options are **Parity**: NONE, EVEN,
ODD, SPACE, and MARK. The default selection is NONE.

(D) New Line

In this field, enter the control character or characters which the printer
interprets as "Start a new line." Alphanumeric, control, and hexadecimal
characters are legal entries. Default new-line characters are ⌐⌐ (Carriage
Return/Line Feed). If the field is cleared and left blank, no new-line characters
will be sent to the printer.

(E) Form Feed

Enter the printer's Form Feed control sequence (the control characters which cause the printer to advance to the top of the next page). Alphanumeric, control, and hexadecimal characters are legal in this field. You may enter up to four characters. The default entry is ᶠF (press [CTRL]–[L] or [HEX], [0], [C]; do not use [HEX], [F], [F]). If the field is cleared and left blank, no form–feed characters will be sent to the printer.

(F) Number of Pads

Some printers require pad characters following a new line command so that they have time to return to the start of the line and advance the paper without losing data. Following each new line command, the INTERVIEW adds the number of non–printing pad characters specified in this field. Only numeric entries are legal. The default entry is 0.

(G) Characters Per Line

Select the number of characters to be printed per line. Available options are 72 (default) and 120. If your printer's line length is 119 characters or less, choose 72. Lines longer than 72 characters will wrap to the next line.

If your printer's line length is 120 or greater, choose 120. Lines longer than 120 characters will wrap to the next line.

(H) Lines Per Page

Enter the length of your printer's page (in lines). The default is 66 lines. Numeric values from 1 to 999 are legal in this field.

(I) Format Run Mode Output

When YES is selected (this is the default), the Character or Screen Buffer is formatted before it is printed. (The data in the buffer is not affected.) The formatted buffer allows three positions per character and assigns symbols to special characters. If NO is selected, the character buffer is transmitted to the printer "as is" in single–line display with ASCII coding. **Format Run Mode Output:** NO might be appropriate if you were monitoring data that had already been formatted for a printer.

(J) Printer Type

Select the type of printer attached to the INTERVIEW. The options are DUMB and EPSON.

EPSON formats the menu screens so that the printouts approximate the INTERVIEW screen. The default selection, DUMB, places a carriage return after each field on the menu.

(K) Printer Handshaking Mode

The INTERVIEW responds to XON/XOFF control characters sent by the printer. The control character DC3, interpreted by the INTERVIEW as XOFF, causes transmission of data to the printer to be suspended. When the INTERVIEW receives the control character DC1 (interpreted as XON), it begins transmitting data to the printer again.

Select ▓▓DTR▓▓ as the handshaking mode, and the INTERVIEW also responds to DTR status sent by the printer. When DTR is dropped, transmission to the printer is suspended.

(L) Redirect Run Mode Output

The default selection is ▓NO▓ . Select ▓YES▓ to write real-time prompts, counters, and timers to a disk file. To redirect Run-mode output, the **Source** field on the Line Setup menu must be ▓LINE▓ and the **Initial Condition** field on the Record Setup menu must show ▓NOT RECORD▓ . Otherwise, the Line and Record Setup menus will override a **Redirect Run Mode Output:** ▓YES▓ selection.

When a spreadsheet PRINT action is executed, redirected output is captured on disk together with a time stamp indicating date, hour, and minute. (You cannot use this selection to redirect buffer output generated in Freeze mode.) If you use the C print routines discussed in Section 67, the output will not be time-stamped.

> NOTE: Output can be redirected to a file while data is being recorded in bit-image RAM. Recording to disk, however, overrides the **Redirect Run Mode Output:** ▓YES▓ selection. Once you activate recording (to disk) via the ▓RECORD▓ key, the spreadsheet RECORD ON action, or the *start_rcrd_play* C routine, output will be sent to the printer port. Even if you suspend recording, output will continue to be directed to the printer port.

When ▓YES▓ is selected, additional entry fields will be displayed on the Printer Setup Screen

To: Enter the destination drive. Selections are ▓FLOPPY1▓ , ▓FLOPPY2▓ , and ▓HRD DSK▓ . The default is ▓FLOPPY1▓ .

Name: Enter the relative or absolute pathname of the ASCII file to which the output will be written. This can be an existing file or a new file name. If the designated file doesn't exist on the destination disk, an ASCII file by that name will be created.

Append: Default selection is ▓NO▓ . Use this selection when you wish to overwrite the data on an existing file. Select ▓YES▓ to append the data to the end of an existing file.

NOTE: The Append: ⬛ selection will cause the permanent
loss of data in the existing file. If you wish to save the data
already in a file, use Append: ⬛ or create a new file name.

Table 15-1
Character Representations on Menu Screen Printouts

Plasma Display	Printout
Special characters:	Character representation:
F ($^r\varepsilon$ flag),	\7E
M (bit mask),	\BM
X (don't care)	\DC
«	\(
»	\)
S (sync)	\:S
\ (backslash)	\\
Not Equal (bar through character). Example: ⊟	\NE character. Example: \NE\7E
Control characters. Examples: ^{s}Y, ^{e}x, ^{s}x	Upper-case mnemonic (displayed as a backslash followed by two upper-case characters). Examples: \SY, \EX, \SX
Hexadecimal characters. Examples: ^{5}4, ^{B}2, ^{F}F	Displayed as a # followed by two printed characters. Examples: #54, #B2, #FF

15.3 Saving the Printer Setup

If there is a Printer Setup configuration that you frequently or always use, the
INTERVIEW can boot-up with that menu configuration.

Press ⬛-⬛ to save the configured Printer Setup menu to a file. The resulting
ASCII file is called _print_setup_ and is located in the _/sys_ directory of the boot drive.
During boot-up, only the _/sys_ directory on the boot drive is searched for this file. If
it exists, the configured Printer Setup is automatically loaded. Otherwise, the
INTERVIEW loads the default Printer Setup.

NOTE: Each time you save the Printer Setup, the contents of
_print_setup_ are overwritten. Rename or write-protect this file if
you want to save its contents.

If you subsequently load a program (PRGM), object (OBJ), or linkable-program (LPGM) file, the Printer Setup is not affected since these file types do not include the Printer Setup menu.

You can also load *print_setup* from the Printer Setup menu. Press [SHFT]-[LOAD]. Loading this file does not affect any other INTERVIEW menu screen.

15.4 How to Print Static Displays

While displayed, most menus can be printed individually via the [PRINT] key. (See Figure 15-4.) Some menus, however, are summary screens for a group of submenus. Pressing [CTRL]-[PRINT] when these menus are displayed produces a printout of the group of submenus. Symbols for menu screens and the special characters they represent are listed in Table 15-1.

(A) Printing The Set of Program Menus

Display the Program Menu screen and press [CTRL]-[PRINT] to print all the Program menus listed, including the Protocol Spreadsheet. (Trigger menus will not print if they have not received programming entries.)

(B) Printing the Setup Menus

Press [CTRL]-[PRINT] with the initial Setup screen displayed to obtain a set of print-outs for all Setup screens (Line, Display, BCC, Front End Buffer, and Interface Control).

(C) Printing Triggers

Display the Trigger Summary screen. Press [PRINT] to print the summary and [CTRL]-[PRINT] for as many of the trigger menus as have received programming entries. To print an individual trigger, display it and press [PRINT].

(D) Printing The Protocol Spreadsheet

Display the Protocol Spreadsheet and press [CTRL]-[PRINT] to print the entire contents of the Spreadsheet. Press [PRINT] alone to print only that portion of the Spreadsheet which is visible on the screen. The header of every printed page will include software and firmware revision levels as well as page number as follows:

S/W v8.00 ROM v6.00   INTERVIEW 7700   7/1/90   15:02   Page: 1

You may insert a form-feed command to the printer anywhere on the Protocol Spreadsheet by employing the following string:

/*^F_F*/

```
                           ** Trigger Setup **
                           Trigger Number: 1

     C Receiver:  NO
     O
     N EIA:       NO
     D Timeout:   NO                       Xmit Complete: NO
     S Flags:     NO                       Buffer Full:   NO
       Counter:   NO                       Keyboard:      YES \CR

       ------------------------------------------------------

       Prompt:    NO
     A Xmit:      YES \SY\SY\SX FOX \EX                 BCC: GOOD
     C Flags:     NO
     T Enhance:   NO
     I Timeouts:  NO
     O Counters:  NO
     N Timers:    NO
     S Alarm:     NO
       Capture:   NO
     Select Conditions Or Actions
       F 1      F 2      F 3      F 4      F 5    F 6      F 7      F 8
     CONDS   ACTIONS
```

Figure 15-4 Printout of the Trigger Setup screen (*Printer Type: EPSON*).

If you have a reverse–video block on the spreadsheet (editor mode), press ▣PRINT▣ to print only that block, no matter how long or short.

This string uses the ᶠF character formed by the keys ▣CTRL▣-▣L▣, not ▣HEX▣, ▣F▣, ▣F▣. The string will send a form–feed instruction to the printer.

(E) Printing the Layer Setup Screen

Display the main Layer Setup screen and press ⌷-⌷ to obtain printouts of
the main screen and all layer-specific setup screens for layer packages that are
loaded in.

15.5 How to Print Data

Line data, protocol traces, user traces, program traces, and the contents of the
Display Window can be printed in Freeze mode. Both graphical and tabular statistics
can be printed in Freeze mode or in Run mode (real-time.)

Table 15-2
Character Representations on Data Printouts

Plasma Display	Printout
Alphanumeric characters (all ASCII non-control except space)	Character is preceded and followed by a space
Fill symbol (⌦)	Displayed as three dots (...)
Space	Displayed as a blank space followed by two letters sp
Special characters F (^r_E flag), G (good BCC), B (bad BCC) A (abort) S (sync)	Character representation: [F] [G] [B] [A] [S]
Control characters Examples: Sy, Ex, Sx	Lower-case mnemonic (displayed as a blank space followed by two lower-case characters). Examples: sy, ex, sx
Hexadecimal characters Examples: $^5_4$, $^B_2$, ^F_F	Displayed as a blank space followed by two printed characters. Examples: 54, b2, ff
Lead-state symbols ‾ (lead state high) _ (lead state low) ⌐ (lead transition high to low) ⌐ (lead transition low to high)	Character representation: + – \– /+

(A) Printing Line Data

Line data can be set up to print in single–line, dual–line, or data–plus–leads formats. Setup information, date, time, offset, percentage, and page number are printed at the top of each page. The date and time are the current system date/time when printing data from an actual line; for recorded data, the date/time of recording is displayed. The symbols for data printout and the characters they represent are listed in Table 15-2.

Press [PRINT] to print data which is frozen on the screen. Data is formatted according to the selection made on the Printer Setup screen—see Section 15.2(I). Figure 15-5 shows the frozen dual–line data screen; Figure 15-6 shows the data printouts at 72 and 120 characters per line.

Press [CTRL]-[PRINT] to print the entire data buffer from the frozen screen. The data buffer will continue to print until the end of the data or until you exit and re-enter Run mode (press [PROGRAM], [RUN].)
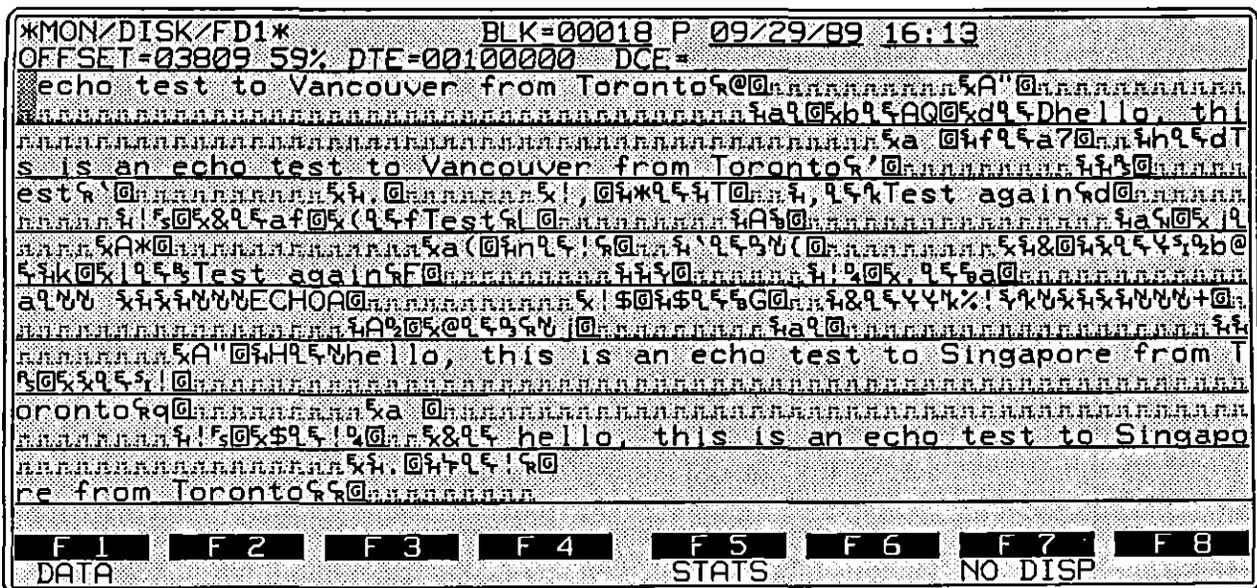
Figure 15-5 Data screen in Freeze mode.

```
*MON/DISK/FD1* BLK=00018   09/29/89  16:13  Page : 1
ASCII/8/NONE/BOP  OFFSET=03809  PERC=59%

sp e  c  h  o  sp t  e  s  t  sp t  o  sp V  a  n  c  o  u  v  e  r  sp f  r  o  m  sp T  o  r
..............................................................................................
      o  n  t  o  cr @ [G].............................. ex A  " [G]...................................
      ................ sh a  dl[G] ex b  dl et A  Q [G] ex d  dl et D  h  e  l  l  o  ,  sp t  h  i
..............................................................................................
s  sp i  s  sp a  n  sp e  c  h  o  sp t  e  s  t  sp t  o  sp V  a  n  c  o  u  v  e  r  sp f
................................................ ex a  sp[G] sh f  dl et a  7 [G]...... sh h  dl et d  T
      r  o  m  sp T  o  r  o  n  t  o  cr ' [G]............................. sh sh rs[G]..............
e  s  t  cr ' [G]................................. ex sh . [G]..................... ex i  , [G] sh
.............. sh i  fs[G] ex &  dl et a  f [G] ex (  dl et f  T  e  s  t  cr L [G]............
      * dl et sh T [G]...... sh , dl et ak T  e  s  t  sp a  g  a  i  n  cr d [G]...................
................ sh A  sb[G]................................................. sh a  cn[G] ex j  dl
.......... ex A  * [G]........................................ ex a  ( [G] sh n  dl et i  cr[G]
et sh k [G] ex l  dl et bs T  e  s  t  sp a  g  a  i  n  cr F [G]........................... sh
```

```
*MON/DISK/FD1* BLK=00018    09/29/89  16:13  Page : 1
ASCII/8/NONE/BOP  OFFSET=03809  PERC=59%

sp e  c  h  o  sp t  e  s  t  sp t  o  sp V  a
.........................................................

   n  c  o  u  v  e  r  sp f  r  o  m  sp T  o  r
.........................................................

   o  n  t  o  cr @ [G]...........................
   ................ sh a  dl [G] ex b  dl et A  Q

... ex A  " [G]..................................
[G] ex d  dl et D  h  e  l  l  o  ,  sp t  h  i

.........................................................
s  sp i  s  sp a  n  sp e  c  h  o  sp t  e  s

.........................................................
t  sp t  o  sp V  a  n  c  o  u  v  e  r  sp f

.......................................... ex a  sp
```

Figure 15-6 Printout of the data display in Figure 15-5 at 120 (top) and 72 (bottom) characters per line.

```
*MON/DISK/FD1* BLK=00017 09/29/89  16:13  Page : 1
ASCII/8/NONE/BOP
SRC   ADDR   TYPE     Nr    Ns   P/F   SIZE     TIME        BCC
DCE   03     DISC               0     0002   1613:30.687   [G]
DTE   03     UA                 0     0002   1613:30.714   [G]
DTE   01     SABM               1     0002   1613:30.835   [G]
DCE   01     UA                 1     0002   1613:30.897   [G]
DCE   03     INFO     0     0   0     0007   1613:30.934   [G]
DTE   01     INFO     0     0   0     0006   1613:30.938   [G]
DTE   03     RR       1         0     0002   1613:30.962   [G]
DCE   01     RR       1         0     0002   1613:31.001   [G]
DTE   01     INFO     1     1   0     0025   1613:31.199   [G]
DCE   01     RR       2         0     0002   1613:31.264   [G]
DCE   03     INFO     2     1   0     0007   1613:31.398   [G]
DTE   03     RR       2         0     0002   1613:31.422   [G]
DTE   01     INFO     2     2   0     0005   1613:31.452   [G]
DCE   01     RR       3         0     0002   1613:31.518   [G]
DTE   01     INFO     2     3   0     0023   1613:31.709   [G]
```

Figure 15-7 Layer 2 Protocol Trace printout in Freeze mode.

(B) Printing Protocol Traces

Protocol traces can be printed in Freeze mode via the [PRINT] key. Press [PRINT] to generate a printout of the current screen (see Figure 15-7). Press [CTRL]-[PRINT] to print the entire buffer from the frozen screen. Printing will be aborted if you leave Freeze mode.

(C) Printing Program Trace

The Program Trace can be printed in Freeze mode via the [PRINT] key. Press [PRINT] to generate a printout of the current screen (see Figure 15-8.) Press [CTRL]-[PRINT] to print the entire buffer from the frozen screen. An explanation of Program Trace can be found in Section 6.

```
*EMDCE/LINE* BLK=00000 12/02/89  13:01  Page : 1
ASCII/8/NONE/BOP
Program Trace
Layer 3     Test fips_module_a20     state begin_init
                                        restart_req sent
                                        restart_con recvd
Layer 3     Test fips_module_a20     state call
                                        incoming call sent
Layer 3     Test fips_module_a20     state p3
                                        call_accept recvd
Layer 3     Test fips_module_a20     state bad_PR
                                        invalid P(R) sent
Layer 3     Test fips_module_a20     state complete_init
                                        reset_req recvd
Layer 3     Test fips_module_a20     state test_06
                                        reset_c too long sent
Layer 3     Test fips_module_a20     state pass_fail
                                        timeout:  no reset_req
                                        ** test failed  **
```

Figure 15-8 Program Trace printout in Freeze mode.

```
*MON/DISK/FD1* BLK=00017 09/29/89  16:13  Page : 1
ASCII/8/NONE/BOP

        Echo time in milliseconds:
        XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX   .         .
                120      240      360      480      600


        No. of samples:
        XXXXXXXXXXXXXXX      .          .         .         .
                2        4        6        8        10
```

```
*MON/DISK/FD1* BLK=00017 09/29/89  16:13  Page : 1
ASCII/8/NONE/BOP

    Name     Current    Last   Minimum Maximum  Average     Unit

    echo        0        248     341     452     407.00 MSECS
    samples     3         0
```
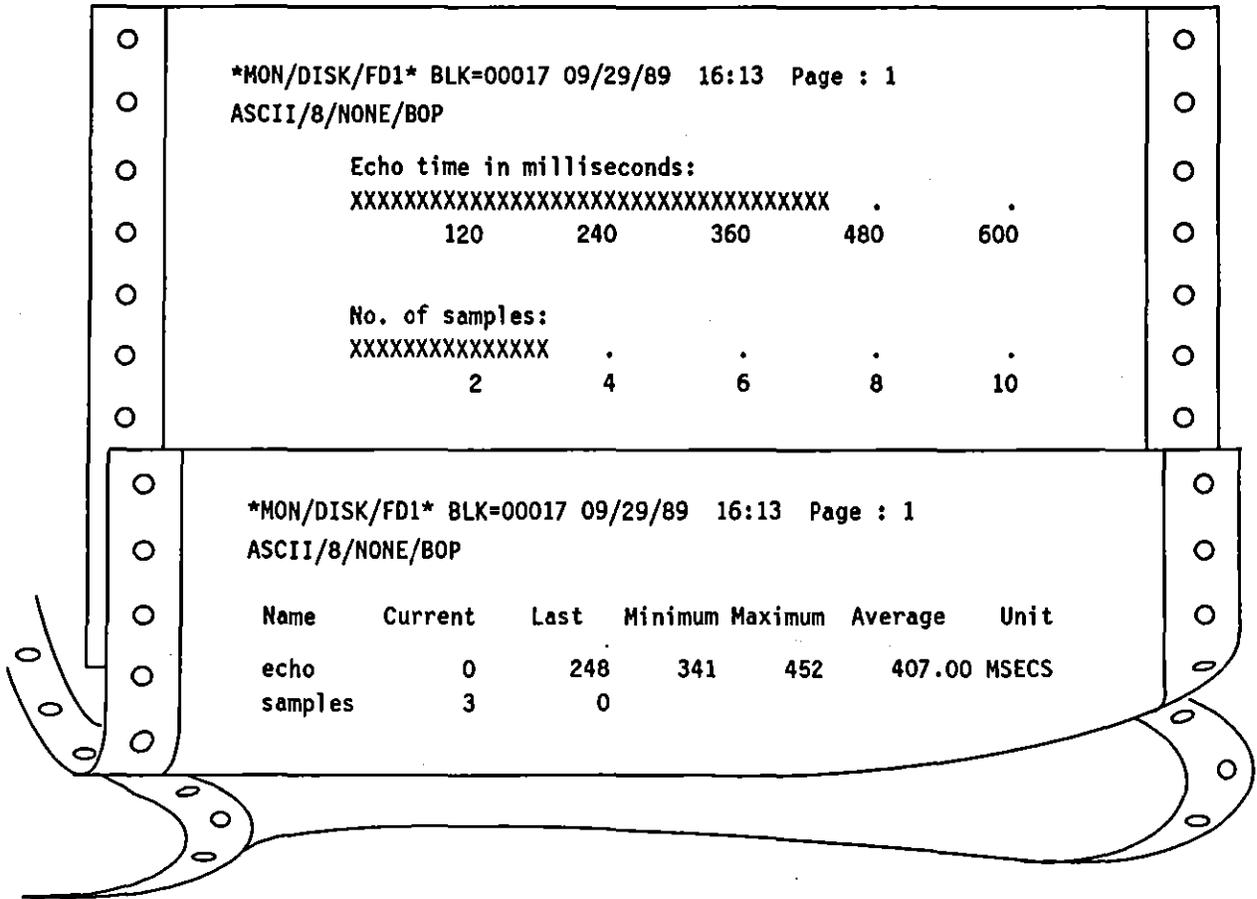
Figure 15-9 Printout of graphical (top) and tabular (bottom) statistics in Freeze mode.

(D) Printing Statistics

Tabular and graphical statistics can be accessed via softkey in Program mode and Run mode (frozen and real-time). Either of the statistics screens also may be accessed via the ▣ key if ░STATISTICS░ is the Display Mode selected on the Display Setup menu.

Once a statistics screen is displayed, press ▣ to send the current statistics to an attached printer. Figure 15-9 is an example of graphical and tabular statistical printouts.

```
*MON/DISK/FD1* BLK=00100 08/23/89  10:04  Page : 1
EBCDIC/8/NONE/BOP
==> active pu:\C1   pu status:HOST_SENDING
                       SNA STATISTICS
                       Special Events
                       _____


                         Primary    Secondary
        CRC errors          0            3
     Retransmissions       96            0
         Aborts             0            0
  Negative Response         7            0
  Invalid FID format        0            0
  _____

   link startups:      1            reset count:    1
   elapsed time:     348 secs       sample count:   77
 last sense data:   \08\1E\00\00     from device:   \00

     last FID:         2
        enter <S> for stats menu  <M> for main menu
```

Figure 15-10 Printout of a screen from the *SNA Statistics* applications program
(OPT-951-19-1) from the Display Window.

(E) Printing from Display Window

Customized screens, such as those in applications programs, can be printed in
Freeze mode from the Display Window. Press [PRINT] to generate printouts like
that in Figure 15-10.

(F) Printing User Traces

User traces can be printed in Freeze mode. Video enhancements are not
indicated on the output. Press ⟦PRINT⟧ to generate a printout of the current screen.
Press ⟦CTRL⟧–⟦PRINT⟧ to print the entire buffer from the frozen screen. User traces are
explained in Section 6.

15.6   Spreadsheet Control of Printing

The Protocol Spreadsheet allows PRINT as a spreadsheet action. This causes the
INTERVIEW to respond to a predetermined condition and print a line of tabular
statistics for an accumulator, counter, or timer; or print a user–prompt that is sent to
the printer after it has been written to the second line of the screen. (See Section
30 for an explanation of spreadsheet–controlled printing.)

The library of C routines includes several print functions. See Section 67.

15.7   Printing Disk Files

Files stored on disk can be printed from the File Maintenance menu. See Section
14.3.

16 The Time-of-Day Clock

Utility Menu

Select Desired Utility Screen:

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |

DT/TIME   PRINTER   D/MAINT   EZSETUP   MISC

See Disk Maintenance Section

See Printer Control Section

See Easy View Setup Section

Date/Time Setup

Current Date: __/__/__
  (Status field -- No Entry)

Current Time: __:__
  (Status field -- No Entry)

Set Date: __/__/__
  (Enter Date As MM/DD/YY)

Set Time: __:__
  (Enter Time As: HH:MM)
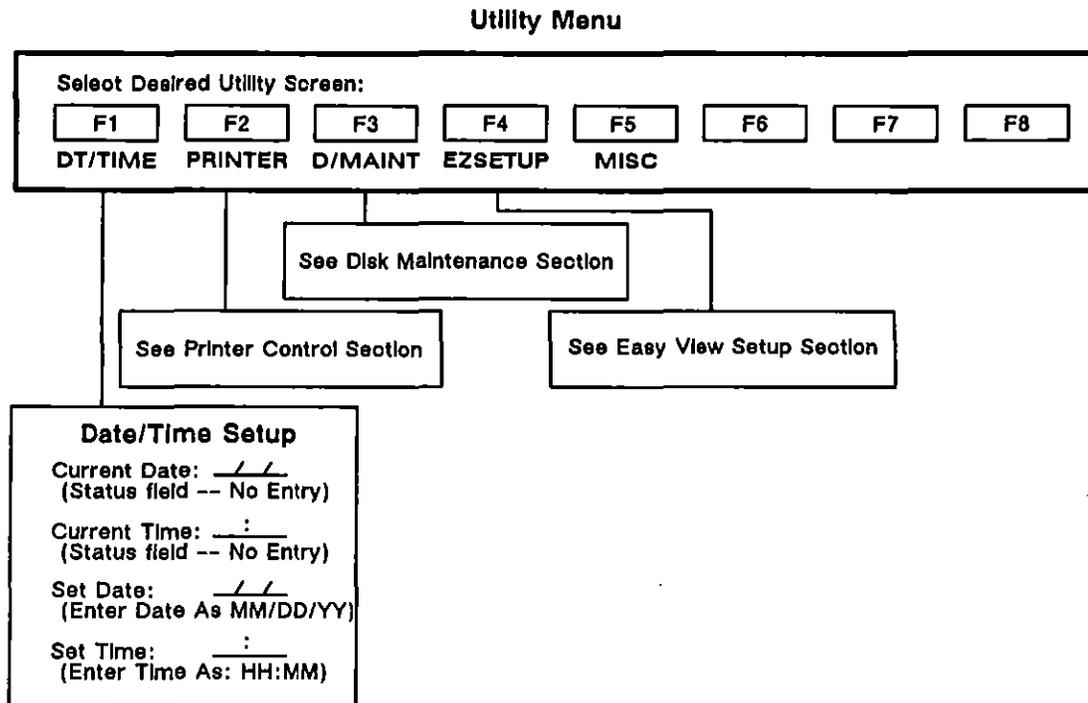
Figure 16-1 The Date/Time Setup menu.

16 The Time-of-Day Clock

The INTERVIEW has a battery-operated real-time clock. The day, month, and year as well as the current time, posted to the second, are automatically accessible as soon as you power on the INTERVIEW. Used to time/date stamp recorded data, it is also available as a Trigger Condition on the Protocol Spreadsheet. The time and date can be reset on the Date/Time Setup screen, which is a submenu of the Utilities menu.

A sample menu is shown in Figure 16-2. The current date and time appear at the top of the screen. The time is updated on the screen every second. The clock retains time and date even when powered off and adjusts itself to accommodate the length of each month. It also takes leap years into account automatically. The clock menu does, however, permit you to reset the time or date, if required.

To reset the date, select the **Set Date** field and enter month, day, and year in that order in the two-digit space provided (mm/dd/yy). Use ⟨ɪᴛᴜᴹ⟩, ⟨⊟⟩, or ⟨ᴅᴏᴺᴱ⟩ to move into each field. The month and day entries may be either one or two digits; it is not necessary to enter a leading zero. If only one digit appears in any of the two-digit fields, a leading zero is assumed. You may fill in the month, day, or year fields individually, if you prefer. (For example, if your only entry is 1_/ in the month field, only the month will be altered—it will be set to 01/—when you press ⟨ᴱᴺᴛ⟩.)

In the **Set Time** field, hour and minute entries are made as hh:mm in a 24 hour format. (The seconds setting cannot be altered.) You may set the hour and the minutes fields simultaneously or individually. As with the date field, a single-digit entry is assumed to have a leading zero. Figure 16-2 shows the menu filled out for September 1, 1989 and 1:30 p.m.
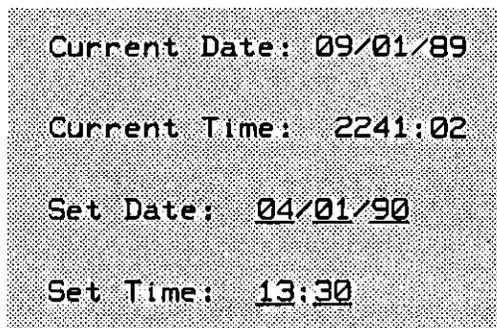
Current Date: 09/01/89

Current Time: 2241:02

Set Date: 04/01/90

Set Time: 13:30

Figure 16-2 The real-time clock in the INTERVIEW is controlled on the
Date/Time Setup screen.

To set the clock, press the [≡] key when you have entered the correct date or time. Once the clock is reset, the status fields **Current Date** and **Current Time** should match your entries.

17 Color Display

** Misc Utilities **

From B/W ENHANCE

BLN	REV	LOW
OFF	OFF	OFF
OFF	OFF	ON
OFF	ON	OFF
OFF	ON	ON
ON	OFF	OFF
ON	OFF	ON
ON	ON	OFF
ON	ON	ON

(Static Values)

To COLOR DISPLAY

BLNK	CHAR	BACK
OFF	GRN	BLK
OFF	BLU	BLK
OFF	BLK	GRN
OFF	BLK	BLU
ON	GRN	BLK
ON	BLU	BLK
ON	BLK	GRN
ON	BLK	BLU

(Selectable fields, mapped to Static Values)

Select Background Display Color:
BLACK GREEN BLUE YELLOW
RED CYAN PURPLE WHITE

Select Foreground Display Color:
BLACK GREEN BLUE YELLOW
RED CYAN PURPLE WHITE

Select Blink Attribute:
OFF ON

| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |

Figure 17-1 The Miscellaneous Utilities menu.

17 Color Display

Both black and white and color monitors can be used as external displays. Separate connectors are provided for each type of monitor on the rear panel of the INTERVIEW. For both monochrome and color displays, a set of video enhancements can be controlled from the INTERVIEW. For color displays, the enhancements are mapped on the Miscellaneous Utilities screen. Available options on this screen are shown in Figure 17-1.

17.1 Connectors for External Monitors

Connect a monochrome (black and white) monitor to the RS-170 connector. This is the round connector located to the far right of the rear panel (see Figure 17-2).

CRT/RGB RS-170
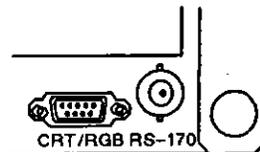
Figure 17-2 Video-out connectors for RS-170 (black and white) and RGB (color) signals are located on the rear panel of the INTERVIEW.

Connect an 8 or 16-color monitor to the 9-pin RGB connector at the right of the rear panel (see Figure 17-2). Pin configurations for the RGB connector are shown in Appendix I.

17.2 Color Control from the Miscellaneous Utilities Screen

Three of the data enhancements available as trigger actions (Blink, Reverse, and Low; see Figure 17-3) are applied differently when a color monitor is attached. There are eight possible on/off combinations for these three trigger enhancements. The user defines these eight combinations on the Miscellaneous Utilities screen.

```
C  Flags:     NO
T  Enhance:   BOTH  Rev: 0  Blnk: 0  Low: 0  Hex: X
I  Timeouts:  NO
```
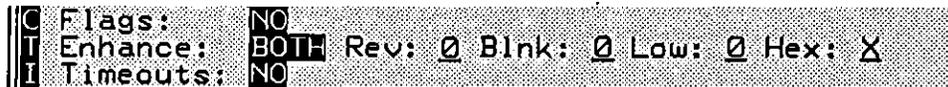
Figure 17-3 The settings in the Trigger Enhance field (0 = off; 1 = on) are mapped to color and blink definitions selected on the Miscellaneous Utilities screen. The Hex setting does not pertain to screen colors.

The color setup portion of the Miscellaneous Utilities screen is shown in Figure 17-4. The screen is divided into two areas: the enhance combinations on the left-hand side of the screen; and the selectable display options on the right. User entries are made only on the right-hand portion of the screen.

```
** Misc Utilities **

From B/W ENHANCE                To COLOR DISPLAY
 BLN  REV  LOW                  BLNK    CHAR  BACK
 OFF  OFF  OFF                  OFF     GRN   BLK
 OFF  OFF  ON                   OFF     BLU   BLK
 OFF  ON   OFF                  OFF     BLK   GRN
 OFF  ON   ON                   OFF     BLK   BLU
 ON   OFF  OFF                  ON      GRN   BLK
 ON   OFF  ON                   ON      BLU   BLK
 ON   ON   OFF                  ON      BLK   GRN
 ON   ON   ON                   ON      BLK   BLU
```
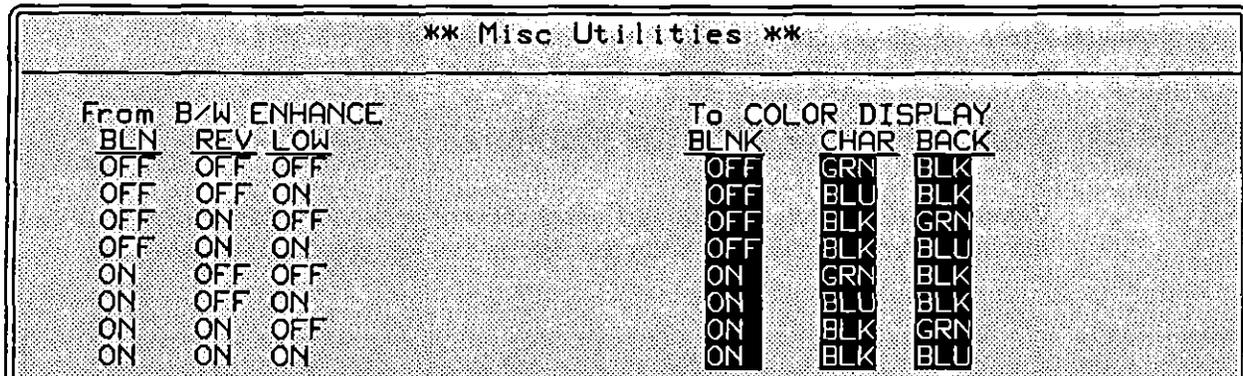
Figure 17-4 Trigger settings on the left are mapped to user-defined blink and color characteristics, selected on the right.

(A) Black and White Enhancement List

The eight enhancement combinations are labeled "From B/W ENHANCE." Each row of three settings (ON/OFF for Blink, Reverse, and Low) represents one configuration of a trigger **Enhance** field.

(B) Selectable Color Display Options

The user selects blink, foreground color, and background color options on the right half of the screen, labeled "To COLOR DISPLAY." Use the cursor keys or the ⏎ key to move from field to field. The 🔼 and 🔽 keys rotate among the various selections within a field. The options which you define are matched to the static combinations to the left in the same row. Thus, when you create a trigger action **Enhance:** DTE Rev: 0 Blnk: 0 Low: 0, you are specifying that displayed DTE data take on the color characteristics defined in the first row of the Miscellaneous Utilities screen. (The **Hex** enhancement on a trigger does not influence color options.)

1. *Blink.* The first column under COLOR DISPLAY, labeled BLNK, determines whether blink is to be turned on or off in response to the trigger entry on the left.

2. *Character.* The center column, labeled CHAR, determines what color is assigned to the screen foreground (that is, the characters themselves) in response to the trigger Enhance entry on the far left. Possible foreground colors are black, green, blue, yellow, red, cyan, purple, and white.

3. *Background color.* The right–hand column, BACK, defines screen background color (that is, the square background around subsequent individual characters) in response to the trigger entry on the far left. Color possibilities are the same as for foreground.

> NOTE: Never use the same foreground and background color on the display if you have an eight–color monitor. (Data will not be visible.) If you have a 16–color monitor, you may be able to choose the same color in the background and the foreground and retain a contrast between data and the surrounding screen. Check the documentation for your monitor.

(C) Trigger Control of Color

When you enter the three–bit enhancement option as an Enhance action on a Trigger Setup screen (see Figure 17-3) or as a Layer 1 ENHANCE action on the Protocol Spreadsheet, you are designating the color scheme which the screen will adopt whenever that trigger becomes true. More specifically, you are indicating what color the next character becomes (foreground color), whether the character blinks, and what color the small rectangular box surrounding the character will be (background color). These three characteristics apply to subsequent characters and their background until another trigger alters the color scheme.

ENHANCE actions above Layer 1 are applied to specific lines on the protocol–trace display for the given layer. REVERSE, BLINK, and LOW selections may be configured at Layer 3, for example, so that a Call Request packet receives a different color enhancement from a Clear Request.

When you program a trigger, only the Enhance entries for Blnk, Rev, and Low influence screen characteristics. (The Hex field always causes characters to be displayed in hexadecimal, or turns off the hexadecimal character enhancement.) An Enhance entry of 1 equates to "ON"; an entry of 0 equates to "OFF."

> NOTE: A "Don't Care" (X) after Blnk, Rev, or Low leaves the enhancement at its previous setting, making the color which results from the trigger dependent on the effects of previous triggers.

Each time you run the program, all enhancement settings are initially reset to zero. If no trigger entries are made, or if the enhance trigger never becomes true, the color monitor retains its own color settings. (Refer to the technical documentation for the monitor to determine how colors are set internally.)

(D) Color Graphics

Several colors are offered for bar graphing on the Graphical Statistics menu. These colors are always displayed against a dark background. Their use is not related to the color setup screen. See Section 21 for a description of color graphics.

17.3 Black and White Data Enhancements

Blink and reverse data enhancements for the INTERVIEW's plasma display are available when a monochrome monitor is installed. In addition, a low intensity enhancement can be produced on a monochrome monitor. These display highlights are controlled by triggers (see Figure 17-3), either on the Protocol Spreadsheet or on Trigger Setup screens. Refer to Section 25 or 31 for a description.

18 Easy View Setup

Utility Menu

```
Select Desired Utility Screen:

  ┌──────┐ ┌──────┐ ┌──────┐ ┌──────┐ ┌──────┐ ┌──────┐ ┌──────┐ ┌──────┐
  │  F1  │ │  F2  │ │  F3  │ │  F4  │ │  F5  │ │  F6  │ │  F7  │ │  F8  │
  └──────┘ └──────┘ └──────┘ └──────┘ └──────┘ └──────┘ └──────┘ └──────┘
  DT/TIME  PRINTER  D/MAINT   MISC    EZSETUP
```

See Color Display Section

See Disk Maintenance Section

See Printer Control Section

Easy View Setup

Enable Easy View: YES NO
Enter Easy View After Power-Up: YES NO
Keep Easy View Menu Information In Memory: YES NO
Display Program Warning Messages: YES NO

See Time-of-Day Clock Section

Figure 18-1 The Easy View Setup menu.

18 Easy View Setup

There are four parameters that control Easy View operation. They are set in the
Program-mode Easy View Setup screen. See Figure 18-2. To access this screen, press UTIL,
EZSETUP from the main Program menu.

```
                    ** Easy View Setup **


         Enable Easy View:                            YES

         Enter Easy View After Power-Up:              YES

         Keep Easy View Menu Information In Memory:   YES

         Display Program Warning Messages:            YES



             Press SHIFT-SAVE To Save Setup
Enable Use Of The EZ VU Key To Enter Easy View?
    F 1       F 2      F 3       F 4        F 5       F 6       F 7       F 8
    YES       NO
```

Figure 18-2 The Easy View Setup screen.

The default selection of each parameter on the Easy View Setup menu is YES. If you press
[SHIFT]-[SAVE], the configuration of this screen is saved in a file called *ezview_setup* in the */sys*
directory of the boot-up disk. Once saved, the parameters are automatically loaded during
boot-up.

18.1 Enable Easy View

The first parameter determines whether or not the [EZ VU] key is enabled. The default
selection is YES. Once enabled, [EZ VU] moves the user back and forth between
Program-mode screens and Easy View menus. (See Section 4.) Setting this
parameter to NO disables access to the Easy View menus. An alarm sounds if you
press [EZ VU] when it is disabled.

18.2 Enter Easy View After Power-Up

The second parameter determines whether the INTERVIEW enters Program mode or Easy View following boot-up.

If you set this field to ▓YES▓, there is a five-second pause at the power-up screen before you see the first Easy View menu. Use the ⌈𝚛𝚟⌋ key to exit Easy View and access Program-mode screens.

> NOTE: During boot-up, the INTERVIEW checks the boot-up disk for a file named *lusrldefault* and the hard disk for a file named *lusrluser_intrf*. (See Sections 2.1 and 2.2.) If it locates either, it does not enter Easy View following boot-up regardless of the setting of this parameter.

If you select ▓NO▓, the INTERVIEW is in Program mode at power-up. Use the ⌈𝚛𝚟⌋ key from any Program-mode screen to enter Easy View.

18.3 Keep Easy View Menu Information in Memory

The third parameter controls whether the contents of the *mstrmenu.cmp* file and the most recently accessed text file are held in memory while the INTERVIEW runs a selected program. *mstrmenu.cmp* is the Easy View menu information file that contains all of the information needed to present the menu screens and permit the user to interact with them. This compiled file resides in the *IMENU* directory on the hard disk.

Easy View keeps track of your path through the menus, even after you have exited Easy View. Each time you return to Easy View, you are automatically located in the same menu from which you exited. When this field is ▓YES▓, you can exit Easy View to run an application program without losing your place in the menus.

If you select ▓NO▓, your position in the Easy View menus is lost whenever you load a program or layer package. When you return to Easy View, the first menu in the hierarchy is displayed. It is possible that a program you select to run from Easy View may be too large to compile with *mstrmenu.cmp* and a text file in memory. In this case, set this parameter to ▓NO▓.

18.4 Display Program Warning Messages

By default, the warning message shown in Figure 18-3 is displayed whenever you select a program to run from an Easy View menu. The message is displayed before the program is loaded and indicates that loading the program will result in the current setup parameters, triggers, and spreadsheet being overwritten.

If you do not want this message presented, disable it on the Easy View Setup screen. You may also disable the warning message temporarily (until the INTERVIEW is turned off) by pressing ⒟ when the message is first presented.

```
┌────────────────────────────────────────────────────────────────┐
│ ┌──────────────────────────────────────────────────────────────┐ │
│ │ ┌──────────────────────────────────────────────────────┬────┐ │ │
│ │ │          MENU of SNA Statistic Programs              │  3 │ │ │
│ │ ├──────────────────────────────────────────────────────┴────┤ │ │
│ │ │  ┌────────────────────────────────────────────────────┐   │ │ │
│ │ │  │   Loading this program will overwrite the current  │   │ │ │
│ │ │  │   spreadsheet, triggers, and parameters in memory. │   │ │ │
│ │ │  │                                                    │   │ │ │
│ │ │  │     Proceed? (Press  y  for yes,  n  for no)       │   │ │ │
│ │ │  │                                                    │   │ │ │
│ │ │  │  Press  d  to disable further display of this      │   │ │ │
│ │ │  │          warning                                   │   │ │ │
│ │ │  └────────────────────────────────────────────────────┘   │ │ │
│ │ ├──────────────────────────────────────────────────────────┤ │ │
│ │ │  Analyses of multidrop SNA line with Type 2 controllers  │ │ │
│ │ └──────────────────────────────────────────────────────────┘ │ │
│ │ ↑↓ move selection bar          RETURN select menu entry      │ │
│ │ ←  move to previous menu       HOME   move to top menu       │ │
│ │ →  move to next menu           EZ VU  exit/enter menus       │ │
│ └──────────────────────────────────────────────────────────────┘ │
└────────────────────────────────────────────────────────────────┘
```

Figure 18-3 A warning message displayed prior to loading a program.

19 Easy View Maintenance

(a) Automatic Installation

CAUTION: Before you begin, make a backup copy of *HRD/MENU/mstrmenu.txt*.

Select Keep Easy View Menu Information In Memory: NO on the Easy View Setup screen.

Access Easy View Maintenance program.

Place diskette with application program and script file in FD1.

Press [RETURN] to begin the automatic installation.

When installation is complete, press any key and then [PROGRAM] to return to the Easy View menus.

Use automatic installation to add AR-supplied application programs to the Easy View menus.

(b) Create Versions

CAUTION: Before you begin, make a backup copy of *HRD/MENU/mstrmenu.txt*.

Select Keep Easy View Menu Information In Memory: NO on the Easy View Setup screen.

Access Easy View Maintenance program.

Place diskette with application program and script file in FD1.

Press the spacebar (or other key) to access the Easy View Maintenance Help screen.

Press FNAM ED softkey. Identify source and destination script files for merging and source and desintation files for compiling.

Press LOAD softkey. Source script file is loaded.

Press PROG ED softkey. Find program of interest. Press [SAVE], [CTRL] - [INSERT LINE], [LOAD]. Edit this entry to create a new version of the original program.

Press MERGE softkey. Source script file is merged with destination script file.

Press COMPILE softkey. Source file is compiled as destination file. All versions have been added to the Easy View menu system.

Press [PROGRAM] to return to the Easy View menus.

If you want multiple versions of a program to be selectable from Easy View menus, use the Easy View Maintenance program to create new versions.

(c) Install Your Own Program

CAUTION: Before you begin, make a backup copy of *HRD/MENU/mstrmenu.txt*.

Select Keep Easy View Menu Information In Memory: NO on the Easy View Setup screen.

Create a script file for your program on the Protocol Spreadsheet. Mark it as a block and press [EXIT], BLOCK, IN/OUT, WRITE/U, *FD1/MENU/install.txt* to save.

Press [EZ VU]. Access Easy View Maintenance program.

Place diskette with application program and script file in FD1.

Press [RETURN] to begin an automatic installation of your program.

When installation is complete, press any key and then [PROGRAM] to return to the Easy View menus.

To install one of your own programs into an Easy View menu, create a script file and then perform an automatic installation.

(d) Edit *mstrmenu.txt*

CAUTION: Before you begin, make a backup copy of *HRD/MENU/mstrmenu.txt*.

Select Keep Easy View Menu Information In Memory: NO on the Easy View Setup screen.

Access the File Transfer Shell program. Transfer *mstrmenu.txt* out of the INTERVIEW to a local PC.

Use the PC's word processor to make your desired changes.

Transfer the text back to the INTERVIEW.

Access the Easy View Maintenance program.

Press the spacebar (or other key) to access the Easy View Maintenance Help screen.

Now press the COMPILE softkey to compile this new version of *mstrmenu.txt*. It is automatically saved as *mstrmenu.cmp*.

Press [PROGRAM] to return to the Easy View menus.

Although not recommended, you can directly edit mstrmenu.txt if you export it from the INTERVIEW.

Figure 19-1 Overview of the different uses of the Easy View Maintenance program.

19 Easy View Maintenance

This section addresses the Easy View Maintenance program, one of the selections on the Utilities, Model and Demonstration Programs menu. See Figure 19-2. It also provides information on creating and editing script files used in the installation procedure.

```
┌─────────────────────────────────────────────────────────────────────────┐
│ ┌───────────────────────────────────────────────────────────────────┐   │
│ │    Utilities, Model and Demonstration Programs            2│       │
│ ├───────────────────────────────────────────────────────────────────┤   │
│ │                                                                   │   │
│ │                    File Transfer Shell                            │   │
│ │                    ▓Easy View Maintenance▓                        │   │
│ │                    FD1 Install File                               │   │
│ │                    FD2 Install File                               │   │
│ │                    Make Directory Trees                           │   │
│ │                    HRD Tree                                       │   │
│ │                    FD1 Tree                                       │   │
│ │                    FD2 Tree                                       │   │
│ │                         ↓↓ MORE ↓↓                               │   │
│ ├───────────────────────────────────────────────────────────────────┤   │
│ │   Install Application Programs and Create New Versions            │   │
│ └───────────────────────────────────────────────────────────────────┘   │
│                                                                          │
│ ↑↓  move selection bar            RETURN select menu entry               │
│ ←   move to previous menu         HOME   move to top menu                │
│ →   move to next menu             EZ VU  exit/enter menus                │
└─────────────────────────────────────────────────────────────────────────┘
```
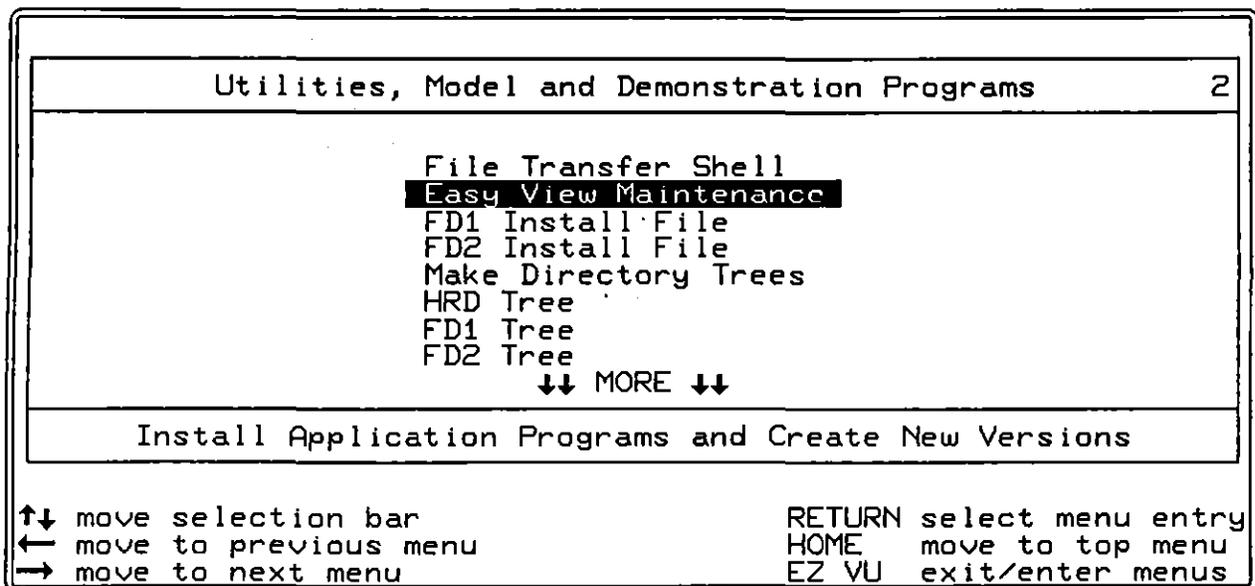
Figure 19-2 Easy View Utilities, Model and Demonstration Programs menu.

Figure 19-1 provides an overview of the different uses of the Easy View Maintenance program. Typically, you will use the Easy View Maintenance program to install AR–supplied application programs or your own programs into the Easy View system. You can also use it to create multiple versions of these application programs—for example, versions with different line speeds or line/disk source selections. Then, all versions are selectable from the Easy View menus.

The Easy View Maintenance program *adds* entries to the menus. It cannot modify, reorder, or remove existing menu entries. Whenever you add a selection to an Easy View menu, you are modifying the Easy View menu file.

19.1 The Easy View Menu File

The menu information file, *mstrmenu.cmp*, contains all of the information needed by the Easy View system to present the menu screens and permit the user to interact with them. This compiled file must reside in the */MENU* directory on the hard disk.

The source text file (also referenced as the script file) for *mstrmenu.cmp* is an ASCII file named */MENU/mstrmenu.txt*. All script files, including *mstrmenu.txt*, follow the format explained in Section 19.5.

When you perform an automatic installation of an application program (or customized versions of an application program) via the Easy View Maintenance utility, the INTERVIEW incorporates script information about the new program(s) into *mstrmenu.txt* and then generates a new version of *mstrmenu.cmp*.

19.2 Accessing the Maintenance Program

Regardless of which function you want the Easy View Maintenance program to perform, first go to the Utilities, Model and Demonstration Programs menu—from the Easy View Main menu, position the selection bar over the UTILITIES menu item and press ▣. Now position the bar over Easy View Maintenance, as shown in Figure 19-2. Press ▣ again. You may be questioned about whether or not you want to load the program. If so, press Ⓨ. Then, the screen shown in Figure 19-3 should appear.

> NOTE: The instructions in this section assume that you are currently in the Easy View system. See Section 4 on Easy View general operation and Section 18 for information on enabling Easy View.

```
╔══════════════════════════════════════════════════════════════════╗
║*MON/LINE*              BLK=         06/21/90 09:15                 ║
║                                                                    ║
║                                                                    ║
║    ▨▨▨  ▨▨▨▨▨▨        Easy View Maintenance Program                ║
║   ▨▨▨▨  ▨▨▨▨▨▨▨                                                    ║
║   ▨▨▨▨  ▨▨▨▨  ▨▨▨        Version 1.00                              ║
║  ▨▨▨▨▨▨  ▨▨▨  ▨▨▨▨                                                 ║
║  ▨▨▨  ▨▨▨  ▨▨▨▨▨▨▨                                                 ║
║  ▨▨▨  ▨▨▨ ▨▨▨ ▨▨▨▨                                                 ║
║  ▨▨▨ ▨ ▨▨▨ ▨▨▨  ▨▨▨      Copyright(c) 1990                         ║
║  ▨▨▨ ▨▨ ▨▨▨ ▨▨▨  ▨▨▨     Telenex Corporation                      ║
║  ▨▨▨  ▨▨▨ ▨▨▨  ▨▨▨                                                 ║
║  ▨▨▨   ▨▨▨ ▨▨▨   ▨▨▨     All Rights Reserved                      ║
║                                                                    ║
║This program loads, merges (installs) and compiles Easy View        ║
║menu files and customizes Easy View programs.                       ║
║                                                                    ║
║     Enter <RETURN> To Perform Automatic Installation               ║
║        Enter Any Other Key To Customize Programs                   ║
║ ▀F 1▀   ▀F 2▀   ▀F 3▀   ▀F 4▀   ▀F 5▀   ▀F 6▀   ▀F 7▀    ▀F 8▀     ║
║ DATA            TRACE 3 PROG TR   STATS  DSP WND NO DISP            ║
╚══════════════════════════════════════════════════════════════════╝
```

Figure 19-3   Easy View Maintenance Program.

This screen identifies the Easy View Maintenance program (and its version number) and gives a general description of its scope and purpose. Decide which function you want the program to perform.

> *CAUTION: Before you begin, we strongly recommend that you make a backup copy of* mstrmenu.txt.

To begin an automatic installation, press ▣ from this screen. See Section 19.3.

Press a key other than ▣ to access the screens for customizing programs. See Section 19.4.

19.3 Automatic Installation

A library of selected application programs has been factory-installed in the *AR_APPS* directory of the hard disk. The subdirectories under *AR_APPS* categorize these programs by protocol and function. (See Section 19.7 for more information on the directory structure.) Additional AR-supplied application programs, available as options, may be added to the Easy View menus via the Easy View Maintenance utility.

If you do not need customized versions of a new application program and want to perform an automatic installation, place the diskette containing the application program and its script file into FD1, the left-hand floppy disk drive. (The script file that accompanies all AR-supplied application programs is named */MENU/install.txt* and resides on the same program diskette.) Press ▣ from the Easy View Maintenance program start-up screen (Figure 19-3).

The INTERVIEW automatically installs the application program into the appropriate Easy View menu so that it may be loaded, compiled, and run from Easy View. The INTERVIEW looks to FD1 for the program's script file and then merges it into *mstrmenu.txt* on the hard disk. Finally, the revised *mstrmenu.txt* is compiled to create an updated version of *mstrmenu.cmp*.

If you press ▣ to abort the process and exit the program, you are returned to the Utilities, Model and Demonstration Programs menu. Once the installation is complete, press any other key. The Easy View Maintenance Help screen is presented. See Figure 19-13. To return to the Easy View menus, press ▣.

You may also use the automatic installation feature to add selections to the Easy View menus for your own programs. First, however, create the script file the Easy View Maintenance program needs to perform an installation and save it to FD1 as */MENU/install.txt* (the default name for the source script file during automatic installation). See Section 19.5.

19.4 Customizing Programs

Refer again to Figure 19-3. Notice that if you press a key other than �, you can customize the setups of application programs. Use this feature to create multiple versions of a program.

An overview of the screens and commands used in creating program versions is presented in the example below. Detailed explanations for screens and commands are presented in the sections which follow.

(A) Example

Before we begin, make a backup copy of *mstrmenu.txt*. Also, go to the Easy View Setup Screen (press 🔲, �, UTILS, EZSETUP) and make the following selections: **Keep Easy View Menu Information In Memory: ░NO░** and **Display Program Warning Messages: ░NO░** . (If you want these selections to be permanent, press 🔲-🔲.)

For this example, we will load the script file *mstrmenu.txt* and create a new version of the Easy View ASYNC monitor program, **Standard ASYNC Setup.**

Access the Easy View Maintenance program. Then press the spacebar, or some other key except �, to present the Easy View Maintenance Help menu. See Figure 19-4.

```
*MON/LINE*                    BLK=          06/21/90 09:15



          ┌──── Easy View Maintenance Program Version 1.00 ────┐
          │                                                     │
          │ (F)NAM ED  - Filename Specification Editor          │
          │ (L)OAD     - Load Menus/Programs From Source Menu File
          │ (P)ROG ED  - Program Specification Editor           │
          │ (M)ERGE    - Merge Loaded Menus/Programs Into Dest. Menu File
          │ (C)OMPILE  - Compile Master Menu From Text To Compiled
          │ (E)RRORS   - Error Display Screen                   │
          │ (H)ELP     - This Help Screen                       │
          └─────────────────────────────────────────────────────┘



  █ F 1 █ █ F 2 █ █ F 3 █ █ F 4 █  █ F 5 █ █ F 6 █ █ F 7 █ █ F 8 █
 FNAM ED  LOAD    PROG ED  MERGE    COMPILE ERRORS           HELP
```

Figure 19-4 Easy View Maintenance Help menu.

This screen provides a brief description of the available screens and commands.

First, we need to indicate the script file we want loaded. The program we want to create new versions for is in this file. Identify the file on the Filename Specification Editor screen. Press FNAM ED. Type over the existing entry to change the name of the **Source (Load From) Menu File Pathname** to *HRD/MENU/mstrmenu.txt*. See Figure 19-5. For now, leave the other entries intact.

```
┌──────────────────────────────────────────────────────────────────────────┐
│ *MON/LINE*                    BLK=          06/21/90 09:15                 │
│ ┌──────────────────── Filename Specification ───────────────────────────┐ │
│ │                                                                        │ │
│ │  Source (Load From) Menu File Pathname:                                │ │
│ │   HRD/MENU/mstrmenu.txt                                                │ │
│ │                                                                        │ │
│ │  Destination (Merge To) Menu File Pathname:                            │ │
│ │   HRD/MENU/mstrmenu.txt                                                │ │
│ │                                                                        │ │
│ │  Master Menu Text (Compile From) File Pathname:                        │ │
│ │   HRD/MENU/mstrmenu.txt                                                │ │
│ │                                                                        │ │
│ │  Master Menu Compiled (Compile To) File Pathname:                      │ │
│ │   HRD/MENU/mstrmenu.cmp                                                 │ │
│ │                                                                        │ │
│ └────────────────────────────────────────────────────────────────────┘   │
│                                                                            │
│  ▄▄F 1▄▄  ▄▄F 2▄▄  ▄▄F 3▄▄  ▄▄F 4▄▄  ▄▄F 5▄▄  ▄▄F 6▄▄  ▄▄F 7▄▄  ▄▄F 8▄▄   │
│ FNAM ED   LOAD    PROG ED   MERGE    COMPILE ERRORS              HELP      │
└──────────────────────────────────────────────────────────────────────────┘
```

Figure 19-5 Load *mstrmenu.txt* for editing.

Now press LOAD. All of the setups for all of the programs you can access from Easy View menus are loaded from *mstrmenu.txt*.

Press PROG ED. The screen shown in Figure 19-6 should appear.

```
┌─────────────────────────────────────────────────────────────────────┐
│*MON/LINE*              BLK=            06/21/90 09:15                  │
│                   Program Specification                               │
│ Item Name: AUTOMON                                                    │
│ Item Description: Press <RETURN> to Automatically Configure Li        │
│ Dest. Pathname: HRD/AR_APPS/AUTOMON/AutomonStd                        │
│                                                                       │
│ Mode:    AUTOMON          Idle Suppress: NO                           │
│ Source:  LINE              DTE: Fₑ  DCE: Fₑ                           │
│  Block No: 0              Buffer Control Leads: YES                    │
│ Clock Source:    INTERNAL    Time Ticks: 1mS                          │
│  INT/DTE: 168000 DCE: 2400                                            │
│ NRZI: NO                                                              │
│                                                                       │
│ Capture Memory:       HRD                                             │
│ Data To Capture: BIT IMAGE                                            │
│ Initial Cond: NOT RECORD                                              │
│ Stop At: ENDLESS LOOP                                                 │
│  Number of Programs 131                       Program      1          │
│                                                                       │
│  F 1      F 2      F 3      F 4     F 5     F 6     F 7      F 8       │
│ FNAM ED  LOAD   PROG ED   MERGE   COMPILE ERRORS            HELP      │
└─────────────────────────────────────────────────────────────────────┘
```

Figure 19-6 This screen shows the setup for the *AUTOMON* selection on the Easy View Main menu. The setups for all Easy View programs are contained in *mstrmenu.txt*.

Look at the **Item Name** field at the top of the screen. The names in this field match selections on the Easy View menus. Use the [■] key to scroll through the listings from *mstrmenu.txt*. Watch the **Program** number in the lower right-hand corner of the screen. When it reaches 20, you should find the entry for **Standard ASYNC Setup**. It is illustrated in Figure 19-7.

```
┌─────────────────────────────────────────────────────────────────────┐
│*MON/LINE*              BLK=            06/21/90 09:15                  │
│                   Program Specification                               │
│ Item Name: Standard ASYNC Setup                                       │
│ Item Description: Standard ASCII Setup to Monitor at 2400 bps         │
│ Dest. Pathname: HRD/AR_APPS/ASYNC/MON/ASYNC24Set                      │
│                                                                       │
│ Mode:   MONITOR          Idle Suppress: NO                            │
│ Source: LINE              DTE: Fₑ  DCE: Fₑ                            │
│  Block No: 0             Buffer Control Leads: YES                     │
│ Clock Source:    INTERNAL    Time Ticks: 1mS                          │
│  INT/DTE: 2400    DCE: 2400                                           │
│ NRZI: NO                                                              │
│                                                                       │
│ Capture Memory:       HRD                                             │
│ Data To Capture: BIT IMAGE                                            │
│ Initial Cond: NOT RECORD                                              │
│ Stop At: ENDLESS LOOP                                                 │
│  Number of Programs 131                       Program     20          │
│                                                                       │
│  F 1      F 2      F 3      F 4     F 5     F 6     F 7      F 8       │
│ FNAM ED  LOAD   PROG ED   MERGE   COMPILE ERRORS            HELP      │
└─────────────────────────────────────────────────────────────────────┘
```

Figure 19-7 This screen shows the setup for the *Standard ASYNC Setup* selection on the Menu of ASYNC Monitor Programs. This setup is part of *mstrmenu.txt*.

Press [SAVE] to keep this entry accessible in the program listings.

Now press [CTRL]-[INSERT LINE]. The dummy entry shown below is inserted into the listing. Do not directly edit this entry. Dummy entries are place holders only.

```
*MON/LINE*                  BLK=           06/21/90 09:15
                       Program Specification
  Item Name: Item20
  Item Description: Description20
  Dest. Pathname: HRD/filename20

  Mode:    MONITOR            Idle Suppress: NO
  Source: LINE                 DTE: _   DCE: _
   Block No: _____            Buffer Control Leads: NO
  Clock Source:    EXTERNAL    Time Ticks: OFF
   INT/DTE: _____ DCE: _____
  NRZI: NO

  Capture Memory:     MULTI
  Data To Capture: BIT IMAGE
  Initial Cond: NOT RECORD
  Stop At:    END
   Number of Programs 132                      Program    20

  F 1     F 2     F 3     F 4     F 5     F 6     F 7     F 8
 FNAM ED  LOAD  PROG ED  MERGE  COMPILE ERRORS          HELP
```

Figure 19-8 Press [CTRL]-[INSERT LINE] to create a dummy entry.

Instead, press [LOAD]. The dummy entry is overwritten by a numbered version of the (Standard ASYNC Setup) program you just saved. See Figure 19-9.

```
*MON/LINE*                  BLK=           06/21/90 09:15
                       Program Specification
  Item Name: Standard ASYNC Setup20
  Item Description: Standard ASCII Setup to Monitor at 2400 bps
  Dest. Pathname: HRD/AR_APPS/ASYNC/MON/ASYNC24Set20

  Mode:    MONITOR            Idle Suppress: NO
  Source: LINE                 DTE: F_f  DCE: F_f
   Block No: 0                Buffer Control Leads: YES
  Clock Source:    INTERNAL    Time Ticks: 1mS
   INT/DTE: 2400 _ DCE: 2400 _
  NRZI: NO

  Capture Memory:     HRD
  Data To Capture: BIT IMAGE
  Initial Cond: NOT RECORD
  Stop At: ENDLESS LOOP
   Number of Programs 131                      Program    20

  F 1     F 2     F 3     F 4     F 5     F 6     F 7     F 8
 FNAM ED  LOAD  PROG ED  MERGE  COMPILE ERRORS          HELP
```

Figure 19-9 Numbered version of an Easy View program. Edit this entry to create your own version.

This is the entry we will edit to create a new version of this program. (The original is still in place; press ⬚ to view it. Then return to the numbered version by pressing ⬚.)

For this example, we will create a version of the Standard ASYNC Setup program that monitors a line speed of 9600 bps. Text you type on this screen overwrites existing text. The ⊟ and ⊞ keys move the cursor within a field. ⬚, ⬚, and ⬚ move the cursor between fields.

Type in a new **Item Name:** *Standard ASYNC Setup (9600).*

The **Item Description** field contains the text that appears toward the bottom of Easy View screens when the selection bar is over the menu item. Change this entry to read *Standard ASCII Setup to Monitor at 9600 bps.*

The **Dest. Pathname** field identifies the name and location of the program to run when the menu item has been selected. Give our new program the following pathname: *HRD/AR_APPS/ASYNC/MON/ASYNC96Set.*

Now we are ready to modify the setup for the program. The only change we want to make is to the line speed for internal clock. Use the ⬚ key to move to the **INT/DTE:** field. Change the speed from 2400 to 9600.

The information for our new version is complete. See Figure 19-10.

```
┌────────────────────────────────────────────────────────────────────┐
│*MON/LINE*              BLK=            06/21/90 09:15                │
│┌──────────────── Program Specification ───────────────────────────┐ │
││Item Name: Standard ASYNC Setup (9600)                            │ │
││Item Description: Standard ASCII Setup to Monitor at 9600 bps      │ │
││Dest. Pathname: HRD/AR_APPS/ASYNC/MON/ASYNC96Set                  │ │
││                                                                   │ │
││Mode:   MONITOR              Idle Suppress: NO                     │ │
││Source: LINE                  DTE: fₑ  DCE: fₑ                     │ │
││ Block No: 0                 Buffer Control Leads: YES             │ │
││Clock Source:   INTERNAL     Time Ticks: 1mS                      │ │
││ INT/DTE: 9600   DCE: 2400                                        │ │
││NRZI: NO                                                           │ │
││                                                                   │ │
││Capture Memory:      HRD                                           │ │
││Data To Capture: BIT IMAGE                                         │ │
││Initial Cond: NOT RECORD                                          │ │
││Stop At: ENDLESS LOOP                                             │ │
││ Number of Programs 131 ──────────────────── Program   20         │ │
│└───────────────────────────────────────────────────────────────┘ │
│ F 1     F 2     F 3     F 4     F 5    F 6     F 7     F 8          │
│FNAM ED  LOAD   PROG ED  MERGE  COMPILE ERRORS         HELP         │
└────────────────────────────────────────────────────────────────────┘
```

Figure 19-10 This setup for a new version of the Standard ASYNC Setup program will be added to *mstrmenu.txt* when the MERGE command is executed.

To incorporate this information into the existing *mstrmenu.txt* file, press the MERGE softkey. There will be an indication of errors at the end of the merge operation. Press the ERRORS softkey to view error messages. See Figure 19-11.

```
*MON/LINE*                BLK=          06/21/90 09:21
ASCII/8/NONE/ASYNC/1
↓         ↓         ↓      09:21    ↓         ↓         ↓
Copy file: Source and dest. pathnames are both
  'HRD/AR_APPS/ASYNC/MON/ASYNC24Set.d'
↑         ↑         ↑      09:21    ↑         ↑         ↑




 F 1     F 2     F 3     F 4     F 5     F 6     F 7     F 8
FNAM ED  LOAD   PROG ED  MERGE  COMPILE ERRORS          HELP
```
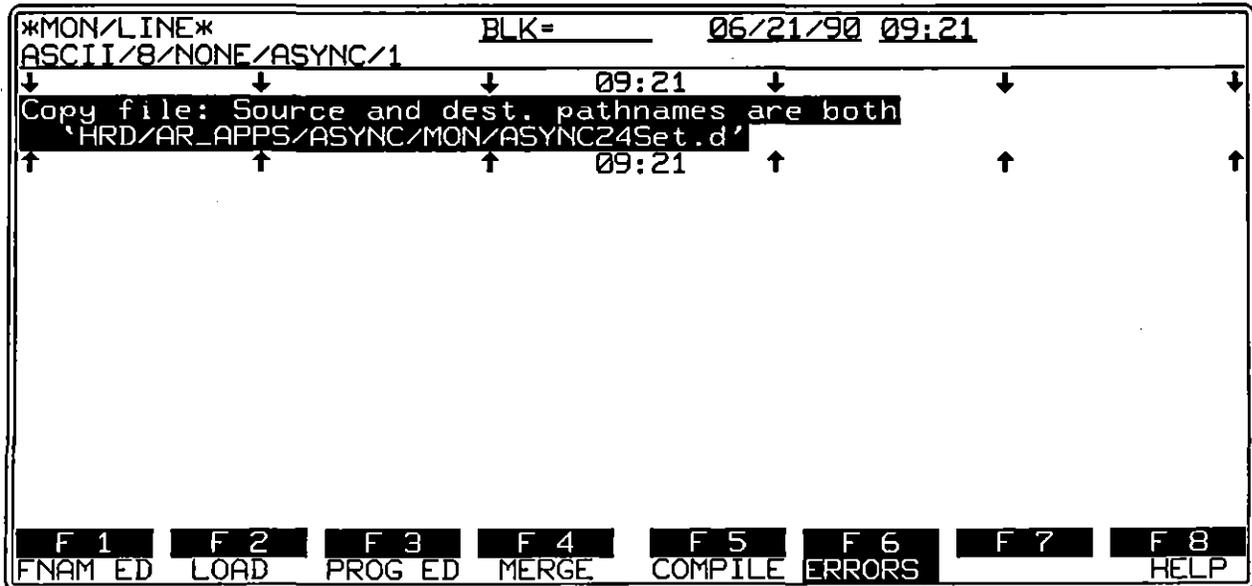
Figure 19-11 The Error Display screen.

The message you see indicates that an attempt was made to copy the help file that exists for the original Standard ASYNC Setup program. Duplicate copies of help files by the same name cannot be made. You can disregard this message, however, since the help file for the original will still be accessible and generally applicable for our new menu item.

Now press the COMPILE softkey. This command recreates the menu information file.

Press ▨▨ to return to the Easy View menus. If not already at the top of the menu hierarchy, press ▨▨ to return to the first location on the Easy View Main menu. Use the ⬇ key to move the selection bar to ASYNC and press ▨▨. Select the MONITOR item on the Menu of ASYNC Program Types. Press ▨▨. Our new version of the Standard ASYNC Setup program appears at the end of the Menu of ASYNC Monitor Programs. See Figure 19-12.

```
┌────────────────────────────────────────────────────────────────┐
│ ┌──────────────────────────────────────────────────────────┐ │
│ │      Menu of ASYNC Monitor  Programs              3│ │
│ ├──────────────────────────────────────────────────────────┤ │
│ │                                                            │ │
│ │         Standard ASYNC Setup                               │ │
│ │         ▐Standard ASYNC Setup (9600)▌                      │ │
│ │                                                            │ │
│ │                                                            │ │
│ │                                                            │ │
│ │                                                            │ │
│ │                                                            │ │
│ ├──────────────────────────────────────────────────────────┤ │
│ │      Standard ASCII Setup to Monitor at 9600 bps           │ │
│ └──────────────────────────────────────────────────────────┘ │
│ ┌──────────────────────────┬───────────────────────────────┐ │
│ │ ↑↓ move selection bar     │ RETURN select menu entry      │ │
│ │ ←  move to previous menu   │ HOME   move to top menu       │ │
│ │ →  move to next menu       │ EZ VU  exit/enter menus       │ │
│ └──────────────────────────┴───────────────────────────────┘ │
└────────────────────────────────────────────────────────────────┘
```
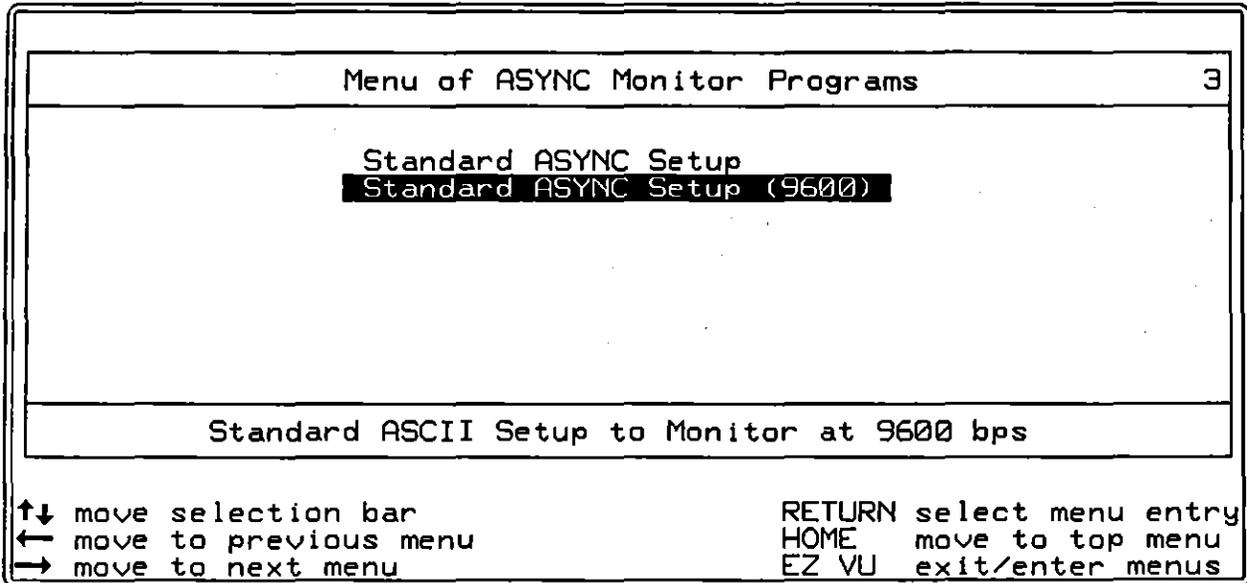
Figure 19-12 Our new entry, *Standard ASYNC Setup (9600)*, appears at the end of the Menu of ASYNC Monitor programs.

Now that you have a general idea of how to create a new version of an Easy View program, let's examine each screen and command in more detail.

(B) Easy View Maintenance Help Menu

The screen shown in Figure 19-13 is the Easy View Maintenance Help menu. It provides a brief description of each softkey's function. Pressing the function key (or the first letter of the softkey label) either accesses another screen or performs a command. LOAD, MERGE, and COMPILE are commands.

The softkeys are ordered according to the sequence of tasks you will perform. To customize an application program, first identify the script filename on the Filename Specification screen. Next, load into memory the setups from the the program(s) referenced in the script file via the LOAD command. Then, move to the Program Specification Editor screen. Once you find the program of interest, make the appropriate changes to the setups and menu information to create new versions. MERGE the new information into the master menu script file. As a final step, COMPILE the master menu information file. Refer again to Figure 19-1.

NOTE: Except for program editing, the automatic installation performs these same operations using the files named on the Filename Specification screen.

```
┌────────────────────────────────────────────────────────────────────────┐
│ *MON/LINE*               BLK=          06/21/90 09:15                     │
│                                                                          │
│                                                                          │
│        ┌─Easy View Maintenance Program Version 1.00─────────────┐        │
│        │ (F)NAM ED - Filename Specification Editor               │        │
│        │ (L)OAD    - Load Menus/Programs From Source Menu File    │        │
│        │ (P)ROG ED - Program Specification Editor                │        │
│        │ (M)ERGE   - Merge Loaded Menus/Programs Into Dest. Menu File │    │
│        │ (C)OMPILE - Compile Master Menu From Text To Compiled   │        │
│        │ (E)RRORS  - Error Display Screen                        │        │
│        │ (H)ELP    - This Help Screen                            │        │
│        └──────────────────────────────────────────────────────────┘      │
│                                                                          │
│                                                                          │
│  ▐ F 1 ▌  ▐ F 2 ▌  ▐ F 3 ▌  ▐ F 4 ▌  ▐ F 5 ▌  ▐ F 6 ▌  ▐ F 7 ▌  ▐ F 8 ▌ │
│ FNAM ED   LOAD    PROG ED   MERGE   COMPILE ERRORS              HELP     │
└────────────────────────────────────────────────────────────────────────┘
```

Figure 19-13 Help screen for Easy View Maintenance program.

(C) Filename Specification Screen

The source and destination files for each of the commands are identified on the Filename Specification screen, shown in Figure 19-14.   Before you can customize a program, you need to identify the appropriate files.   Press F or the FNAM ED softkey to access this screen.

The following editing keys function in the fields on this screen:

Key	Function
INSERT CHAR	Inserts a character at the cursor position.
RUB OUT	Deletes the character immediately preceding the cursor position.
DELETE CHAR	Deletes the character at the cursor position.
DELETE LINE	Deletes the line containing the cursor.
CLEAR	Clears the field containing the cursor.
SHIFT–CLEAR	Clears the field from the cursor position to the end.
SHIFT–→	Moves the cursor to the end of the current field.
SHIFT–←	Moves the cursor to the beginning of the current field.
→	Moves the cursor forward one character, or to the next field.
←	Moves the cursor back one character, or to the previous field.
TAB or RETURN	Moves the cursor to the next field.
SHIFT–TAB or SHIFT–RETURN	Moves the cursor to the previous field.
↓	Moves the cursor to the same location in the field below.
↑	Moves the cursor to the same location in the field above.

```
┌─────────────────────────────────────────────────────────────────────┐
│ *MON/LINE*              BLK=          06/21/90 09:15                  │
│ ┌──────────────── Filename Specification ─────────────────────────┐  │
│ │                                                                  │  │
│ │  Source (Load From) Menu File Pathname:                          │  │
│ │   FD1/MENU/install.txt                                           │  │
│ │                                                                  │  │
│ │  Destination (Merge To) Menu File Pathname:                      │  │
│ │   HRD/MENU/mstrmenu.txt                                          │  │
│ │                                                                  │  │
│ │  Master Menu Text (Compile From) File Pathname:                  │  │
│ │   HRD/MENU/mstrmenu.txt                                          │  │
│ │                                                                  │  │
│ │  Master Menu Compiled (Compile To) File Pathname:                │  │
│ │   HRD/MENU/mstrmenu.cmp                                          │  │
│ │                                                                  │  │
│ └──────────────────────────────────────────────────────────────────┘ │
│                                                                       │
│  ▄ F 1 ▄  ▄ F 2 ▄  ▄ F 3 ▄  ▄ F 4 ▄   ▄ F 5 ▄  ▄ F 6 ▄  ▄ F 7 ▄  ▄ F 8 ▄ │
│ FNAM ED   LOAD    PROG ED   MERGE    COMPILE  ERRORS            HELP   │
└─────────────────────────────────────────────────────────────────────┘
```

Figure 19-14 Filename Specification Editor screen.

For each field on the screen, enter the pathname of a file, beginning with a drive specifier—*HRD, FD1,* or *FD2.* If you do not include the drive specifier, an error message is displayed. You will not be able to enter a name that exceeds the maximum length of 126 characters (including the drive specifier).

1. *Source (Load From) Menu File Pathname.* The file named in this field is automatically loaded when you elect to customize programs. It is also the object of the LOAD command.

   The default pathname is *FD1/MENU/install.txt,* the name of the script file for AR-supplied application programs. The automatic installation uses the script file named in this field as the source for the install.

   If you are creating a script file to install your own program, either name your script file *FD1/MENU/install.txt* or change the entry in this field.

2. *Destination (Merge To) Menu File Pathname.* When you use the MERGE command, the Source file named in the field above is merged into the file named here.

   The default filename is *HRD/MENU/mstrmenu.txt.* In most instances, you do not need to change the entry in this field.

3. *Master Menu Text (Compile From) File Pathname.* This is the source file for the COMPILE command. Typically, it is the same file as the Destination file for the MERGE command. Again, the default filename is *HRD/MENU/mstrmenu.txt.*

4. *Master Menu Compiled (Compile To) File Pathname.* The file named in this field is the destination file for the COMPILE command. The default filename is *HRD/MENU/mstrmenu.cmp*. It is the compiled version of all the Easy View menu information.

(D) Load Command

Now press LOAD to load the setups for all the programs referenced in the Source file (named in the Filename Specification screen). The setups may be modified on the Program Specification screen.

A rotating arrow in the lower, right-hand corner of the display indicates that the load is in progress. Press [BRK] if you want to abort the LOAD operation.

> **NOTE:** The default Source file on the Filename Specification screen is automatically loaded when you elect to customize programs. If this is the file you wish to modify, you may bypass the LOAD command.

(E) Program Specification Screen

The setups of all of the programs referenced in the Source file (named in the Filename Specification screen) are available for editing in the Program Specification screen, shown in Figure 19-15. The versions you create on this screen are incorporated in the Destination file when you execute the MERGE command.

The fields in the top portion of the screen, Item Name, Item Description, and Dest. Pathname identify one of the programs referenced in the loaded script file. The fields in the bottom portion of the screen display the current setup parameters for the file specified in the Dest. Pathname field.

Use the cursor keys [PREV PAGE] and [NEXT PAGE] to scroll through the program listings. [SHIFT]-[PREV PAGE] moves you to the beginning of the list, [SHIFT]-[NEXT PAGE] to the end. Notice that the field entries on the Program Specification screen change as you scroll through the list of files.

If you scroll past the end of the program listings, a dummy entry, similar to the one shown in Figure 19-15, appears. The program count, explained in section 3. below, increments to include this extra entry. The dummy entry, explained in section 1. below, is simply a place holder in the program listing.

```
*MON/LINE*                      BLK=          06/21/90 09:15
┌────────────────────────Program Specification────────────────────────┐
│ Item Name: Item1                                                     │
│ Item Description: Description1                                       │
│ Dest. Pathname: HRD/filename1                                       │
│                                                                      │
│ Mode: ▓MONITOR▓               Idle Suppress: ▓NO▓                   │
│ Source: ▓LINE▓                 DTE: _   DCE: _                       │
│  Block No: ___                Buffer Control Leads: ▓NO▓            │
│ Clock Source: ▓  EXTERNAL  ▓  Time Ticks: ▓OFF▓                     │
│  INT/DTE: _____  DCE: _____                                       │
│ NRZI: ▓NO▓                                                          │
│                                                                      │
│ Capture Memory: ▓   MULTI   ▓                                       │
│ Data To Capture: ▓BIT IMAGE▓                                        │
│ Initial Cond: ▓NOT RECORD▓                                          │
│ Stop At: ▓   END   ▓                                                 │
│ ▓Number of Programs    1▓─────────────────────▓Program      1▓      │
│                                                                      │
│▓ F 1 ▓ ▓ F 2 ▓ ▓ F 3 ▓ ▓ F 4 ▓  ▓ F 5 ▓ ▓ F 6 ▓ ▓ F 7 ▓ ▓ F 8 ▓  │
│FNAM ED  LOAD  PROG ED  MERGE   COMPILE ERRORS              HELP      │
└──────────────────────────────────────────────────────────────────────┘
```

Figure 19-15 Default Program Specification Editor screen.

1. *Program identification fields.* The three fields in the top portion of the screen that identify a program—**Item Name, Item Description**, and **Dest. Pathname**—are text-entry fields.

   These fields use the same editing keys as the Filename Specification screen. (See Section 19.4(C) above.) There are a few additional keys, however, that have specific functions on this screen:

   [SAVE]   Saves the screen information (and also the location in the Easy View menus) about an entry in memory so that it can be recalled via the [LOAD] key.

   [CTRL]-[INSERT LINE] Inserts a dummy entry ahead of the entry containing the cursor. Use the dummy entry to hold a place for your new version in the program listing. Do not directly edit dummy entries.

   [LOAD]   Restores a new numbered version of the entry last saved via the [SAVE] key. (The entry currently displayed on the screen will be overwritten.) Repeat to load as many versions as you need. Edit these extra copies to customize your own versions.

   [CTRL]-[DELETE LINE] Deletes the entry containing the cursor from the program listing. Deleting an entry from this listing does *not* delete it as a menu selection from the Easy View menus.

   Item name. Use the **Item Name** field to locate the program you want to modify. The item name is the menu selection as it appears in the Easy View menus.

NOTE: If you loaded *mstrmenu.txt*, there are numerous
entries. To delete an entry, press ⌷-🔳. Deleting an entry
from the Program Specification screen, however, does *not*
delete it from the Easy View menus.

There are two methods for creating a new version of one of the
program listings. In the first method, simply overwrite the fields of a
program entry (not a dummy entry) shown in the display.

The second method keeps the original version in the listing and adds a
new version. First press 🔳 to keep the original entry in memory.
Then press ⌷-🔳 to insert a place holder in the program listings and
in the menus for your new version. Now press 🔳 to overwrite the
dummy entry with a numbered version of the original. Make any
modifications to this entry. (The original is still in the listings. Press
🔳 to view it.)

For either method, type in the new item name as you want it to appear
on the Easy View menu. You will not be able to enter a name that
exceeds the maximum length of 60 characters.

If the Easy View Setup screen (see Section 18) shows **Keep Easy View
Menu Information In Memory: No**, the new menu item is present when
you return to the Easy View menus. It is located at the end of the
same menu as the original entry. If the Easy View Setup selection is
YES, you can "force" the item to appear by changing the entry to **NO**
and loading a program, linkable–program, or object file (setup files do
not cause the entry to appear). Or, you can turn the INTERVIEW off
and then power up.

Item description. Use the **Item Description** field to enter some
descriptive text about the menu entry. This text will be displayed
toward the bottom of the Easy View menu screen whenever the
selection bar is over the menu item. You will not be able to enter more
than 62 characters.

Dest. pathname. The pathname of the file associated with the **Item
Name** is displayed in this field. It is the program that is actually loaded
and run when you select the **Item Name** on an Easy View menu.

Type in any valid INTERVIEW pathname, including a drive
specifier—*HRD, FD1,* or *FD2.* If you omit the drive specifier, an error
message is displayed. You will not be able to enter a name that
exceeds the maximum length of 126 characters (including the drive
specifier). For assistance in file naming conventions, see Section 19.7
(also Section 14).

2. *Setups.* The fields in the bottom portion of the Program Specification screen display the current setup parameters for the file specified in the **Dest. Pathname** field. Modify these fields for your new version.

View the available selections in a setup field by pressing ▦ and ▦.
Move to the next field by pressing ▭, ▣, or ▣. Use ▯ or ▭ to return to a previous field.

Most of these menu fields function as explained elsewhere in this manual:

For information on:	Refer to Section:
Line Setup	5
Record Setup	7
FEB Setup	9

A few of the setup fields on the Program Specification screen are a combination of two or more fields from the related Program–mode setup screen:

● **Source.** This field combines the **Source: DISK** and **Disk No.** fields of the Line Setup menu. Select from **LINE**, **FD1**, **FD2**, and **HRD**.

● **Capture Memory.** This field combines the **Capture Memory: DISK** and **Disk No.** fields and the **Capture Memory: RAM** and **Record Speed** fields of the Record Setup menu. Select from **FD1**, **FD2**, **HRD**, **MULTI**, **NORMAL RAM**, and **HIGH SPEED RAM**.

● **Time Ticks.** This field combines the **Time Ticks: ON** and **Tick Rate** fields of the Front–End Buffer Setup menu. Select from **OFF**, **1SEC**, **100mS**, **10mS**, **1mS**, **100uS**, and **10uS**.

All fields in the Setup portion of the screen are always present. There are, however, a few fields specific to selections made in the field that immediately precedes them:

● **Block No:** Enter a number only when **Source** is **FD1**, **FD2**, or **HRD**.

● **INT/DTE:** and **DCE:** Enter a speed only when **Clock Source** is **INTERNAL** or **INTERNAL SPLIT**. For the **INT/DTE:** field, you enter *either* an INTernal speed (when the **Clock Source** is **INTERNAL**) *or* a DTE speed (when the **Clock Source** is **INTERNAL SPLIT**). The **DCE:** field does not apply when **Clock Source** is **INTERNAL**.

● **DTE:** and **DCE:** Enter an idle character only when **Idle Suppress** is **YES**.

3. *Program count.* Notice the two highlighted boxes in the lower corners of the screen. The box on the left tells how many programs are referenced in the **Source** file. This count increments (or decrements) when you insert (or delete) entries from the listing.

The box on the right indicates the position within the program listing of the current entry. As you scroll through the program listings, the program number in the right-hand box changes.

(F) Merge Command

Once you have created your new version, use this command to merge the **Source** script file (and any changes made to it via the Program Specification screen) into the **Destination** file (named on the Filename Specification screen). If you are incorporating information into the Easy View menus, *HRD/MENU/mstrmenu.txt* is the **Destination** script file.

> NOTE: If you are merging your own script files, make sure the script follows the format explained in Section 19.5.

The MERGE operation uses dates within the **Source** and **Destination** script files to determine whether or not items in the destination file should be updated. See Section 19.5. If dates in the new (source) script file are more recent than dates in the old (destination) script file, merging is performed.

If, however, the new dates are the same as or earlier than the old ones, items in the destination file remain intact.

> NOTE: The date of the loaded script file is assigned to any modifications you make on the Program Specification screen.

A rotating arrow in the lower, right-hand corner of the display indicates that the merge is in progress. Press ⌊ᴹˣ⌋ if you want to abort the MERGE operation.

(G) Compile Command

This command takes the specified menu file, compiles it, and saves it to the pathname indicated on the Filename Specification screen. By default, the compiled file is *HRD/MENU/mstrmenu.cmp.*

A rotating arrow in the lower, right-hand corner of the display indicates that the compilation is in progress. Press ⌊ᴹˣ⌋ if you want to abort the COMPILE operation.

> *Caution: Only use the* COMPILE *command in the Easy View Maintenance utility program to compile* mstrmenu.txt. *Do not use the (C-compiler) File Maintenance Compile command.*

(H) Errors Screen

If errors occur during the execution of the LOAD, MERGE, or COMPILE command, you are instructed to go to this screen. To scroll through the list of errors, press ▥▥▥. Then use the cursor keys, ▥▥, ▥▥, ▢, and ▢, to move through the buffer. ▥▥-▢ moves you to the beginning of the buffer, ▥▥-▢ to the end. Press ▥▥▥ again when you leave this display.

The beginning and end of the current error list are delimited by the time the errors were written to the buffer. Additional error listings are appended to the end of the buffer. Once the buffer is full, the oldest error messages are forced out to accommodate the new ones.

(I) Help

Press the HELP softkey from any Easy View Maintenance screen to return to the main Help menu.

19.5   Script File Format

The Easy View utility FD1 Install File lets you view the contents of _FD1/MENU/install.txt,_ the script file for AR-supplied application programs. Position the selection bar over FD1 Install File on the Easy View Utilities, Model and Demonstration Programs menu and press ▥▥▥. All script files, including _mstrmenu.txt,_ follow the same format you see for _install.txt._

You may create your own script file on the INTERVIEW spreadsheet. Return to Program mode via the ▥▥ key. From the main Program menu, press SPDSHT, then ▥▥. Once you have completed your script file following the format described in this section, use the spreadsheet editor write command to save the file to disk: first, mark the text as a block; then press BLOCK, IN/OUT, WRITE/U, and the pathname of the file. For more information on the Spreadsheet editor, refer to Section 29.

> _CAUTION: Although we do not recommend that you edit_ mstrmenu.txt, _it is possible to make additional changes to the Easy View menus by directly editing this file. If you do, however, make sure that you have a backup copy before you begin._
>
> _Also be aware that during an automatic installation of optional programs or updates to Easy View (from AR), it is assumed that the order of the original menu hierarchy exists. If it does not, the program may restore this order._

NOTE: *mstrmenu.txt* is too large to be edited on the INTERVIEW. If you are going to directly edit this file, use the File Transfer Shell program to transfer it out of the INTERVIEW as text. (This program is selected via the Easy View Utilities, Model and Demonstration Programs menu.)

Select **Text File:** ▓▓▓ and make the transfer via null modem to a local PC running a terminal–emulation program that supports XModem, YModem, and YModem Batch transfer.

After the transfer is complete, exit the terminal–emulation program on the PC and save the text to a file with any name you wish. Use the PC's word processing to make your desired changes, and then save them to an ASCII text file. (Keep a backup copy of your revised file on the PC.)

Return to the terminal–emulation program and transfer the text back to the INTERVIEW. You must use YModem Single or XModem for the transfer in order for the INTERVIEW to import the file as (lowercase) *mstrmenu.txt*.

Run the Easy View Maintenance program. Press the spacebar (or any key except ▐▬▬▌) and Ⓖ (or the COMPILE softkey) to compile this new version of *mstrmenu.txt*. It is automatically saved as *mstrmenu.cmp*.

There are three categories of information within script files: system information, menu information, and menu–item information. See Figure 19-16 for the general format of a script file and Section 19.5(D) for sample script files.

(A) System Information

System information relates to the Easy View system as a whole. It includes a system title, date, and a command for the first menu to be displayed. System information must be included at the top of every script file.

1. *System title.* The top line of each Easy View menu screen contains a system title. By default, this line is blank. You can change this line by creating a new script file that contains a system title. (See the example in Section 19.5(D)1.)

   The system title has a maximum length of 64 characters. Enclose the title inside double quotes. The system title may include colons, but may not end with a colon. Otherwise, it will be interpreted as a label. See Section 3. below.

   The new title will be centered automatically on the Easy View menu screens.

```
              ┌  "SYSTEM TITLE"
   System     ┤  YYYYMMDD
 Information   └  GotoMenu LABEL1


   Menu       ┌  LABEL1: "Menu Title 1"
 Information   ┤  YYYYMMDD


              ┌  YYYYMMDD
              │  "ITEM NAME 1"
              ┤  "Item Description1"
              │  Help file pathname
              └  Command

 Menu-Item
 Information*     YYYYMMDD
              ┌  "ITEM NAME 2"
              │  "Item Description2"
              ┤  Help file pathname
              │  Command


                 LABEL2: "Menu Title 2"
                 YYYYMMDD


                 YYYYMMDD
                 "ITEM NAME 1"
                 "Item Description"
                 Help file pathname
                 Command

                            .
                            .
*  The Easy View Maintenance program     .
   uses matching menu-item names,
   not labels, to define the path through
   the menu hierarchy.
```

Figure 19-16 Script-file format.

If you do not plan to change the system title, you can enter the title as empty quotation marks ("") in the source file. The system title in the destination file will not be updated, regardless of the system–title dates in the source and destination files.

If the system title appears in the *destination* file as empty double quotes, however, the source system title will replace the destination title regardless of the system–title dates.

2. *System–title date.* On the next line, enter the system–title date. During the merge operation, this source date is compared with the system–title date in the destination file.

   If the source date is more recent than the destination date, the source system title and system–title date will replace the destination title and date. If the source date is the same or earlier than the destination date, the destination title and date remain intact.

   The format for all dates in script files is YYYYMMDD (Y=year, M=month, D=day). Leading zeroes are ignored.

   You may enter the date as zero in the source file if you do not want to change the system title and date in the destination file. A zero in the destination file typically means that the title will be updated.

   > NOTE: Be careful when you assign dates in script files. Since the current date is usually sufficient to guarantee that items in a new file will update items in an older one, it's best not to use future dates. Unless carefully tracked, future dates may inadvertently prevent items from being updated.

   > Also, note that dates are specific to the day only. They do not include hours, minutes, or seconds. This means that if you want to make an additional change to the same script–file item on the same day, you must advance the date by one day.

3. *GotoMenu Label.* This is always the first command in the script file. It directs the system to display the menu identified by the label reference. If you are merging a script file with *mstrmenu.txt*, the information about the menu indicated here is *always* compared with the Easy View Main menu.

   The script file uses labels to connect menus together. In *mstrmenu.txt*, these labels appear as the word "MENU," followed by a string of digits and terminated by a colon (:). Notice, however, that in the GotoMenu command, the label *reference* does not end with a colon. Unique labels are *assigned dynamically each time a script file is merged with mstrmenu.txt*. You cannot assume that the labels are stable from one time to another.

   If you are creating your own label, begin it with a non–number and end it with a colon. During the merge operation, your label is automatically replaced by a new unique label that follows the format described above.

   > NOTE: If you are directly editing *mstrmenu.txt*, use the current numbering scheme when referencing menu labels. (A printout of the file may help you track labels.)

(B) Menu Information

Each Easy View menu is entered from a *single* menu selection. If you want more than one menu selection to access the same menu, you must make duplicate copies of the menu, each with a unique label.

Menu information includes a menu title and a menu date. Each Easy View menu is identified in *mstrmenu.txt*. All script files must have at least one block of menu information.

1. *Menu title.* Each menu has an individual title with a maximum length of 58 characters. Enclose the title inside double quotes. The menu title may include colons, but may not end with a colon. Otherwise, it will be interpreted as a label. See Section 19.5(A)3. above.

   Menu titles are automatically centered on the menu-title line of Easy View menu screens.

   If you do not plan to change the name of an existing menu, you can enter the title as empty quotation marks (""). The menu title in the destination file will not be updated, regardless of the menu dates in the source and destination files.

2. *Menu date.* The menu date follows the menu title. Once a menu item (see (C) below) is matched during the merge operation, this source date is compared with the menu date in the destination file.

   If the source date is more recent than the destination date, the source menu title and menu date will replace the destination title and date. If the source date is the same or earlier than the destination date, the destination title and date remain intact.

   Use the date format and guidelines explained in section 19.5(A)2.

(C) Menu-Item Information

Information about each selection on a menu follows the menu title and date. There is no limit on the number of selections that an Easy View menu may have. Since each Easy View menu is entered from a *single* menu selection, however, you may not have duplicate selections on the same menu.

Menu-item information includes an item date, item title, item description, the pathname for an associated help file, and a command for the action to be executed when the menu item is selected.

1. *Item date.* For each menu item, there is a menu-item date. Once an item name is matched during the merge operation, (see 2. below) this source date is compared with the item date in the destination file.

NOTE: The only time this comparison does not occur is when the destination menu has an empty set of double quotes as a menu item. In this case, any unmatched source item will be considered a match for the quotes, regardless of the dates.

If the source date is more recent than the destination date, the source menu item and menu–item date will replace the destination item and date. If the source date is the same or earlier than the destination date, the destination item and date remain intact.

2. *Item name.* Each menu item has a maximum length of 60 characters. Enclose the title inside double quotes. (If you want an empty space in a menu, enter an empty set of double quotes.) The item name may include colons, but may not end with a colon. Otherwise, it will be interpreted as a label. See Section 19.5(A)3.

   During the merge operation, the INTERVIEW looks for matching menu–item names between the source and destination script files. Matching *menu items*, not labels and label references, to define the path through the menu hierarchy.

   If no match is found, it is assumed that a new menu selection should be created.

   A set of empty double quotes as an item name in the source file is a match only for empty quotes in the destination file. It simply means that a space should be reserved in the menu.

   If a menu item in the source script file matches one in the destination file, the item dates are compared.

3. *Item description.* Each menu item can have an associated line of descriptive text, automatically centered in the bottom box on the Easy View screen. This text is displayed whenever the selection bar is over the menu item. The text may contain up to 62 characters, including colons, but it may not end with a colon. Otherwise, the text will be interpreted as a label. See Section 19.5(A)3.

   If you do not want to include descriptive text about a menu selection, enter an empty set of double quotes ("").

4. *Help–file pathname.* If you want to make a help file accessible when the selection bar is positioned over the menu item, enter the file's pathname. The pathname does not have to be enclosed in double quotes, but it may be. Filenames have a maximum length of 126 characters (including the drive specifier). Absolute pathnames are preferred, although relative pathnames are permissible. Relative pathnames are assumed to be relative to the location from which the text menu file was loaded.

If the pathname includes directories that do not currently exist in the filing system, the INTERVIEW automatically creates them.

If you do not want to include a help file for a menu selection, enter an empty set of double quotes ("") for the pathname. If the associated item name is matched during the merge operation, however, any existing help-file pathname in the destination file remains intact.

See Section 19.6 for information on creating a help file.

5. _Command._ The last piece of information required for each menu item is a command instructing the system what to do when �▄ is pressed to execute the menu selection. There are three possibilities.

> _GotoMenu label._ The GotoMenu command directs the system to display the menu identified by the label.
>
> The script file uses labels to connect menus together. Matching _menu items_, not labels and label references however, define the path through the menu hierarchy.
>
> In _mstrmenu.txt_, labels appear as the word "MENU," followed by a string of digits, and terminated by a colon (:). Unique labels are _assigned dynamically each time a script file is merged with mstrmenu.txt._ You cannot assume that the labels are stable from one time to another.
>
> If you are creating your own label, begin it with a non-number and end it with a colon. During the merge operation, your label is automatically replaced by a new unique label that follows the format described above.
>
> _ViewFile pathname._ The ViewFile command directs the system to display the help or information file identified by the pathname. The pathname does not have to be enclosed in double quotes, but it may be. Filenames have a maximum length of 126 characters (including the drive specifier). Although absolute pathnames are preferred, relative pathnames are permissible. Relative pathnames are assumed to be relative to the location from which the text menu file was loaded.
>
> _ExecuteProgram pathname._ The ExecuteProgram command directs the system to load, compile, and run the program identified by the pathname. The file may be a program (PRGM), linkable-program (LPGM), or object (OBJ) file. (The rules governing hardware and/or software compatibility of the program between units, however, still apply. Consult Section 14.3(F).)
>
> The pathname does not have to be enclosed in double quotes, but it may be. Filenames have a maximum length of 126 characters (including the drive specifier). Although absolute pathnames are

preferred, relative pathnames are permissible. Relative pathnames are assumed to be relative to the location from which the text menu file was loaded.

Use the directory structure shown in Section 19.7 to guide you in choosing a directory for your program.

(D) Sample Script Files

Caution: Before you merge any script file with mstrmenu.txt, *make sure that you have a backup copy.*

NOTE: Before you begin, go to the Program–mode Easy View Setup screen (press ⌷ vu, ⊞⊞⊞, UTILS, EZSETUP) and select **Keep Easy View Menu Information In Memory:** ▓▓▓▓. (If you want this selection to be permanent, press ⊞⊞–⊞⊞.)

1. *Change the system title.* Enter a script file that follows the format shown in Figure 19-17 if you just want to change the system title.

```
System           ⎧  "My System Title"
Information      ⎨  19900723
                 ⎩  GotoMenu LABEL1

Menu             ⎧  LABEL1: ""
Information      ⎩  0
```

Figure 19-17 Minimum script file for adding a system title
to the Easy View menus.

- Enclose your new title in double quotes on the first line of the script file.

- Enter the date.

- Enter the GotoMenu command. The label reference can be anything, as long as it follows the syntax rules.

- At least one block of menu information must appear in every script file. Enter a label using the same name as referenced in the GotoMenu command above. Terminate the label with a colon. Normally, you would not change the title for an existing Easy View menu; enter an empty set of double quotes and a zero for the menu–title date.

NOTE: If you use the format of this example, a blank entry is added to the end of the Easy View Main menu. If you do not want this extra entry, include an existing menu item in your script file. For example:

0
"AUTOMON"
" "

" "

ViewFile "FD1/usr/any_file"

Notice that the date is zero. This means that the existing menu-item information will not be updated. We suggest that you use the ViewFile command in the menu-item information since the GotoMenu command always causes a blank line to be added to some menu and the ExecuteProgram command requires the exact pathname of an existing program.

● Mark the text as a block and use the Spreadsheet editor WRITE/U command to save it as *FD1/MENU/install.txt*. See Section 29. Then access the Easy View Maintenance program and use the automatic installation feature to merge *FD1/MENU/install.txt* (source) with *HRD/MENU/mstrmenu.txt* (destination). See Section 19.3.

2. *Add a new selection to the Easy View Main menu.* Assume you have a program called *set_fkey* that assigns labels to the function keys in the Display Window. You want to add this program to the Easy View system. Figure 19-18 illustrates the script file you might create to install the program on the Easy View Main menu. (This example also incorporates a change to the system title.) The new entry will appear at the bottom of the top-level menu.

System Information	"My System Title" 19900723 GotoMenu LABEL1
Menu Information	LABEL1: " " 0
Menu-Item Information	19900723 "My Program" "This program sets the softkey labels for the Display Window" " " ExecuteProgram "FD1/usr/dsp_wnd/set_fkey"

Figure 19-18 Script file for adding a system title and new selection to the end of the Easy View Main menu.

● Define the system title, if any, that will appear at the top of the Easy View menu screens.

● Enter the GotoMenu command. The label reference can be anything, as long as it follows the syntax rules.

● Enter a label for the Easy View Main menu using the same name as referenced in the GotoMenu command above. Terminate the label with a colon. The label, *LABEL1*, will be replaced by digits during the installation. Normally, you would not change the title for an existing Easy View menu; enter an empty set of double quotes and a zero for the menu-title date.

● Next, enter information about your new menu item. To ensure that any existing menu item by the same name will be updated, use the current date. Then, enter the selection as you want it to appear on the Easy View Main menu: My Program.

● When the selection bar is over the new menu item, the descriptive text—*This program sets the softkey labels for the Display Window*—will appear in the bottom box of the menu screen.

● If you do not have a help file associated with the menu item, the help-file pathname is an empty set of quotation marks.

● Finally, specify the action to be taken when the selection bar is over My Program and you press ▨: load, compile, and run the program in *FD1/usr/dsp_wnd/set_fkey*.

● Save the script file as *FD1/MENU/install.txt*. Then access the Easy View Maintenance program and use the automatic installation feature to merge *FD1/MENU/install.txt* (source) with *HRD/MENU/mstrmenu.txt* (destination). See Section 19.3.

3. *Add a new selection to the Menu of SDLC Emulation Programs.* Suppose you have an SDLC emulation program to add to the Easy View system. The Menu of SDLC Emulation Programs is a third-level Easy View menu.

The script file begins with the system information (see Figure 19-19):

● If you do not want to change the system title, enter empty quotation marks for the title (and a zero for the date).

● Enter the GotoMenu command. The label reference can be anything, as long as it follows the syntax rules.

```
System              {  " "
Information          {  0
                     {  GotoMenu LABEL1

                     {  LABEL1: " "
                     {  0
Easy View            {
Main Menu            {  0
Information          {  "SDLC"  ◄
                     {  " "
                     {  " "
                     {  GotoMenu LABEL2

                     {  LABEL2: " "
                     {  0
Second-Level         {
Menu                 {  0
Information          {  "EMULATION"  ◄
                     {  " "
                     {  " "
                     {  GotoMenu LABEL3

                     {  LABEL3: " "
                     {  0
Third-Level          {
Menu                 {  19900723
Information          {  "My SDLC Emulation Program"
                     {  "This is an SDLC emulation program I added to Easy View"
                     {  " "
                     {  ExecuteProgram "HRD/AR_APPS/SDLC/EMUL/my_prog"
```

Define the path through the Easy View menu hierarchy via menu-item names.
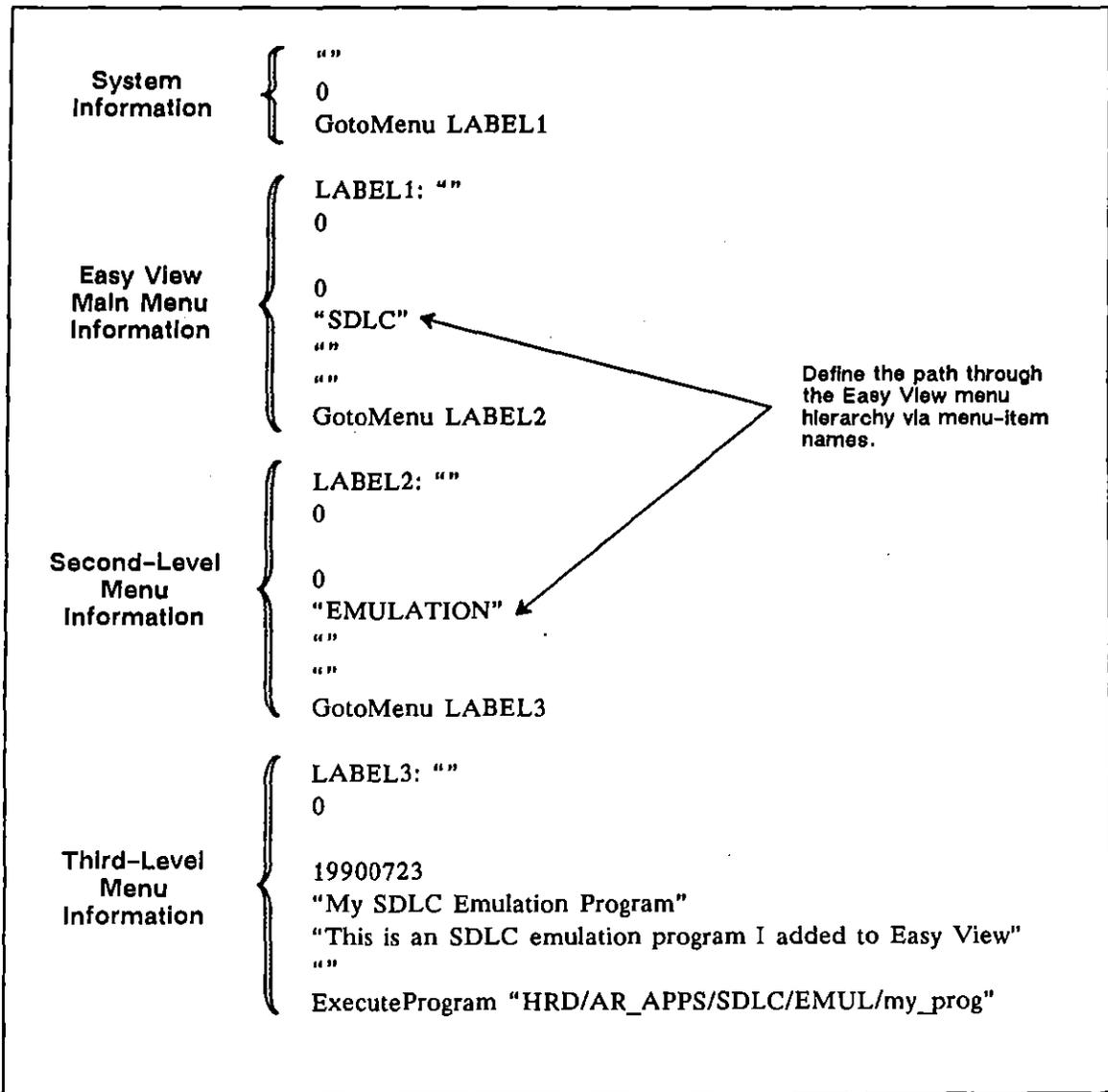
Figure 19-19 Script file for adding a new selection to a third-level Easy View menu.

Enter Easy View Main menu information:

● Enter a label for the Easy View Main menu using the same name as referenced in the GotoMenu command above. Terminate the label with a colon. Normally, you would not change the title for an existing Easy View menu; enter an empty set of double quotes and a zero for the menu-title date.

- The path for accessing the Menu of. SDLC Emulation Programs begins at the Easy View Main menu with the SDLC menu item. The Easy View Maintenance program uses matching menu–item names to move from menu to menu. So, enter "SDLC" as the menu item.

- There are no changes to this menu item, so enter empty quotation marks for the descriptive text and help file pathname and a zero for the menu–item date.

- Enter the GotoMenu command. Enter a new label reference for the second–level Menu of SDLC Program Types.

Enter second–level menu information:

- Enter a label for the Menu of SDLC Program Types using the same name as referenced in the GotoMenu command above. Terminate the label with a colon. Normally, you would not change the title for an existing Easy View menu; enter an empty set of double quotes and a zero for the menu–title date.

- The path for accessing the Menu of SDLC Emulation Programs continues from the Menu of SDLC Program Types with the EMULATION menu item. So, enter "EMULATION" as the menu item.

- There are no changes to this menu item, so enter empty quotation marks for the descriptive text and help file pathname and a zero for the menu–item date.

- Enter the GotoMenu command. Enter a new label reference for the third–level Menu of SDLC Emulation Programs.

Enter third–level menu information:

- Enter a label for the Menu of SDLC Emulation Programs using the same name as referenced in the GotoMenu command above. Terminate the label with a colon. Normally, you would not change the title for an existing Easy View menu; enter an empty set of double quotes and a zero for the menu–title date.

- Next, enter information about your new menu item. Use the current date. Then, enter the selection as you want it to appear on the Easy View Main menu: My SDLC Emulation Program.

- When the selection bar is over the new menu item, the descriptive text—*This is an SDLC emulation program I added to Easy View*—will appear in the bottom box of the menu screen.

- If you do not have a help file associated with the menu item, the help-file pathname is an empty set of quotation marks.

- Finally, specify the action to be taken when the selection bar is over My SDLC Emulation Program and you press ▣: load, compile, and run the program in *HRD/AR_APPS/SDLC/EMUL/my_prog.* (Notice that the program is located in the Easy View directory structure. See Section 19.7.)

- Save the script file as *FD1/MENU/install.txt.* Then access the Easy View Maintenance program and use the automatic installation feature to merge *FD1/MENU/install.txt* (source) with *HRD/MENU/mstrmenu.txt* (destination). See Section 19.3.

19.6 Creating a Text (Help) File

The Easy View help and information files are normally INTERVIEW files of type ASCII. Since Easy View does not check the file type, however, any files which contain ASCII text may be used.

To make your own help files accessible from the Easy View system, reference them in the menu-item information of your script file. See Section 19.5(C).

(A) Format

Easy View text files must use the following format.

- Files are limited to 32,767 characters. If a longer file is encountered, only the first 32,767 characters in it are used.

- File should contain only printable ASCII characters and new line (line feed) characters.

- Format the text as 64-character lines terminated by a new line character. The 64 characters *excludes* the new line. Lines exceeding 64 characters are truncated when they are displayed on the screen.

- The page length on the INTERVIEW screen is 20 lines. If you restrict your pages to this length, you can use the ▣ and ▣ keys to easily scroll through the file.

- Text file pathnames have a maximum length of 126 characters *including* the disk drive specifier. Choose from the following drive specifiers: *HRD, FD1,* and *FD2.*

When the menu system tries to open a text file, it uses the drive specifier in the file's pathname to determine where it should search for the file. The following

table shows which drives are searched and the order in which they are accessed.
The same strategy is followed when running a program from a menu.

Pathname Starts With	Order of Search
HRD	*HRD*
FD1	*FD1, FD2*
FD2	*FD2, FD1*

19.7 Easy View Directory Structure

The directory structure for the Easy View system is similar to the menu structure.
See Figure 19-20.
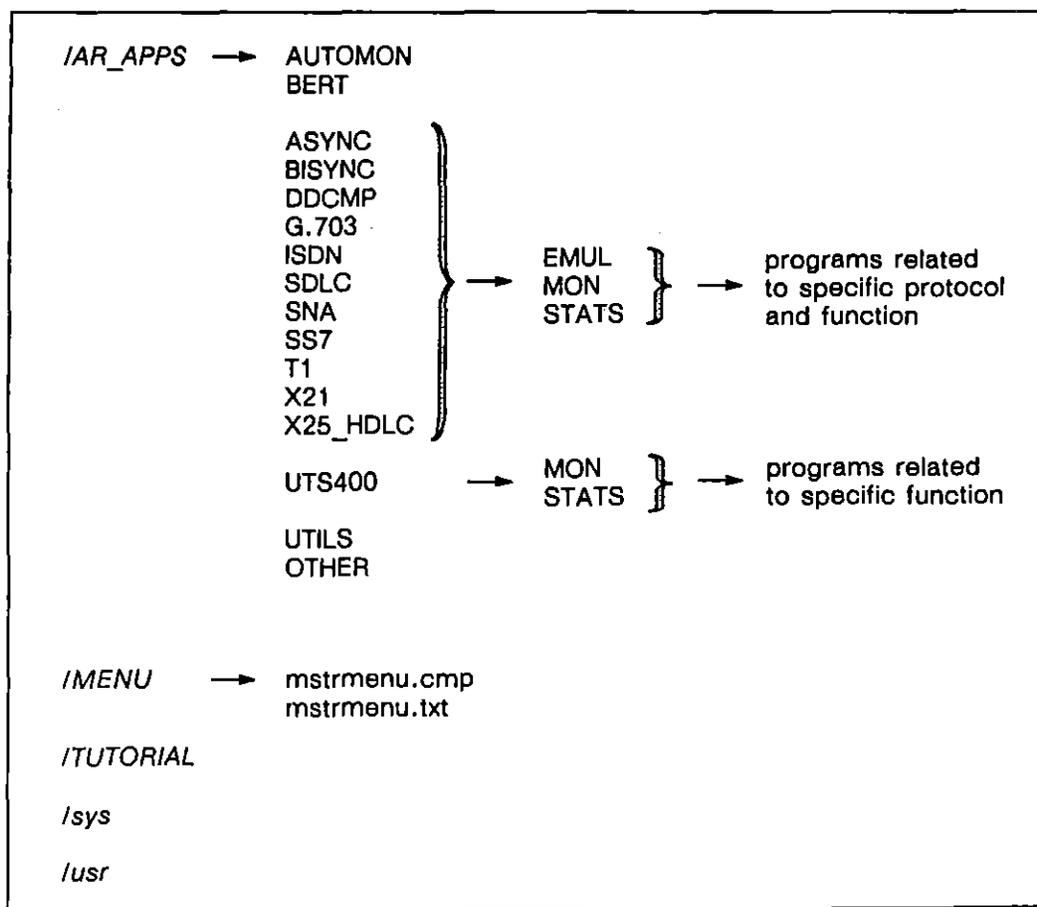
Figure 19-20 Easy View directory structure on the hard disk.

All of the AR-supplied application programs that you can load and run from an Easy View menu are located in one of the subdirectories of the */AR_APPS* directory on the hard disk. The subdirectories are named by protocol and are similar to the Easy View Main menu selections. Find the appropriate protocol subdirectory and change directories. The next set of subdirectories groups the programs according to the function they perform: emulation, monitoring, or statistics.

The script file for the Easy View system and the compiled menu-information file reside in the */MENU* directory on the hard disk.

Help files and tutorials reside in the */TUTORIAL* directory of the hard disk.

The */sys* and */usr* directories may include programs, *#include* files, and setups. These two directories also contain the INTERVIEW system software.

You may want to follow these file-naming conventions:

● Program names use upper and lower case as needed to improve readability.

● Program names are limited to ten characters, plus an extension.

● Object (OBJ), linkable-program (LPGM), and other run-time source files do not have extensions. Run-time source files are those which contain everything needed for the program to run in a single file.

● Otherwise, an extension identifies the contents of a file.

.d	document/help for applications
.t	tutorial on protocols or other non-INTERVIEW related subject
.i	instructions/help related to operation of the INTERVIEW
.s	spreadsheet source (not run-time source)
.c	C-language source
.h	C-language header (*#include* file)
.o	linkable-object file