Editware
Grass Valley, California
Edit Control Solutions - System Applications

OPERATIONS MANUAL

LE-2000 Linear Plus! Edit Controller

Manual Version 3 – Rev. June 13, 2008
Editware, Inc.

This page intentionally left blank

CP3 Control Panel
Manual Version 3, revised June 13, 2008
SW Rev 6.0.0

This page intentionally left blank

Table of Contents

For more detailed search items, see the **INDEX** at the rear of this manual.

Conventions Used In This Manual 11
System Contents & Specifications 13
The Edit Screen 15
The Control Panel 19

1. Getting Started 21
1.1 System Reference 21
1.2 General Connections 21
1.3 Using XTREE to change your mixer & switcher drivers 21
1.4 Assigning Ports to VTRs 23
1.5 Assigning Reel IDs (Names) to VTRs and Crosspoints 24
1.5.1 Swap Reel IDs 24
1.6 Assigning Crosspoints (XPT) 25
1.6.1 Assigning a Device ID 26
1.7 Reset the System to its Default Condition 27

2. VTR Transport Control 29
2.1 Controlling VTRS Manually 29
2.1.1 Shuttle, Jog and Variable 29
2.1.2 Increment Frame-By-Frame 29
2.1.3 Stand-by Off (Scanners Off) 29
2.1.4 Eject Tapes 30
2.1.5 PLAY -, PLAY + (Frame Bump) 30
2.1.6 ALLSTOP (Spacebar) 30
2.2 VTR Status Messages 30
2.3 Disable / Enable a VTR 31
2.4 Cue & Search Functions 31

3. Source Selection and Control 33
3.1 Selecting Individual Sources 33
3.2 Selecting Multiple Sources 33
3.2.1 Gang 33
3.2.2 Master Slave 34
3.2.3 Multi-Record - Slaving Multiple Record VTRs in Master/Slave Mode 35
3.2.4 Multi-Record - Ganging Multiple Record VTRs in Gang Mode 36
3.2.5 Manual Transitions 37
3.2.6 Synchronized Play 37

4. Defining Edit Points 39
4.1 Marking IN and OUT Times 39
4.2 Setting IN, OUT and DURATION Times 39
4.3 The Keyboard Register 40
4.3.1 Frames and Timecode 40
4.4 The Trim Register 41

4.4.1 Frames and Timecode 41
4.5 Control Track Editing 41
4.6 Drop-frame Timecode (NTSC) 41
4.7 The Timecode Calculator 42
4.8 The AUX Menu - Assigning Timecode Parameters 43
4.9 Clear and Undo Functions 44
4.9.1 Clear 44
4.9.2 Undo 45
4.10 TAG (TimeTracking) 45
4.10.1 TAG (Source Tag) 46
4.10.2 R-TAG (Record Tag) 46
4.10.3 ATN-TAG (Action Tag) 46
4.11 Match 46
4.11.1 Record Match 46
4.11.2 Source Match 48
4.11.3 Auto Match 48
4.11.4 SYN-REF 48
4.11.5 SYNC 48
4.12 Constants 49

5. Preview 51
5.1 Preview Mode Selection & Setup 51
5.2 Performing Previews 52
5.2.1 Pre-roll 52
5.2.2 Post-roll 52
5.2.3 Preview Options 52

6. Record 55
6.1 Record Overview 55
6.2 Recording 55
6.3 Durations 55
6.4 Insert Mode 56
6.4.1 Audio Cue Channels 56
6.4.2 Timecode Track 57
6.4.3 Live To List 57
6.5 Assemble Mode 57
6.5.1 First Edit 57
6.5.2 Manual Record (Hard Record) 58
6.6 Split Edit 58
6.7 Multiple Record VTRs 59
6.7.1 Multi-Record - Slaving Multiple Record VTRs in Master/Slave Mode 60
6.7.2 Multi-Record - Ganging Multiple Record VTRs in Gang Mode 61
6.8 Preread 62
6.9 Next Edit Number 62

7. Switcher & Mixer Control 63
7.1 Transitions & Effects 63
7.1.1 Cuts 63
7.1.2 Dissolves (Mixes) 63

7.1.3 Wipes (Patterns) 64
7.1.4 Delayed Transitions 65
7.1.5 Keys 65
7.1.6 Manual Transition 67
7.1.7 E-MEM ® (Effects Memory) 68
7.1.8 Cue ALL Recorder(s) and Player(s) 68

8. The INIT Page 69
8.1 INIT Page Settings 70
8.1.1 Monitor Mode 70
8.1.2 Color Framing Adjust 70
8.1.3 Assemble Edit 71
8.1.4 Video Switcher 71
8.1.5 Audio Mixer 71
8.1.6 Monitor Switching 72
8.1.7 Pre-roll Frames 72
8.1.8 Post-roll Frames 72
8.1.9 Sensitivity for Jog 72
8.1.10 Sensitivity for Variable & Shuttle 72
8.1.11 Reaction Time 73
8.1.12 Warn beep 73
8.1.13 No_Zeros 73
8.1.14 NoEDL Zeros 73
8.1.15 Keep*, Master 73
8.1.16 Repeat_Failed 73
8.1.17 FixRecordOut 74
8.1.18 CleanScreen 74
8.1.19 SwapFromTo 74
8.1.20 KeepSlow 74
8.1.21 Synchro_Slow 74
8.1.22 StopOnComment 74
8.1.23 All_Still 74
8.1.24 HoldLock 74
8.1.25 JogDirect 75
8.1.26 LivetoList 75
8.1.27 Hide EDL 75
8.1.28 Frame Freeze - This feature is currently not implemented 75
8.1.29 AllstopSafety 75
8.1.30 SeekRecordReel 75
8.1.31 SwapRecordVTR 75
8.1.32 StillBeep 76
8.1.33 AutoTrack 76
8.1.34 Match A/V 76
8.1.35 Match Time 76
8.1.36 To-Dblpress 76
8.1.37 RogerBeep 76
8.1.38 AlwaysAddEdit 76
8.1.39 Profile Preroll 76
8.2 User Files (Configuration Files) 76

8.2.1 Loading a User File 77
8.2.2 Saving a User File 77

9. Slo-mo (Vari-Speed) 79
9.1 Programming Speeds 79

10. GPIs (General Purpose Interface) 81
10.1 Setting a GPI 81
10.2 GPI Sub-Registers 82
10.3 GPI inputs 82
10.4 GPI Connector and Pin-outs 83

11. EDL – Edit Decision List 85
11.1 Moving Through the EDL 85
11.2 Dummy Edits (Add Edits to the EDL) 88
11.3 Recall an Edit from the EDL 88
11.3.1 Recall a specific edit from the EDL 88
11.3.2 Recall previous or next edit from the EDL 89
11.4 Delete Edit(s) From The EDL 89
11.4.1 Delete a single edit from the EDL 89
11.4.2 Delete a Block of edits from the EDL 90
11.4.3 Delete all edits from the EDL 90
11.5 Ripple Edit (s) In The EDL 90
11.5.1 Renumber the EDL 90
11.5.2 Ripple selected Source times in the EDL 91
11.5.3 Ripple selected Recorder times in the EDL 91
11.5.4 Ripple all Source times in the EDL 91
11.6 EDL Undo (Cancel Changes to the EDL) 92
11.7 EDL Search Functions 92
11.7.1 Search to a Timecode Number from the EDL 92
11.7.2 Search the EDL for a Timecode Number 92
11.7.3 Search the EDL for a Reel ID 92
11.8 Notes (Add Notes to the EDL) 92
11.9 Save & Load EDL Files 93
11.9.1 Loading an EDL File 93
11.9.2 Save and Continue Working with Same EDL 93
11.9.3 Create a New EDL 94
11.10 The JOB Function Menu 94
11.11 Hide the EDL 94
11.12 Importing EDLs 94

12. Auto-Assemble 95
12.1 BLOCK sub-Menu Settings for Auto Assembly 95
12.2 JOB Function Menu Settings for Auto Assembly 95
12.3 INIT Page Settings for Auto Assembly 95
12.4 Performing the Auto Assembly 96

13. Macros 97
13.1 Programming a Macro 97

13.2 Perform a Macro 99
13.3 Save and Load Macro Files 99
13.3.1 Saving a Macro File 99
13.3.2 Loading a Macro File 99
13.4 Loop a Macro 100
13.5 Nest a Macro 100

14. TBC Control 101
14.1 Defining the TBC Port 101
14.2 Adjusting TBC Levels 101

15. File I/O (Load & Dump) 103
15.1 LOAD and DUMP (Save) 103
15.2 DOS convention for file names 105
15.3 DOS convention for wildcards 105

16. Technical Information 107
16.1 Full Software Installation 107
16.1.1 Create a Bootable DOS Partition 107
16.1.2 Install the LE-2000 software 108
16.2 Installing Software Updates 109
16.2.1 Restoring Previous Software 110
16.3 Managing LE-2000 System Data Files 110
16.3.1 Starting and Closing XTREE 110
16.3.2 Starting the LE-2000 application from the DOS prompt 110
16.3.3 The Initialization file (LIFT.INI) 111
16.3.4 Using XTREE to modify the Initialization file (LIFT.INI) 111
16.3.5 LIFT.HLP (Context-Related Help) 113
16.3.6 USER Files (*.MEM) 113
16.3.7 LIFT.SPD 113
16.4 Machine Control Drivers 113
16.4.1 Auto-detection of devices 114
16.4.2 DEV files for VTRs and related devices: 114
16.4.3 Video Switcher Driver 115
16.4.4 Audio Mixer Driver 115
16.4.5 Using XTREE to DELETE driver files 116
16.4.6 Using XTREE to COPY driver files 116
16.4.7 Pattern Table 116

This page intentionally left blank

Conventions Used In This Manual

- Keystrokes shown in the body of the text are shown in uppercase, bold, and in brackets. For example, **[CLEAR]**. All keystrokes are understood to be specific to the Control Panel unless otherwise marked.

- The **SHIFT** and **CONTROL** key are to be held down while a second key is pressed. They are always shown before the second key to be pressed. For example, **[SHIFT][ASSIGN]** or **[CTRL][ASSIGN]**.

- When keys are to be pressed in sequence they are separated by a comma. For example, **[DUR], [2], [0], [00], [ENTER].**

- Some commands require a keystroke to be pressed twice in quick succession. These keystrokes are separated by the plus (+) symbol. For example, **[P1]+[P1]**.

- Items such as **<time>** and **<desired number>** refer to data, usually timecode values, yet to be defined or entered.

- **[REC]-[P1-P9]** refers to the appropriate REC, P1, P2, P3, P4, P5, P6, P7, P8 or P9 source keys, and AUX1, AUX2 and BLACK where applicable.

- The term "**VTR**" is used generically to refer to compatible controlled devices whether they are VTRs, VCRs, zero pre-rolled devices, Digital Video Disk Recorders, RAM recorders or other devices running in VTR emulation.

- The term "**current**" always refers to the selected or highlighted source, line or item.

- The term "**primary recorder**" always refers to the Record VTR in the first VTR position of the edit screen.

- Wherever possible, references are given to enable the user to find additional information about the current subject matter. For example, **{Ref: 2.1.5}.** This example references to chapter **2**, sub-header **1**, and item **5**.

- Wherever possible, references are given to enable the user to locate a key being discussed in the current subject matter. For example, **{CP10}.** This example references section **10** of the Control Panel.

- In order to add audio record channels 9-12 for some newer devices in Version 6, accommodations were made for adding extra characters to the Marks Table and EDL. For this reason we have opted to display these additional audio channels in hexadecimal format.

  The hexadecimal number is base 16. In any place there can be the numbers 1 through 9 and also the letters A through F. In a hexadecimal number the letters A through F represent the numbers 10 through 15; A=10, B=11, C=12, D=13, E=14 and F=15.

  Therefore, in software Version 6 (and higher), **[A]** (the MASTER key {CP3}), **[B]** (the MACRO key {CP3}) and **[C]** (the GPI key {CP3}) are used to toggle audio channels **10, 11** and **12** respectively.

This page intentionally left blank

System Contents & Specifications

The standard LE-2000 Series Editing System ships with the following items:

Contents

- This Editing System manual
- The LE-2000 Editing System in the rack-mount chassis
- The CP3 Control Panel with incorporated Jog Knob & CAT 5 cable
- CP3 PCI card (installed)
- Serial Port PCI card (installed)
- Serial Breakout Panel with 8 RS-422 connectors
- PS2 Keyboard with 10m extension cable

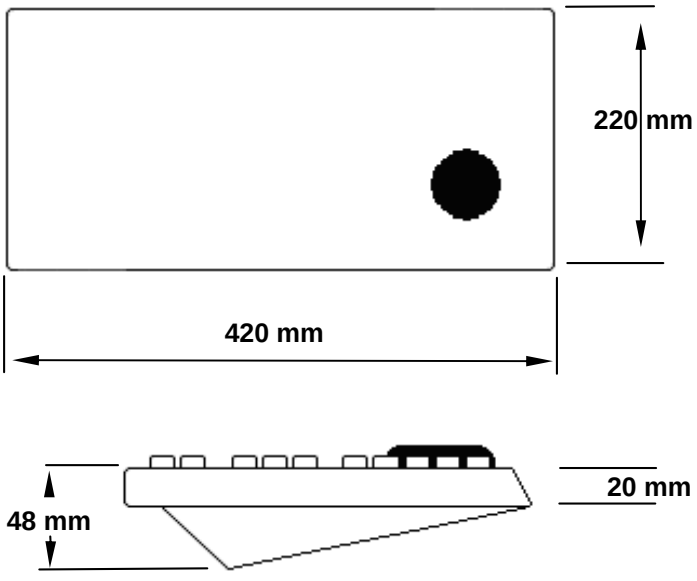
Hardware & Software Specifications*

The LE-2000 Series Editor is FCC, UL, CE and RoHS compliant.

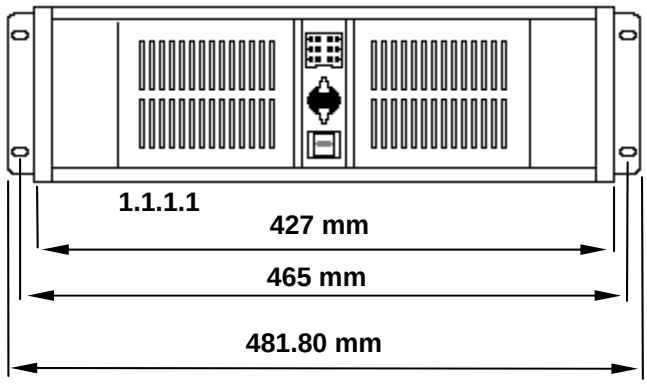
- AMD processor
- 80GB+ High Speed (7200 rpm) SATA hard disk formatted 900MB in the DOS environment
- 1.4MB 3.5 floppy disk drive
- Sync / GPI card installed
  - 8 GPI output connections; 3 GPI input connections; 5V source
  - BNC input loop for color black reference (do not use tri-level sync)
- 1.2mm SECC Zinc-coated steel frame
- 300W, 110VAC / 220VAC auto-switching power supply
- DOS Version 7
- LE-2000 editing software

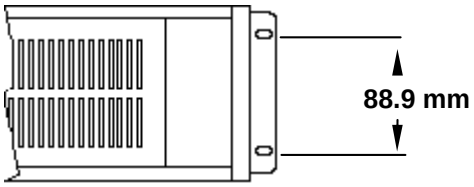
* We reserve the right to substitute parts and components in this system that meet or exceed those listed.

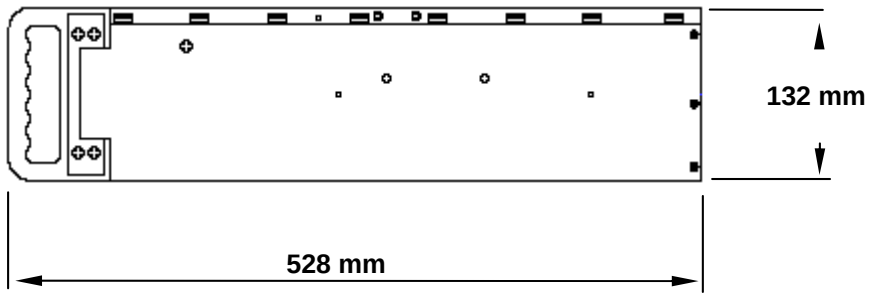
Control Panel Dimensions Frame Dimensions



Frame Dimensions

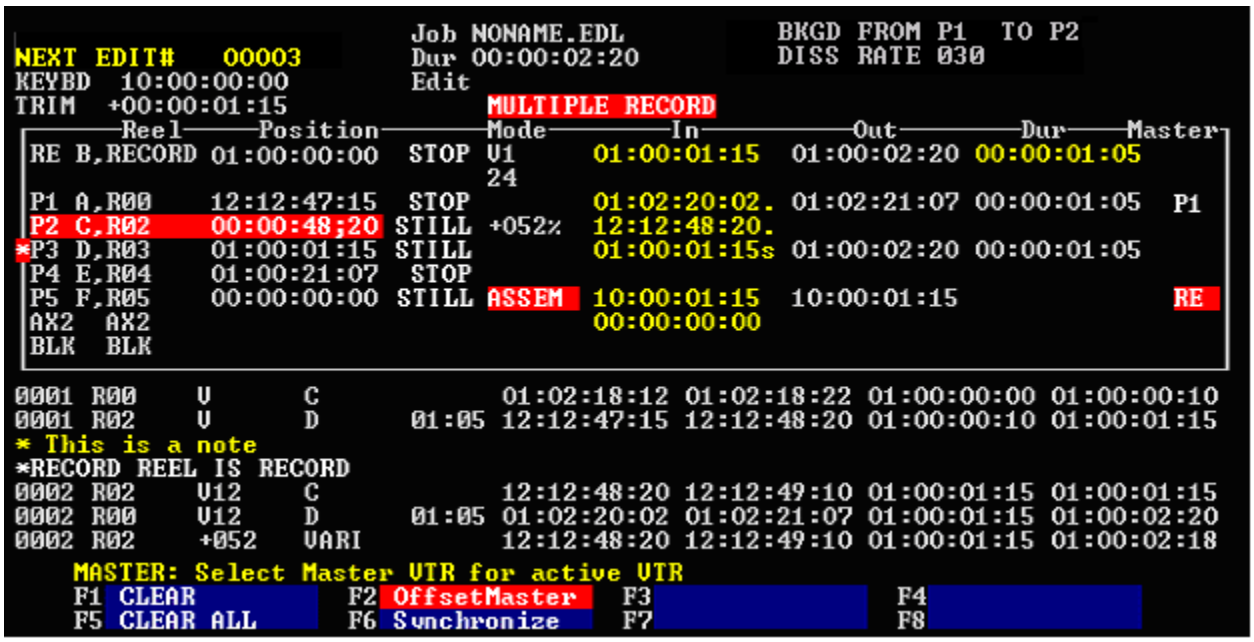






The Edit Screen

The graphic below is intended to give you a quick understanding of the edit screen section by section. The descriptions supplied in this section are for introduction to the edit screen only. More in-depth information on the individual functions, and the keystrokes used to access them, appear later in the manual. Where appropriate, a manual section reference is also included with each brief description.



EDIT #
The **next edit** number to be performed is displayed here. {**Ref: 11**}

KEYBD
This is the **Keyboard Register.** Numeric entries are displayed here. {**Ref: 4.3**}

TRIM
This is the **Trim Register.** Trim values are displayed here. {**Ref: 4.4**}

Job
The current **JOB** {CP3} or **EDL name** is displayed here. {**Ref: 11.10**}

Dur
The total **current program duration** is displayed here. {**Ref: 11.10**}

Edit
The pre-roll **countdown to the edit**, and the time into the current edit are displayed here during previews and recordings. **{Ref: 5.2.1}**

Transition and Memory area

This is the area where programmed Cuts, Dissolves, Wipes, Keys and E-MEMs are displayed. **{Ref: 7.1}**

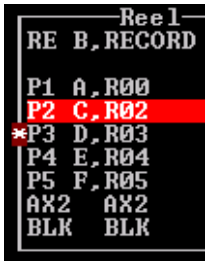
Multiple Record

This flag warns that there is more than one VTR enabled for recording during this edit. **{Ref: 6.7}**

When a VTR is in Assemble Mode, **ASSEM** is displayed for that VTR in the Mode column. **{Ref: 6.7.1}**

When a VTR is in the Insert mode, A/V flags (**V123456789ABC**) are displayed for that VTR in the Mode column (device and LE model dependent). A, B and C represent audio channels 10, 11 and 12 respectively, and are displayed in Hexi-Decimal format in order to allow them to be displayed in the space allowed. **{Ref: 6.4}**

Reel



The first column identifies the sources; **RE** is the primary recorder and **P1-P9** are the currently assigned VTRs. **AX1** and **AX2** are Auxiliary crosspoints, and **BLK** is black. Up to 10 VTRs can be displayed at one time (depending on LE-2000 model). **{Ref: 1.5}**

The second column lists the ports assigned to the VTRs. These correspond to the physical port connections, which are always sequentially related; that is, physical port **1** is always **A**, physical port **2** is always **B**, etc. **{Ref: 1.4}**

The third column is the Reel ID. This ID name identifies the reel or clip currently mounted on this device. Up to six alphanumeric characters may be used. The numbers are entered from the numeric keypad, and the alpha characters are printed on the front of the Control Panel keys. A PS2 keyboard may also be used for more convenient Reel ID entry. **{Ref: 1.5}**

Position

The Position column shows the current position of the videotape or clip currently mounted on that device. Notice in the graphic above that the timecode for the position of the current device has a semi-colon (**;**) between the seconds and the frames. This indicates that this timecode is Drop Frame (NTSC only).

Notice that the timecode for the other VTRs have a colon (**:**) between the seconds and the frames. This indicates that these timecode numbers are Non Drop-Frame. **{Ref: 4.6}**
If the number in the Position column is immediately followed by the letter "**C**", then this number is the number sent from the Tape Timer of the VTR, and means that you are editing based on Tach Pulse positions (control track) rather than Timecode. **{Ref: 4.5}**

The column to the right of the Position column is the status of the VTR associated with this row. These fields display whether this VTR is in Play, Still, Stop, Jog, etc. **{Ref: 2.2}**. If there is no status displayed in this field, this is an indication that there is a communication problem with this device.

Mode

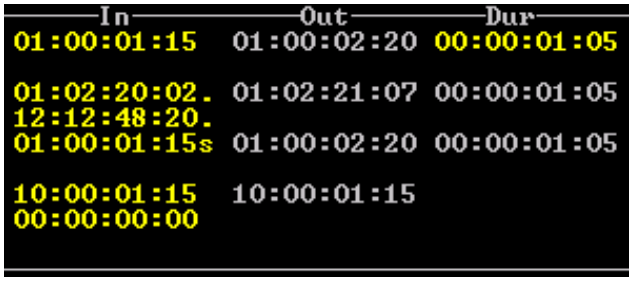
This column defines a special mode or condition that applies to a VTR. Record VTRs in the Insert mode display the A/V components that are to be recorded. **{Ref: 6.4}**

A/V components on the row beneath the primary recorder define a Split edit. **{Ref: 6.6}**

Record VTRs in the assemble mode display an **ASSEM** flag. **{Ref: 6.5}**

VTRs that are in variable speed for the edit display their programmed speed. **{Ref: 9}**

In, Out, & Duration



The **In** column displays the In-point for each device. The **Out** column displays the Out-point for each device. The **Dur** column displays the event duration, that is, the time between the In-point and Out-point, for each device. Other variations on uses for these fields are explained later in this manual. **{Ref: 4.2}**

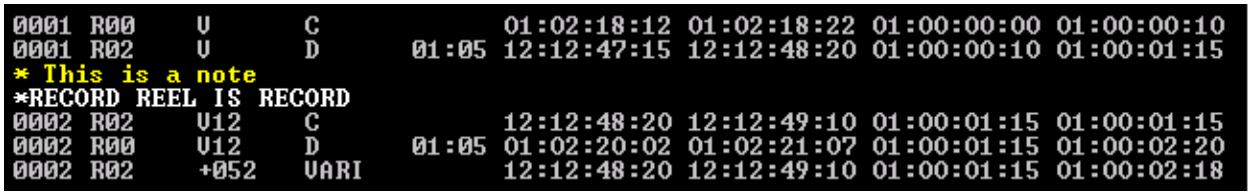
A period after the In-point indicates that this number is Auto-Tracked or Tagged to the Recorder via the EDL. If you change the Recorder In-point when a source is Auto-Tracked, the source In-point changes to Track the Recorder. **{Ref: 4.10}**

The "**s**" signifies that this VTR has been "synced" to the primary recorder. **{Ref: 0}**

Master

This column shows which VTRs have been defined as “slaves”, and which device is their Master. When a device defined as a “Master” is involved in an edit, all VTRs assigned as Slaves to that Master will also roll for the edit. This column also displays a “**D**” if the timecode on the device assigned to this source is Drop Frame (NTSC only).

The EDL



The EDL (Edit Decision List or List) is a record of edits that have been performed, or that have been created and saved to the EDL, for performing at a later time. Each time an edit is performed, the results of that edit are added to the EDL. The edits in this list contain all the information necessary to reproduce these edits, including transitions, keys, speeds, TBC data, GPI and MEM triggers, and more. **{Ref: 11}**

The Function Menu

The Function Key Menu is opened when a key is pressed that has more than one related option or function. Above the F1-F8 Function options is a prompt, usually related to the primary function, which instructs you on what to do next.

There are occasions when selecting a function in this menu will take you to a Function sub-Menu. These sub-Menus operate identically.

Exchange Edit Screens (Swap)

This feature allows you to exchange or swap the current contents of the edit screen with a buffered copy of the edit screen.

1. Press **[DATA]** {CP4} to save the current edit screen to memory. The word “Saved” is briefly flashed on the screen.

2. Recall, restore or manually change the current edit screen.

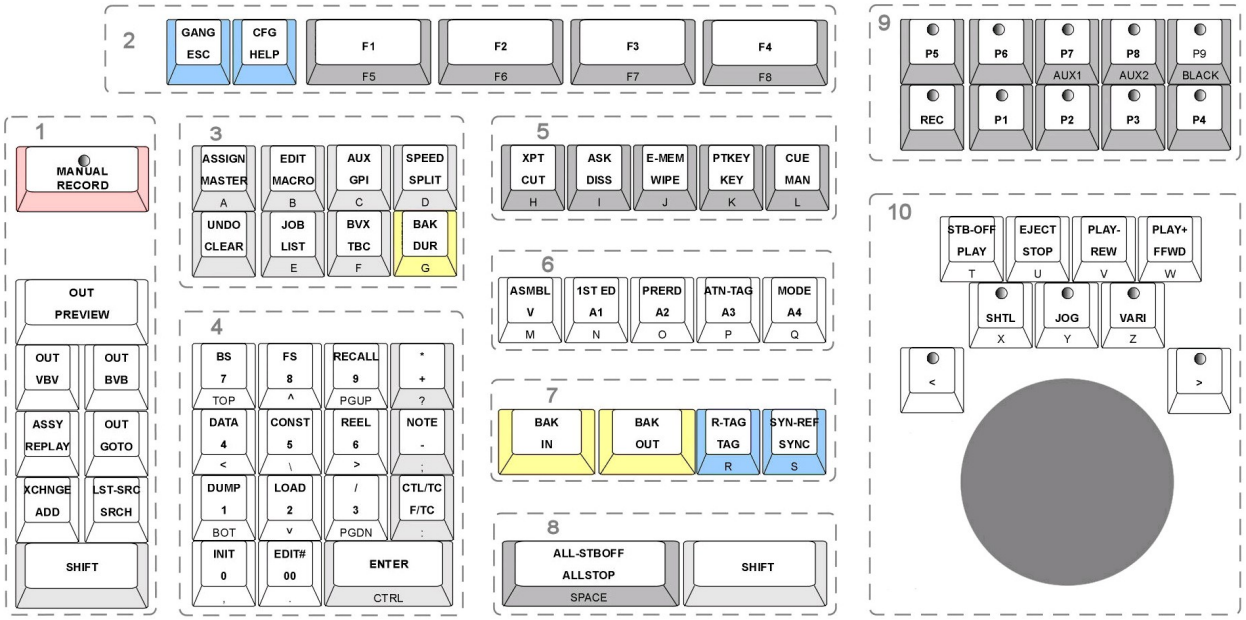
3. Press **[XCHNGE]** {CP1} to revert to the saved edit screen. The words “Recall Saved” are briefly flashed on the screen.

   Press **[XCHNGE]** to toggle back to the original edit screen. The word “Recall” is briefly flashed on the screen.

   Items included in the exchange are:

   - The Marks Table
   - Assigned ports
   - Reel IDs
   - A/V components
   - Master/Slave relationships
   - Programmed Speeds
   - Aux Menu Settings
   - Job name
   - Show duration
   - XPT Menu settings

The Control Panel



All functions of the LE-2000 editor are accessed and programmed via the Control Panel.

A PS2 keyboard can also be connected to the rear of the editor chassis to allow for the easy input of comments, file-names and reel-names within any text dialog.

For reference in this manual, the Control Panel is separated into 10 sections. The diagram above separates these sections. A more detailed picture is available at the rear of this manual. At times in this manual, references may be made to these sections. For example, {CP1} refers to the **C**ontrol **P**anel area shown as section **1** in the above graphic.

Many keystroke commands work with a **toggle** action. This means that a second press of the same key reverses the command. For example, pressing **[A1]** selects Audio Channel 1 if it was not previously selected, or it deselects Audio Channel 1 if it was previously selected.

When a key is pressed which starts a command that offers further choices, a **Function Menu** is displayed at the bottom of the Edit Screen. The primary function for this key is prompted above the Menu; in the case below, **MASTER: Select Master VTR for active VTR.**

These additional functions are selected by using Function keys F1-F8 located at the top of the Control Panel {CP2}. Function Menus are closed whenever a process such as Preview or Record is initiated, or when the function is cancelled with the [ESC] key.

Some of the keys legends are automatically enabled within context. For example, the alphanumeric and punctuation characters shown on the front of many keys become functional when **[NOTE]** is pressed in order to enter a note into the EDL. **{Ref: 11.8}**

Context sensitive help is available for most CP functions. Press **[HELP], <key you want help with>**, and the function description is displayed on the edit screen.

This page intentionally left blank

1. Getting Started

1.1 System Reference

The LE-2000 requires an external sync or genlock input. Ideally, this should be from house sync in the form of black burst. If this is not available, then the Sync output of the Record VTR can be routed to the **SYNC** input of the editor. Do not use a tri-level sync reference.

1.2 General Connections

- Connect the CP3 Control Panel RJ45 socket to the PCI slot RJ45 socket at the rear of the editor chassis with a CAT 5 cable
- Connect the PS2 keyboard to the PS2 socket at the rear of the editor chassis
- Connect a VGA Status monitor to the VGA connector at the rear of the editor chassis
- Connect Power to Status monitor.
- Connect Power at the rear of the editor chassis.
- Connect the system chassis to all controlled devices using RS-422 (9 Pin) connections.
- Connect GPI connections from the system chassis to any GPI controlled devices.

The LE-2000 Editors are dedicated systems for audio & video editing with most linear devices and some digital disk recorders. For speed of operation, ease of maintenance and upgradeability, we use a real-time DOS platform as its computing engine. The host software resides on the system hard drive, and is configured to start the editing application when switched on.

Connect and power-on all peripheral devices first, and then apply power to the LE-2000.

When switched **On**, the system first displays the device types of the connected devices. To refresh this display, press **[SHIFT][ASK]** {CP5}. Check that all expected devices are present and then press the **[ENTER]** key. This resets the display and shows the default edit screen and the EDL exactly as they were when the system was last shut down. This enables the user to begin fresh or to continue from where they left off without delay.

1.3 Using XTREE to change your mixer & switcher drivers

The LE-2000 comes from the factory with default drivers installed for the audio mixer (O3D) and video switcher (Hanabi).

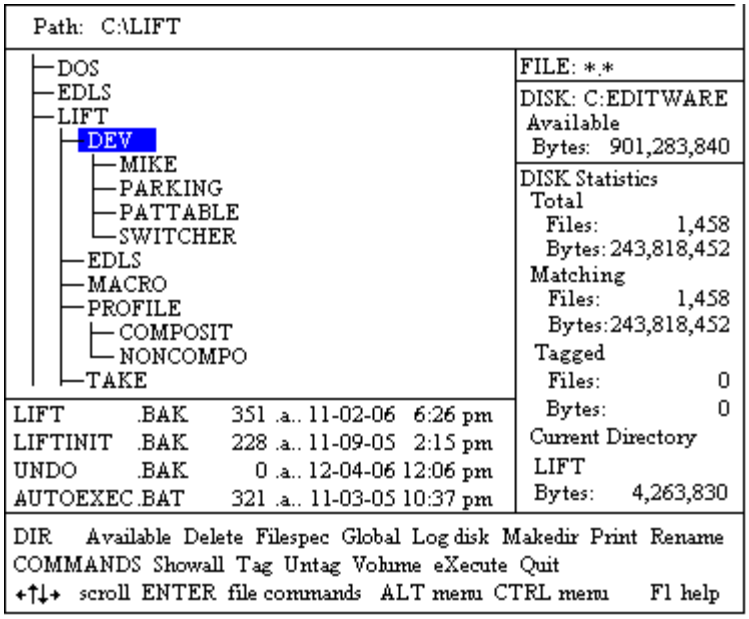
To view the currently installed mixer and switcher drivers, press **[SHIFT][CFG]** {CP2}. The Config Page will open with the currently loaded mixer and switcher drivers displayed at the bottom of the screen.

To change the audio mixer and/or video switcher drivers,

1. Press **[ALT][X]** to exit from the edit application.

2. At the DOS prompt, C:\LIFT> type **[X]** on the **QWERTY** keyboard, and then press **[Enter].**

The **XTREE** application will open, and looks like this when it starts:



The several directory functions available within XTREE are listed at the bottom of the screen. To select one of the functions, type the initial or highlighted letter of that function.

The top section of the screen shows the root directory "tree". To view or change the currently loaded mixer and switcher files, using the up and down arrow keys,

3. Scroll to the **DEV** directory and press **[ENTER].** The DEV folder and its contents are now displayed.

4. Press **E** in the list of FILE COMMANDS at the bottom of the screen to invoke the **Edit** file command.

5. At the prompt asking you to confirm that you want to Edit the DEV folder, press **[ENTER]**. You will now see the DEV folder opened for editing.

   There can be only **one** .ESM or .MXR in the DEV folder at any time. Before you can bring a new file into this folder, you must first remove or rename the old files.

6. To change your audio mixer driver, find and RENAME the current **.ESM** file in the DEV folder. For example: **AUDIO.ESM** to **AUDIO.OLD**

   To change your video switcher driver, find and RENAME the current **.MXR** file in the DEV folder. For example: **VIDEO.MXR** to **VIDEO.OLD**

7. **[ESC]**ape and navigate to the **SWITCHER** folder.

8. **COPY** or **MOVE** the desired switcher or mixer file to the **DEV** folder.

9. To exit and save the change, press **[ESC]**, then **[ENTER]** to confirm the file is to be saved. To exit without saving changes, press **[ESC]**, then **Q** to quit without saving.

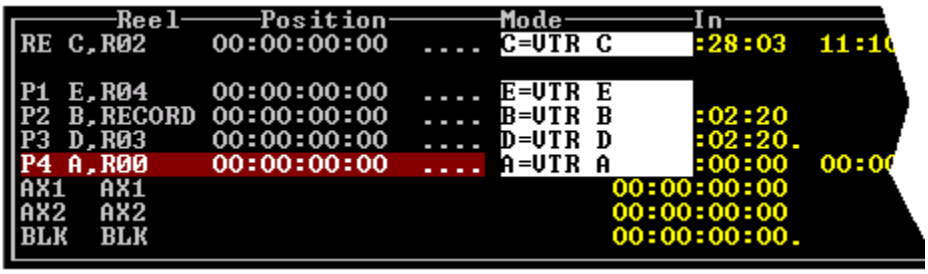
10. To exit from XTREE, press **[Q]** to quit, then **[Y]** to confirm.

1.4 Assigning Ports to VTRs

In order to communicate with VTRs from the editor, you must first connect an RS-422 serial machine control cable from each VTRs serial port to a serial port connector on the Serial Port Breakout Panel. Once this is done, you can assign these ports to sources on the editor.

To assign ports to sources,

1. Select **[REC]-[P1-P9]** {CP9} and press **[SHIFT][ASSIGN]** {CP3}. The Port Assignment dialog (in the **Mode** column) and the ASSIGN Function Menu open, with the currently selected source highlighted.



Serial ports are labeled **A through P** (system dependent), and are always related to their numeric counterpart. That is, port **A** is always physical port **1**; port **B** is always physical port **2**, etc.

The currently assigned ports are indicated in the Mode column of the edit screen as shown above.

2. Press the key with the **letter of the port (A-P)** indicating the port to be assigned to the selected source. Repeat for each connected source.

The ASSIGN Function Menu

You can add and delete the VTRs and AUX sources displayed on the edit screen. This is useful if you need to display more EDL lines, or if you wish to clear the edit screen of unused VTRs.

[F1] - Press **[F1] Less VTRs** to **remove** VTRs from the edit screen. You must leave at least 1 VTR displayed. The VTRs are removed from the edit screen starting at the bottom and moving up.

[F2] - Press **[F2] More VTRs** to **add** VTRs to the edit screen (Max 10 – system dependent). The VTRs are added to the edit screen starting at the bottom and moving down. Each VTR added results in 1 less EDL line displayed on the screen.

[F3] - Press **[F3] Less Aux** to **remove** Aux sources and Black from the edit screen.

[F4] - Press **[F4] More Aux** to **add** Aux sources and Black to the edit screen (Maximum 2 Aux sources plus Black).

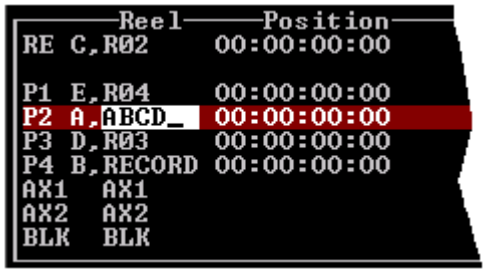
Note: *VTRs not displayed are not controlled by the editor.*

1.5 Assigning Reel IDs (Names) to VTRs and Crosspoints

It is usually beneficial to keep track of which reels and clips are mounted on which VTRs during each edit.

To assign a name or Reel ID to the selected source,

1. Press **[REEL]** {CP4} to open the text entry field at the current Reel ID position



2. Enter the new **<Reel ID>.** The Reel ID may contain a random combination of up to **6 alphanumeric characters**. In the example above, **ABCD** has been entered as the Reel ID.

3. Press **[ENTER]** to accept the entry.

***Note 1**: Do not assign the same Reel ID to multiple VTRs or crosspoints.*

***Note 2**: The system does not check to see if any Reel IDs are used twice in the same edit. In case of any double use of the source Reel ID, an error message is displayed when storing the edit in the EDL.*

The REEL Function Menu

[F1] - Press **[F1] List Search** to find the latest edit in the EDL with this Reel ID. Continue to press **[F1]** to locate earlier edits with this Reed ID.

[F2] - Press **[F2] FromUserBits** to enter the User Bit data from this tape as the Reel ID. Only the first 6 characters of the User Bit data will be used.

[F3] - Press **[F3] ToUserBits** to send this Reel ID to the User Bits for this tape.

[F5] - Press **[F5] ResetFromUB** to remove all User Bit data from all Reel ID fields.

1.5.1 Swap Reel IDs

To swap or exchange the Reel ID from one VTR with the Reel ID of another VTR,

1. Select the VTR **[REC]-[P1-P9]** whose Reel ID you wish to exchange.

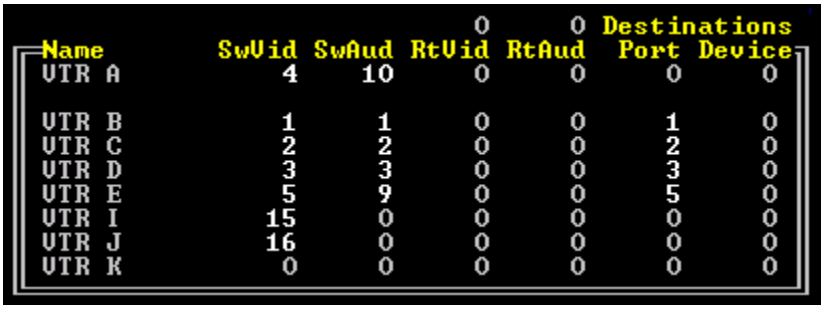
2. Press **[REEL]** to open the REEL ID text field for this VTR.

3. Press **[REC]-[P1-P9]** to select the VTR you will exchange Reel IDs with. All values assigned to each VTR are swapped along with the Reel ID

1.6 Assigning Crosspoints (XPT)

When selecting sources [REC]-[P1-P9]-[AUX1-AUX2]-[BLACK], the corresponding input is switched on the Program bus of the video switcher and on the audio mixer. This requires that the correct crosspoints be assigned in the **XPT** menu. In this menu, the inputs of the video switcher and audio mixers are set for every VTR and source.

1. Press **[XPT]** {CP5}. The XPT dialog and the XPT Function Menu open.



2. Press **[REC]-[P1-P9]** to select the source to assign.

3. Press the **[F1-F8]** Function key corresponding to the desired target.

4. Enter the desired crosspoints by using the numeric keypad. Confirm by pressing **[ENTER]**.

The XPT Function Menu

[F1] – Press **[F1] Video** to assign the video switcher crosspoint to the selected source. Note that some switchers start with 0, some start with 1, and some are internally mapped. See your switcher manual for additional information.

[F2] – Press **[F2] Audio** to assign the audio mixer crosspoint to the selected source. The setting selected in the **INIT Page** for item **Audio Mixer** is relevant to assigning audio crosspoints.
{Ref: 8.1.5}

When using ESAM, the channels are defined in the audio mixer. The XPT relates to the "machine" as defined in the audio mixer. The setting of a Channel in the INIT Page is not relevant.

The following applies only to the MIDI interface when used with Yamaha mixers.

- If **2 Channel** is selected, crosspoints 1, 2 and 3 controls channels in groups of **2**. For example, 1/2, 3/4, 5/6.

- If **4 Channel** is selected, crosspoints 1, 2 and 3 controls channels in groups of **4**. For example, 1/2/3/4, 5/6/7/8, 9/10/11/12.

[F3] – Press **[F3] TBC/Port** to assign one of the following:

- If a digital **VTR** is connected, the number **0** should be entered for this port (See **[F4] Device** below).

- If a **PROFILE** server channel is connected, the name and number of the **VTRn.CFG** file should be entered for this port.

[F4] – Press **[F4] Device** to define the type or model of VTR to be controlled. Unless otherwise specified, this value should be set to "**0**". When **Device = 0**, the VTR connected to this port is automatically identified by the system. A connected VTR sends its device code to the editor, which in turn displays the model designation of the identified VTR to the right of the DEVICE column.

When a new VTR is connected whose device code is not yet contained in the .DEV directory, the device code sent by the VTR is displayed, and the standard ”UNIVERSAL” driver is assigned which corresponds to the Sony BVU-900 VTR. In this case the device code of a similar model is entered, until a new data file is supplied or the current file is updated.

Press **[ASK]** {CP5} to display the VTR protocol drivers currently assigned or identified for all current VTRs.

Press **[SHIFT][CFG]** {CP2} if you wish to override the system and assign a specific driver to a VTR. The names and corresponding codes of all currently available .dev files will be displayed. Enter the corresponding code in the Device column of the **XPT** menu. If your particular model of VTR is not listed, be aware that many VTRs use .dev files created for other model VTRs. Additional models may be resident in the PARKING folder in the LIFT folder.

- If **[F4] Device = 0**, the displayed VTR type has been identified by the edit system.
- If **[F4] Device = <device ID number>**, the displayed VTR type has been defined by the user.

[F5] – Press **[F5] RouterSourceVideo** to assign the router video source crosspoint to the selected source.

[F6] – Press **[F6] RouterSourceAudio** to assign the router audio source crosspoint to the selected source.

[F7] – Press **[F7] RouterDestinationVideo** to assign the PGM re-entry crosspoint for Video AUX BUS Preview.

[F8] – Press **[F8] RouterDestinationAudio** to assign the router audio destination crosspoint to the selected source.

1.6.1 Assigning a Device ID

Most facilities have names or numbers assigned to VTRs. For example VTR24, DVW500-12, etc. These names are used to identify the VTR rather than the material loaded. We refer to these names as Device IDs.

To assign a Device ID to a VTR,

1. Press **[XPT]**. The XPT dialog and the XPT Function Menu open.
2. Press **[SHIFT][ASSIGN]**. The **Name** text field opens for the selected VTR.
3. Type a **<name>** of up to 10 alphanumeric characters. Spaces are allowed.
4. Press **[ENTER]** to accept.

1.7 Reset the System to its Default Condition

WARNING! Save your current settings before resetting system settings! There is no UNDO for this action. **{Ref: 4.9.1}**

To return the edit screen and edit settings to a default condition,

1. Press **[CTRL][CLEAR]** {CP3}. You are prompted

   Reset Entire System? <ENTER>

2. Press **[ENTER]** to confirm. The default conditions are as follows:

- All VTRs – starting with "A" for the recorder – are assigned according to the order of ports (A, B, C etc.).
- All Reel IDs are designated REC, R01, R02, etc.
- The insert mode is set to V12.
- Any SPLIT values are canceled.
- The AUX menu is reset. All timecode readers are set to LTC+, and all other values are set to zero.
- All device and TBC/port assignments are deleted.
- All edit screen time entries are deleted.
- The effect is reset to CUT.

Note: *Crosspoints and device names are not affected by this reset.*

This page intentionally left blank

2. VTR Transport Control

2.1 Controlling VTRS Manually

The Jogger section of the Control Panel {CP10} is dedicated primarily to manual machine control.

- Press **[PLAY]** to play the currently selected source.
- Press **[STOP]** to stop the currently selected source.
- Press **[REW]** to rewind the currently selected source.
- Press **[FFWD]** to fast-forward the currently selected source.

Rules regarding Gang {**Ref: 3.2.1}**, Master / Slave **{Ref: 3.2.2}** and Synchronized Play **{Ref: 3.2.6}** may be applied to these functions.

2.1.1 Shuttle, Jog and Variable

- Press **[SHTL]** then **<JOG>** clockwise to Shuttle the currently selected source forward or counter-clockwise to Shuttle in reverse. The response of the Shuttle action can be controlled by adjusting the Shuttle Sensitivity. **{Ref: 8.1.10}**
- Press **[JOG]** then **<JOG>** clockwise to jog the currently selected source forward frame-by-frame or counter-clockwise to jog in reverse. The response of the Jog action can be controlled by adjusting the Jog Sensitivity. **{Ref: 8.1.9}**

  To have **[JOG]** be enabled automatically just by turning the jog wheel, set INIT Page item **JogDirect** to **On**. {**Ref: 8.1.25**}
- Press **[VAR]** then **<JOG>** clockwise to place the currently selected source in forward Variable or counter-clockwise for reverse Variable. The response of the Jog action can be controlled by adjusting the Variable Sensitivity. **{Ref: 8.1.9}**

  Rules regarding Gang **{Ref: 3.2.1}**, Master / Slave **{Ref: 3.2.2}** and Synchronized Play **{Ref: 3.2.6}** may be applied to these functions.

2.1.2 Increment Frame-By-Frame

- Press **[<]** to increment the selected device in reverse frame-by-frame. Maintain the key depressed to continuously increment the device.
- Press **[>]** to increment the selected device forward frame-by-frame. Maintain the key depressed to continuously increment the device.

2.1.3 Stand-by Off (Scanners Off)

- Press **[SHIFT][STB-OFF]** to turn off the scanner of the selected VTR.
- Press **[SHIFT][ALL-STBOFF]** to turn off the scanners of all currently assigned VTRs. {CP8}

2.1.4 Eject Tapes

Press **[SHIFT][EJECT]** to eject the cassette from the currently selected VTR.

2.1.5 PLAY -, PLAY + (Frame Bump)

- Press **[SHIFT][PLAY-]** to trim the selected source VTR minus 1-frame during a PREVIEW or RECORD. The system then re-synchronizes the VTR. This feature is helpful in establishing audio or video sync between VTRs.

- Press **[SHIFT][PLAY+]** to trim the selected source VTR plus 1-frame during a PREVIEW or RECORD. The system then re-synchronizes the VTR. This feature is helpful in establishing audio or video sync between VTRs.

2.1.6 ALLSTOP (Spacebar)

Press **[ALLSTOP]** to stop all currently assigned VTRs that are not protected by the **AllstopSafety** feature. **{Ref: 8.1.29}**

2.2 VTR Status Messages

On the edit screen, each VTR has a status field to the right of the Position field. The status displayed here is reported by the VTR every frame. If NO status is displayed for a device, there is probably no communication between that device and the editor.

During a preview, recording or synchronization, the following three special modified messages may be displayed in this field:

play (lower case p)	VTR is not servo locked.
Play (upper case P)	VTR is servo locked, no color-framing.
LOCK (all CAPS)	VTR is servo locked with 4- or 8-field color-framing.

If the status message changes from **P**lay to **p**lay after the In-point of the edit, this indicates an error on the tape is causing the servo to momentarily unlock.

Other status messages displayed in this field include:

STIL	VTR is in the **STILL** mode.
STOP	VTR is in the **STOP** mode.
SBOF	The VTR servo is not in the ready mode (**stand-by off**).
REC	VTR is assigned as a **record VTR**.
REW	VTR is **rewinding**.
FFWD	VTR is **fast-forwarding**.
LOCK	VTR is **servo locked** and the VTR is **color-framed**.
+/- nnn	VTR is **synchronizing** and is currently this many frames **out of sync**.
CUED	VTR has reached its **CUE-point**.
DBLD	VTR control has been **disabled**.
SHL	VTR is in the **Shuttle** mode. The speed (x-play speed) is displayed at the upper left portion of the edit screen.
<JOG>	VTR is in the **Jog** mode. The speed (x-play speed) is displayed at the upper left portion of the edit screen.
<VAR>	VTR is in the **Variable** mode. The speed (x-play speed) is displayed at the upper left portion of the edit screen.

An extended status inquiry is sent to some digital VTRs every 8th frame to retrieve the VTR's video and audio error rates. If the VTR reports that this error rate is **high**, the system indicates the last verified tape position along with an error message.

The setting of the **HoldLock** function in the **INIT Page** determines if the edit is aborted in case of an error message. If **HoldLock** is switched **On**, the edit is aborted. **{Ref: 8.1.24}**

The setting of the **RepeatFailed** function in the **INIT Page** determines if the system re-tries to perform an aborted edit. If **RepeatFailed** is switched **On**, the edit is attempted again, up to two times. **{Ref: 8.1.16}**

2.3 Disable / Enable a VTR

To disable a VTR is to prevent that VTR from being controlled in any way by the editor. Any VTR can be disabled.

To disable a VTR,

Press and hold the **[ENTER]** key and select **[REC]-[P1-P9]**.

The status message on the edit screen indicates **DBLD** for that VTR. Repeat the key sequence to toggle this function.

When a port is disabled, no commands are issued to the VTR connected to that port. However, when the port is selected by pressing one of the source keys [REC]-[P1-P9], the video and audio crosspoints are still switched. In this way, the user can create additional Auxiliary crosspoints if desired.

During a preview, even if the Record VTR is disabled and it is not rolling, its Position timecode is updated as if it were enabled and participating in the edit.

2.4 Cue & Search Functions

Cue a VTR to its In-time

Press **[GOTO]** {CP1} - The current VTR is cued to its current In-time.

Cue a VTR to its Out-time

Press **[SHIFT][GOTO]** - The current VTR is cued to its current Out-time.

Cue a VTR to the time entered into the Keyboard Register

Type a **<timecode value>** and press **[GOTO]** - The current VTR cues to the location typed into the Keyboard Register. {Ref: 4.3}

Move a VTR by the amount of time entered into the Keyboard Register

Type a **<time>** and press **[←]** or **[→]** {CP10} to move the current VTR by this amount forwards or backwards. The <time> must be re-entered each time.

Cue a VTR to the In-time of the current EDL edit

- Press **[SEARCH]** {CP1}. If the **record** VTR is selected, it cues to the recorder In-point (field 3) of the current line in the EDL.

- Press **[SEARCH]**. If a **source** VTR is selected, it cues to the source In-point (field 1) of the current line in the EDL.

Search EDL for the latest edit with the current VTRs Position TC & Reel ID

Press **[SHIFT][SEARCH]** (EDL search). The EDL searches to the latest edit in the EDL containing the selected VTRs position timecode and Reel ID.

Cue the current VTR to a Constant time

Press **[CONST]** to open the Constant dialog. Use the **<Jog Knob>]** or press **[←]** or **[➔]** to select a constant register. Press **[GOTO].** The current VTR is cued to the selected constant time. **{Ref: 4.12}**

Cue all VTRs to their pre-roll points

Press **[SHIFT][CUE]** {CP5}. All VTRs involved in the currently programmed edit are cued to their pre-roll points.

Replay

Press **[REPLAY]** {CP1}. The primary recorder cues to the pre-roll point of the selected edit in the EDL, and then plays.

3. Source Selection and Control

3.1 Selecting Individual Sources

To select an individual VTR, press **[REC]-[P1-P9]** {CP9}. When a valid source key is selected, the corresponding LED's on the keycap confirm the selection, and the selected source is highlighted on the edit screen. On a system with 10 VTRs enabled, press **[SHIFT][P7]** for **AUX1, [SHIFT][P8]** for **AUX2,** or **[SHIFT][P9]** for **BLACK**.

If any source other than the Recorder is selected, and the edit is a **CUT**, that source is selected as the **CUT TO** source.

If any source other than the Recorder is selected, and the edit is a **DISSOLVE** or **WIPE**, then that source is selected as the **TRANSITION TO** source.

There are times you may wish to select a source without changing the already programmed **TO** source. To accomplish this, in the **INIT Page** turn the **TO-Dblpress** function **On** {Ref: 8.1.35}. With this function enabled, the source VTR is not selected after the first press, but only after two rapid and successive press of the corresponding key. For example, **[P2]+[P2]**.

If you have already programmed a multiple VTR edit, the **FROM** VTR may be re-defined by pressing **[F1] FROM SOURCE.** The system now expects one single press of the FROM and TO source keys, regardless of the TO-Dblpress setting.

To remove an already programmed Wipe, Dissolve or Key, press **[CUT]**.

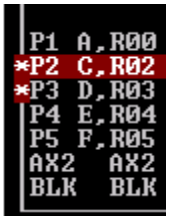
All control commands refer to the selected VTR.

3.2 Selecting Multiple Sources

Rolling multiple sources can be achieved by using the **GANG**, **MASTER/SLAVE,** or **MAN** functions**.**

3.2.1 Gang

Press **[SHIFT][REC]-[P1-P9].** An asterisk (*****) is displayed next to the defined source to the left of the source column. For example, in the graphic below both P2 and P3 are Ganged.



When a preview or recording is initiated, all Ganged VTRs roll regardless of whether they are defined in the edit or not.

- When not involved in an edit, if a Ganged VTR is sent a transport command (**PLAY, STOP, JOG**, etc), all Ganged VTRs will respond to the command. While Ganged sources may be playing, they are not being synchronized. **{Ref: 3.2.6}**

- If a Ganged VTR is sent a **TRIM** command, all Ganged VTRs trim accordingly.

- If a Ganged VTR is sent a **GOTO** or **SRCH** command, all Ganged VTRs are cued accordingly.

- If a Ganged VTR is sent a **MARK IN, MARK OUT, SET IN, SET OUT** command, the corresponding In-time or Out-time of other Ganged VTRs change by the same amount.

  Press **[SHIFT][GANG]** {CP2} to simultaneously disable or enable all previously Ganged VTRs.

  To keep the Gang relationship set after an edit, in the **INIT Page** turn item **Keep*, Master On.** To remove the Gang relationship after an edit, turn **Keep*, Master Off**.
  {Ref: 8.1.15}

  When an edit with Ganged sources is added to the EDL, in addition to the primary edit line(s), each Ganged source has its own edit line with the ID **+100 MSTR SYNC**.

  Note 1: *It is not recommended to Gang the* ***FROM VTR*** *in a programmed transition.*
  Note 2: *It is not recommended to Gang a* ***Slaved VTR****.*

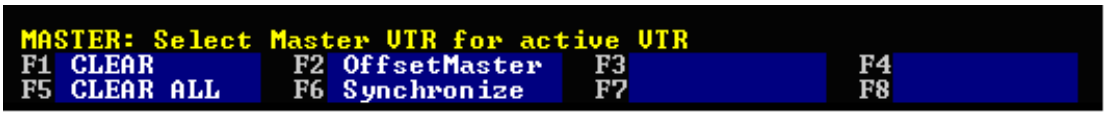
3.2.2 Master Slave

A Master / Slave relationship is one in which one VTR, the **Master**, defines a relationship between it and other VTR(s), the **Slave(s)**

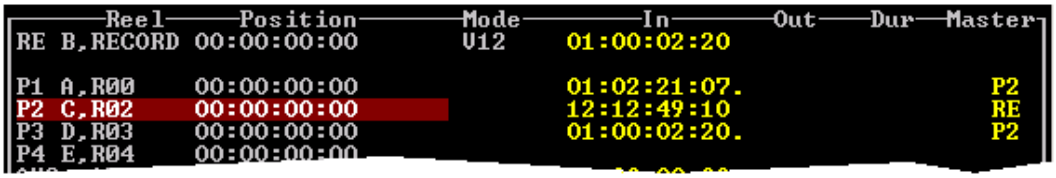
To assign a Master / Slave relationship,

1. Press **[REC] - [P1-P9]** to select the source to be the **SLAVE VTR**.

2. Press **[MASTER]** {CP3}. The MASTER Function Dialog opens.



3. Press **[REC] - [P1-P9]** to define the **MASTER VTR**. The Master for the associated VTR is displayed in the Master column of the edit screen.



In the example above, P1 and P3 are Slaves of P2, and P2 is a Slave of the Recorder.

As soon as a Master VTR is synchronized for an edit, its Slave VTR(s) is also synchronized.

The MASTER Function Menu

[F1] - Select a M/S source and press **[MASTER], [F1]CLEAR** to clear or cancel a single Master / Slave relationship,

[F2] – With **OffsetMaster not** selected,

If you modify the In-time of the **Master VTR**, In-times for all its Slaves are also modified.
If you modify the In-time of a **Slave VTR**, the In-time of that VTR only is modified.

[F2] – With **OffsetMaster selected**,

If you modify the In-time of the **Master VTR**, the In-times for all its Slaves are also modified.
If you modify the In-time of a **Slave VTR**, the In-times for the Master and all Slaves are also modified.

With this item selected, the M/S markers are over a **BLUE** field. This means that the **OffsetMaster** function has been applied to this M/S relationship.

When the M/S markers are over a **RED** field, this means that both the **OffsetMaster** and the **Synchronize** functions have been applied to this M/S relationship.

[F5] - Press **[MASTER], [F5] CLEAR ALL** to clear or cancel all Master / Slave relationships.

[F6] - With **[F6] Synchronize** selected, when any Master VTR is put into Play, its Slave(s) automatically roll and synchronize to the Master. **{Ref: 3.2.6}**

With this item selected, the M/S markers are over a **GREY** field. This means that the **Synchronize** function has been applied to this M/S relationship.

When the M/S markers are over a **RED** field, this means that both the **Synchronize** and the **OffsetMaster** functions have been applied to this M/S relationship.

Note 1: *A valid edit must have at least one source that is not assigned as a Slave.*

Note 2: *It is possible to assign up to 5 separate groups of Master / Slaves (system dependent).*

Note 3: *If VTRs are Ganged as well as defined in a Master / Slave relationship, the Master/Slave data takes priority during EDL handling.*

Note 4: *We do not recommend the Ganging of Slaves.*

3.2.3 Multi-Record - Slaving Multiple Record VTRs in Master/Slave Mode

To enable Slaved VTRs to record simultaneously,

1. Select the VTR (P1-P9) to be assigned as a secondary recorder.
2. Press **[MASTER]**. The MASTER Function Menu opens.
3. Press **[REC]**. **RE** is displayed in the Master column for this VTR.
4. Select the new record VTR and press **[MODE]** {CP6}.
5. Press the appropriate **[V], [A1], [A2], [A3], [A4] component** keys to assign to this recorder if this recorder is capable of performing **INSERT** edits.

   Press **[MODE]** followed by **[5] – [9]** on the numeric keypad {CP4} to toggle **A**udio channels **5-9** respectively as audio record components for the current edit (device dependent).

   Press **[MODE]** followed by **[A]** (MASTER), **[B]** (MACRO) or **[C]** (GPI) to toggle **A**udio channels **10-12** respectively as audio record components for the current edit (device dependent).

The A/V components will be displayed.

OR

Press **[ASMBL]** if this recorder will **ASSEMBLE** edit. ASSEM will be displayed.

The message **MULTIPLE RECORD** appears on the status monitor. The selected master definition is displayed in the MASTER column.

Edits recorded to secondary recorders are stored in the EDL and are repeatable by recalling them from the EDL.

To disable Slaved recorders,

Press **[MODE]** and toggle components **[V], [A1]-[A4] off** for this recorder.

Press **[MODE]** followed by **[5] – [9]** on the numeric keypad {CP4} to toggle **A**udio channels **5-9 off** for this recorder.

Press **[MODE]** followed by **[A]** (MASTER), **[B]** (MACRO) or **[C]** (GPI) to toggle **A**udio channels **10-12 off** for this recorder.

OR

Press **[MODE], [F1]**.

The message **MULTIPLE RECORD** is removed from the status monitor, but the M/S relationship of the VTRs remains active.

3.2.4 Multi-Record - Ganging Multiple Record VTRs in Gang Mode

To enable Ganged VTRs to record simultaneously,

1. Select the VTR (P1-P9) to be assigned as a secondary recorder.

2. Press **[SHIFT][P1-P9]**. An asterisk (*****) is displayed next to the defined source to the left of the source column.

3. Select the new record VTR and press **[MODE]** {CP6}.

4. Press the appropriate **[V], [A1], [A2], [A3], [A4] component** keys to assign to this recorder if this recorder is capable of performing **INSERT** edits.

   Press **[MODE]** followed by **[5] – [9]** on the numeric keypad {CP4} to toggle **A**udio channels **5-9**.

   Press **[MODE]** followed by **[A]** (MASTER), **[B]** (MACRO) or **[C]** (GPI) to toggle **A**udio channels **10-12**.

   OR

   Press **[ASMBL]** if this recorder will **ASSEMBLE** edit. ASSEM will be displayed.

   The message **MULTIPLE RECORD** appears on the status monitor.

   Edits recorded to secondary recorders are stored in the EDL and are repeatable by recalling them from the EDL.

To disable Ganged recorders,

Press **[MODE]** and toggle the A/V components **off** for this recorder.

The message **MULTIPLE RECORD** is removed from the status monitor, but the Gang relationship of the VTRs remains active.

3.2.5 Manual Transitions

In this mode, two VTRs are defined as FROM and TO sources and synchronized, but no commands are issued to the audio mixer and video switcher. This allows an operator to make edits on-the-fly using the mixer or switcher manually.

1. Press **[MAN]** {CP5}.

2. Press **[P1-P9]** to select the **FROM** source.

3. Press **[P1-P9]** to select the **TO** source.

   The FROM source goes in the EDL as the CUT source, and the TO VTR is designated as **FM**.

3.2.6 Synchronized Play

While this function only works with VTRs that have a Master / Slave relationship defined, it differs from a typical M/S situation in that it is designed to play **and** synchronize a Slave to the Master when the Master is in Play, rather than during Preview or Record.

Press **[MASTER], [F6] Synchronize.**

With **Synchronize** selected, when any Master VTR is put into Play, its Slave(s) automatically rolls and synchronizes to it.

This page intentionally left blank

4. Defining Edit Points

4.1 Marking IN and OUT Times

To mark the current position of a VTR as the <u>In-time</u>,

Press **[IN]** {CP7}. The current VTRs position timecode is entered into the **In** field of the current VTR.

If the VTR does not have timecode present, press **[SHIFT][CTL/TC]** to toggle the Timecode Mode to Control Track. The Tape Timer number will be displayed followed by the letter "**C**".

To mark the current position of a VTR as the <u>Out-time</u>,

Press **[OUT]** {CP7}. The current VTRs position timecode is entered into the **Out** field of the current VTR.

If the VTR does not have timecode present, press **[SHIFT][CTL/TC]** to toggle the Timecode Mode to Control Track. The Tape Timer number will be displayed followed by the letter "**C**".

- If the VTR has an In-point and you mark an Out-point, the **Duration** is calculated.
- If the VTR has an Out-point and you mark an In-point, the **Duration** is calculated.
- If the VTR has an In-point and you enter a Duration, the **Out-point** is calculated.
- If the VTR has an Out-point and you enter a Duration, the **In-point** is calculated.

If a VTR involved in an edit has no In-points defined, its current position is marked as the In-point.

Calculated numbers, or "**soft**" numbers, are numbers that are calculated by the editor when 2 of 3 points of reference are entered. For example, if you enter an In-point and an Out-point for a Source VTR, the editor calculates the Duration, and the Duration is entered as a "**soft**" number. Soft numbers are dimmed in the Marks Table to differentiate them from hard numbers.

Press **[UNDO]** followed by **[IN]**, **[OUT]** or **[DUR]** to restore the corresponding previous time of the current VTR. Each successive press of **[SHIFT][UNDO]** followed by **[IN]**, **[OUT]** or **[DUR]** recalls the next of the previous 40 values.

4.2 Setting IN, OUT and DURATION Times

In-points, Out-points and Duration times can be defined by first entering the **<time>** into the Keyboard Register and then defining the **<target>**.

To manually enter a <time> into the IN, OUT, or DUR fields for the current VTR,

1. Type the **<desired number>.** Pressing any numeric key {CP4} automatically activates the Keyboard Register.

2. Press **[IN], [OUT],** or **[DUR]** {CP7}. The number from the Keyboard Register is transferred into the corresponding field of the selected source.

- If the VTR has an In-point and you enter an Out-point, the **Duration** is calculated.
- If the VTR has an Out-point and you enter an In-point, the **Duration** is calculated.
- If the VTR has an In-point and you enter a Duration, the **Out-point** is calculated.
- If the VTR has an Out-point and you enter a Duration, the **In-point** is calculated.

Calculated numbers, or "**soft**" numbers, are numbers that are calculated by the editor when 2 of 3 points of reference are entered. For example, if you enter an In-point and an Out-point for a Source VTR, the editor calculates the Duration, and the Duration is entered as a "**soft**" number. Soft numbers are dimmed in the Marks Table to differentiate them from hard numbers.

Press **[UNDO]** followed by **[IN]**, **[OUT]** or **[DUR]** to restore the corresponding previous time of the current VTR. Each successive press of **[SHIFT][UNDO]** followed by **[IN]**, **[OUT]** or **[DUR]** recalls the next of the previous 40 values.

4.3 The Keyboard Register

In addition to the direct entry of IN, OUT, and DUR times, the Keyboard Register content can also be used with the following functions:

- Press **[SHIFT][IN]** (BAK), **[SHIFT][OUT]** (BAK), or **[SHIFT][DUR]** (BAK) to transfer the corresponding times of the current source into the Keyboard Register.
- Enter a **<timecode>** into the Keyboard Register and press **[GOTO]**. The current VTR cues to the specified timecode location.
- Enter a **<time>** into the Keyboard Register and press **[AUX], [F4]PRESET.** This presets the timecode generator or the tape timer of the current VTR.
- As a shortcut, press **[CTRL][F/TC]** to preset the tape timer with the current timecode and automatically switch to CTL mode on the selected VTR.
- Enter a **<time>** into the Keyboard Register and press **[GPI]** {CP3} to manually enter GPI trigger times. **{Ref: 10}**
- Enter a **<time>** into the Keyboard Register and press **[CONST]** {CP4} to transfer this time into one of the 21 constant registers. **{Ref: 4.12}**
- If a transition is programmed, enter a **<duration>** into the Keyboard Register and press **[F2] DURATION** to enter this number as the duration of the current transition.
- Enter a **<time>** into the Keyboard Register and press the **[←]** or **[→]** arrow keys to re-position the current VTR by the specified amount of time.
- Press **[RECALL], [P1]-[P9]** to transfer the current position of the specified source to the Keyboard Register.
- Press **[RECALL], [RECALL]** to activate (highlight) the Keyboard Register with its current value.
- Press **[CTRL][F1-F4]** to load one of the 4 times from the highlighted row of the EDL into the Keyboard Register.

  [Ctrl][F1] = Source IN
  [Ctrl][F2] = Source OUT
  [Ctrl][F3] = Record IN
  [Ctrl][F4] = Record OUT

4.3.1 Frames and Timecode

If the Keyboard Register is active, pressing **[F/TC]** {CP4} toggles the displayed entry between frames and timecode. For example, **1205** frames or **12:05** 12 seconds and 5 frames (NTSC).

If the Keyboard Register is active, and if an invalid timecode such as 34:76 is entered, press **[F/TC]+[F/TC]** to obtain the valid time of 36:16 (NTSC).

4.4 The Trim Register

All times are trimmed by first entering the **<trim value>** and then the **<target>**.

To manually trim a time in the IN, OUT, or DUR fields for the current VTR,

1. Press **[+]** or **[-]** to activate the Trim Register. The Trim Register highlights.

2. Type the **<number>** to be added or subtracted.

3. Press **[IN], [OUT],** or **[DUR].** The number typed into the Keyboard Register is added (+) or subtracted (-) from the number in the corresponding field.

- If the VTR has an In-point and you trim the Out-point, the **Duration** is calculated.
- If the VTR has an Out-point and you trim the In-point, the **Duration** is calculated.
- If the VTR has an In-point and you trim the Duration, the **Out-point** is calculated.
- If the VTR has an Out-point and you trim the Duration, the **In-point** is calculated.

Calculated numbers, or "**soft**" numbers, are numbers that are calculated by the editor when 2 of 3 points of reference are entered. For example, if you enter an In-point and an Out-point for a Source VTR, the editor calculates the Duration, and the Duration is entered as a "**soft**" number. Soft numbers are dimmed in the Marks Table to differentiate them from hard numbers.

Press **[CLEAR]** to clear the last numeric entry of the active Trim Register.

Press **[ESC]** to abort the entry and restore the previously displayed time in the Trim, Register.

4.4.1 Frames and Timecode

If the Trim Register is active, pressing **[F/TC]** {CP4} toggles the displayed entry between frames and timecode. For example, **100** frames or **1:00** one second (NTSC).

If the Trim Register is active, and if an invalid entry such as 1:42 is entered, press **[F/TC]+[F/TC]** to obtain the valid time of 2:12 (NTSC).

4.5 Control Track Editing

If timecode is not present on your videotape, you can still edit using the Tape Timer of the VTR and the Taco Pulses on the tape created during the recording process. Present on each individual frame, there are 30 of these markers per second on an NTSC tape and 25 on a PAL tape. Editing in this manner is called Control Track editing.

Press **[SHIFT][CTL/TC]** to toggle the current source between Timecode and Control Track. When in the Control Track Mode, the number in the Position column will be displayed followed by the letter "**C**".

4.6 Drop-frame Timecode (NTSC)

An hour of NTSC video has 107,892 frames of video. 1-hour of timecode (NDF) has 108,000 frames. That is 108 frames longer than a real-time hour. In order to compensate for this difference,

and to make a 1-hour show be a true 1-hour length and not 01:00:03:18, drop-frame timecode is used.

Drop-frame timecode drops 2-frames (**;00** and **;01**) every minute except for the tenth minutes (1:10:00;00, 1:20:00;00, 1:30:00;00, etc.) for a total of 108 frames per hour or 3 seconds and 18 frames (3;18). Remember that Drop-frame timecode only drops the numbers that refer to the frames, and not the actual frames.

Non-drop-frame timecode is displayed with a (**:**) colon between the seconds and frames. For example, 01:08:20**:**15.

Drop-frame timecode is displayed with a (**;**) semi-colon between the seconds and frames. For example, 01:08:20**;**15.

The system recognizes the timecode format of sources automatically. No action is required on the part of the user.

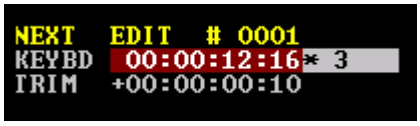
Drop-frame and Non-drop-frame timecoded sources can be used simultaneously.

4.7 The Timecode Calculator

The editor is capable of doing timecode multiplication (*) and division (/) calculations.

To multiply the current number in the Keyboard Register,

1. Type the **<number>** to be multiplied.
2. Press **[SHIFT][*]** {CP4}**.** The multiplication field opens to the right of the number in the Keyboard Register.

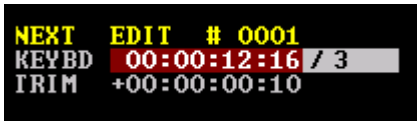


3. Type the **<number>** to be used as the multiplier.
4. Press **[ENTER]** to complete the calculation.

In the example above, the entered number of 12:16 will be multiplied by 3. If the resulting calculation results in an uneven number, the number is rounded off to the next lower number.

To divide the current number in the Keyboard Register,

1. Type the **<number>** to be divided.
2. Press **[SHIFT][/]** {CP4}. The division field opens to the right of the number in the Keyboard Register.



3. Type the **<number>** to be divided by.
4. Press **[ENTER]** to complete the calculation.

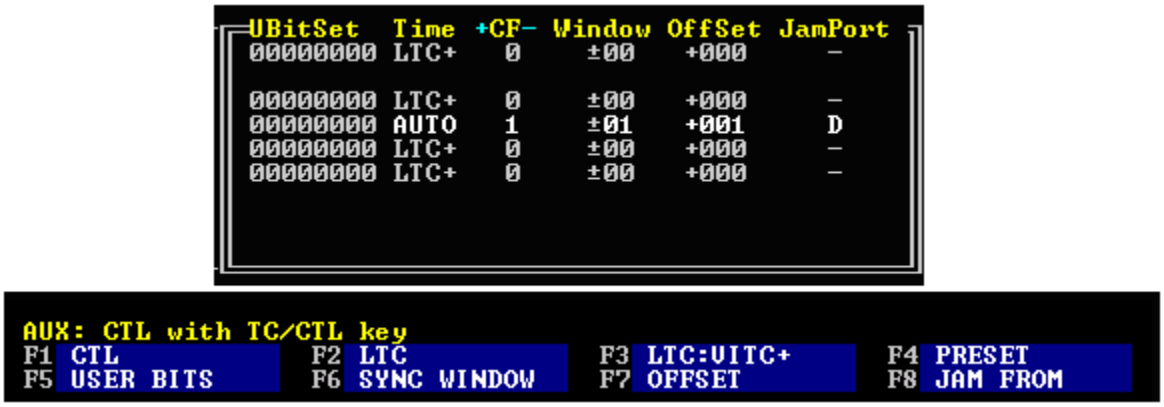
In the example above, the entered number of 12:16 will be divided by 3.

If the resulting calculation results in an uneven number, the number is rounded off to the next lower number.

4.8 The AUX Menu - Assigning Timecode Parameters

The AUX dialog allows you to set “conditional” timecode settings for each assigned VTR.

Press **[AUX]**. The AUX dialog and the AUX Function Menu open.



The AUX Function Menu

[F1] – Press **[F1] CTL** to set the current VTR **tape-timer (**Control Track) as the timecode reference.

To pre-set the VTR tape-timer from the Control Panel, type the **<timecode number>** to be entered, and press **[F4] PRESET**.

[F2] – Press **[F2] LTC+** to set **Longitudinal Time Code** as the VTR timecode reference *(Recommended).*

[F3] – Press **[F3] LTC:VITC+** to set **AUTO** as the VTR timecode reference. In Auto, the VTR switches automatically between **VITC** (Vertical Interval Timecode) and **LTC** (Longitudinal Timecode) as needed by the VTR or the system. You must be sure that the VITC and LTC timecodes match on the videotape or synchronization and cueing problems will develop.

[F4] – Press **[F4] PRESET** to pre-set the current VTR TC generator the same as the VTR current In-time.

If **LTC** or **AUTO** is currently selected, and if the VTR TC generator is set to PRESET, the timecode generator of the VTR is reset to the VTR In-point value.

[F5] – Press **[F5] USER BITS** for the LTC User Bits data (if present) to be displayed at the current Position time of the VTR. If the User Bits were recorded as a continuous timecode, they may also be used for editing.

[F6] – Press **[F6] SYNC WINDOW** to lessen the accuracy and tolerance for cueing, parking and synchronization of this VTR. The default value is 0. Each incremental number increases the tolerance and decreases the accuracy of this VTR by 1 frame. The system attempts to position the VTR precisely in spite of the preset sync tolerance, but does not abort the edit if the deviation is less or equal to the preset value.

CF - Color Framing - Repeatedly press **[+]** or **[-]** {CP4} to modify the CF offset for this VTR. If the color-framing is switched **On** in the **INIT Page**, and a VTR has synchronization problems or the wrong editing position was selected, it is possible to compensate for the phase deviation of the

timecode and the Sub-carrier-to-H phase relationship of the off-tape video signal. Under normal conditions, the editor disables the capstan lock for all source VTRs and sets the record color framer to the value selected in the **INIT Page**.

[F7] – Press **[F7] OFFSET** to compensate for any digital delay caused by the video signal of this VTR passing through a DVE, a frame-store, a digital router or other digital path. The default value is 0. Each number incremented is a 1-frame positive delay. During the edit, the VTR is advanced by this value, and multiplied by the VTR speed.

[F8] – Press **[F8] JAM FROM** to make a 1:1 dub of a videotape with timecode from a third source. Because there are VTRs (such as HI-8) that do not have any timecode output, this JAM function permits you to dub timecode from a third device.

Press **[F8]** then press **[REC] – [P1]-[P9]** to define the source of the timecode. The selected VTR port letter appears in the **JamPort** column. To cancel the JAM function press **[F8], [CLEAR]**.

4.9 Clear and Undo Functions

4.9.1 Clear

The CLEAR function serves as a backspace key when entering data into alphanumeric fields, to delete values, and to cancel certain functions. Deleted values are put into a buffer from which they may be restored by using the UNDO function

Press **[CLEAR]** to open the **CLEAR** Function Menu.

The CLEAR Function Menu.

[F1] – Press **[F1] TIMES** to clear all IN, OUT, and DUR times from the Marks Table.

[F2] – Press **[F2] EDIT** to clear all selections other than the "default" edit settings.

[F3] – Press **[F3] OPEN END** to clear all Out-points, making the edit "open-ended".

[F4] – Press **[F4] MASTER** to clear the Master status for the current VTR. **{Ref: 3.2.2}**

[F5] – Press **[F8] ALL MASTERS** to clear all active Master / Slave relationships. **{Ref: 3.2.2}**

[F8] – Press **[F8] ALL MASTERS** to clear all active Master / Slave relationships.

Clear & Save Registers 1-9

Press **[CLEAR], [1]-[9]** to clear all current values, including VTR assignment, and save them into one of the nine Save Registers. This data is restored by pressing **[UNDO]** {CP3} and the number of the register **[1]-[9].**

Clear times for the current VTR

Press **[CLEAR]** followed by **[IN]**, **[OUT]** or **[DUR]** to clear the corresponding time from the Marks Table for the current VTR. Clearing an In-point or Out-point also clears any existing duration. If a duration is cleared, the Out-point, if any, is also cleared.

Clear Split Edit times

Press **[CLEAR], [SPLIT]** {CP3} to clear all split times from the Split dialog.

Reset Entire System

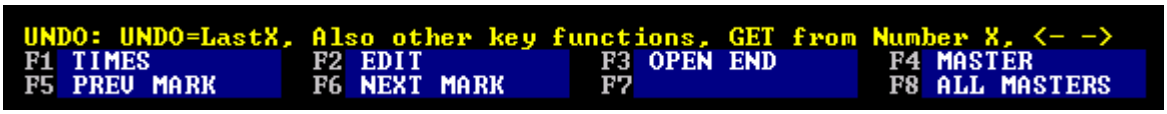
Press **[CTRL][CLEAR]** to reset all values to their default settings. You are prompted with;

Reset Entire System? <ENTER>.

Press **[ENTER]** to reset the entire system.

4.9.2 Undo

Press **[UNDO]** to open the **UNDO** Function Menu. The **UNDO** function restores Cleared values.



The UNDO Function Menu.

[F1] – Press **[F1] TIMES** to restore all previous times to the Marks Table.

[F2] – Press **[F2] EDIT** to restore the previous edit page.

[F3] – Press **[F3] OPEN END** to restore all previous Out-points and Durations.

[F4] – Press **[F4] MASTER** to restore a previously defined Master status for the current VTR.

[F8] – Press **[F8] ALL MASTERS** to restore all previous Master / Slave relationships.

Restore Save Registers 1-9

Press **[UNDO], [1]-[9]** to restore the values previously stored in Save Registers 1-9.

Restore the previous <times> of the current VTR

Press **[UNDO]** followed by **[IN]**, **[OUT]** or **[DUR]** to restore the corresponding previous time of the current VTR. Each successive press of **[SHIFT][UNDO]** followed by **[IN]**, **[OUT]** or **[DUR]** recalls the next of the previous 40 values.

Undo (restore) the previous split values

Press **[UNDO], [SPLIT]** to restore the previous split values.

4.10 TAG (TimeTracking)

The **TAG** functions are Match functions that work in conjunction with the current Edit Decision List (EDL).

4.10.1 TAG (Source Tag)

Pressing **[TAG]** {CP7} calculates a new In-point for the selected source VTR (P1-P9) to ensure that it is in sync (matched) with the recorder In-point (RE). When tagged, a source-time displays a period (**.**) after the matched time as in the example below.

If the recorder In-point timecode does not fall within the boundaries of the recorder In and Out times of the current EDL edit, then an **EXTENDED** Tag is performed; that is, it tags the source as if the recorder times have been extended to the non-existent point.

The system looks backwards in the EDL, starting with the current edit.

4.10.2 R-TAG (Record Tag)

Pressing **[R-TAG]** {CP7} calculates (matches) the In-point of the recorder to the selected source VTR In-point. Only source times that exist in the EDL are matched when using **RECORD TAG**. When tagged, the recorder displays a period (**.**) after the matched time as in the example above.

4.10.3 ATN-TAG (Action Tag)

Press **[ATN-TAG]** {CP7} to back-time already recorded audio or video reference points on the recorder and a source VTR. For example, the recorder has the video of a gunshot recorded and the source has the sound of the gunshot recorded.

1. Set the recorder **In-point** for the Edit.
2. Park the recorder on the frame where the video of the gunshot begins.
3. Park the source on the frame where the sound of the gunshot begins.
4. Press **[ATN-TAG]**. The offset time is calculated and the source In-point is entered.

4.11 Match

Match, like TAG, is a way of matching or re-establishing the timecode relationships between Source or Record times from the Marks Table to edits in the EDL.

To perform a match, press **[SYNC]** {CP7} to open the Match Function Menu.

4.11.1 Record Match

A **Record Match** finds the source matches for the number in the **IN** or **POSITION** column of the primary recorder. In the Match Function Menu shown above,

- …with **[F5] POSITION** selected red, matches will be based on the Recorder position.
- …with **[F5] POSITION** not selected, matches will be based on the Recorder IN-point.

The MATCH Function Menu

[F1] – Press **[F1] UP** to find earlier edits in the EDL with matches based on the settings in the Match Function Menu. Each successive press of this key will find the next edit that meets the search criteria. The EDL will highlight each found edit.

When the last match is found, the search will start again from the bottom of the EDL.

When the desired edit is found and highlighted,

- …press **[F3] TAKE ALL** to enter matches for all devices involved in that edit. All devices include FROM and TO sources, slaves, and foreground and background sources in keys. If a vari-speed source was part of the edit, the match for that device(s) will be calculated taking the speed into account. If the matched sources are not currently mounted, the system will prompt

  Missing Reel: Rnn

- …press **[F4] TAKE** to enter the match for the background device involved in that edit. Background devices include the TO VTR in a cut or transition, or the background in a key. If a vari-speed source was part of the edit, the match for that device(s) will be calculated taking the speed into account. If the matched sources are not currently mounted, the system will prompt

  Missing Reel: Rnn

- …press **[F7] MATCH A/V** to **TAKE** or **TAKE ALL** based on the Recorders selected A/V components.

If no match is found, you will be prompted with "**Not found**".

[F2] – Press **[F2] DOWN** to find later edits in the EDL with matches based on the settings in the Match Function Menu. Each successive press of this key will find the next edit that meets the search criteria. The EDL will highlight each found edit.

When the last match is found, the search will start again from the bottom of the EDL.

When the desired edit is found and highlighted,

- …press **[F3] TAKE ALL** to enter matches for all devices involved in that edit. All devices include FROM and TO sources, slaves, and foreground and background sources in keys. If a vari-speed source was part of the edit, the match for that device(s) will be calculated taking the speed into account. If the matched sources are not currently mounted, the system will prompt

  Missing Reel: Rnn

- …press **[F4] TAKE** to enter the match for the background device involved in that edit. Background devices include the TO VTR in a cut or transition, or the background in a key. If a vari-speed source was part of the edit, the match for that device will be calculated taking the speed into account. If the matched sources are not currently mounted, the system will prompt

  Missing Reel: Rnn

- …press **[F7] MATCH A/V** to **TAKE** or **TAKE ALL** based on the Recorders selected A/V components.

If no match is found, you will be prompted with "**Not found**".

[F3] – Press **[F3] TAKE ALL** to enter matches for all devices involved in that edit. All devices include FROM and TO sources, slaves, and foreground and background sources in keys.

[F4] – Press **[F4] TAKE** to enter the match for the background device involved in that edit. Background devices include the TO VTR in a cut or transition, or the background in a key.

[F5] – Press **[F5] POSITION / INPOINT** to toggle between POSITION and INPOINT.

- With **[F5] POSITION** selected red, matches will be based on the Recorder position.
- With **[F5] INPOINT** not selected, matches will be based on the Recorder IN-point.

[F6] – Press [F6] SYNC to enable the SYNC and SYNC REF features. **{Ref: 4.11.4 / 0}**

[F7] – Press [F7] MATCH A/V to have **[F1] UP** and **[F2] DOWN** find only the matches in the EDL that have the same A/V components currently set for the primary recorder.

If no match is found, you will be prompted with "**Not found**".

[F8] – Press [F8] EXTENDED to calculate a match based on the selected edit, regardless of the boundaries of the actual IN or OUT time.

4.11.2 Source Match

A **Source Match** finds the record match for the number in the **IN** or **POSITION** column of the selected source. In the Match Function Menu shown above,

- With **[F5] POSITION** selected red, matches will be based on the Recorder position.
- With **[F5] INPOINT** not selected, matches will be based on the Recorder IN-point.

All other functions behave as described in Record Match. **{Ref: 4.11.1}**

4.11.3 Auto Match

To perform an Auto Match. press **[ENTER][SYNC]**.

An Auto Match searches the current EDL for an edit that has the **match point**, the same **REEL names** and the same **A/V components** of the selected VTR.

4.11.4 SYN-REF

This feature only works in conjunction with the **SYNC** feature described below.

Press **[SYN-REF]** {CP6} to memorize the timecode offset of the current source VTR with respect to the primary recorder. For example, if you are performing a CUT to P1, and during the edit or preview you manually roll P2, press **[SYN-REF]** to learn the TC offset relationship between the recorder and P2.

4.11.5 SYNC

This feature works in conjunction with the **SYN-REF** feature described above.

Once a timecode offset relationship between a source and the recorder has been learned by previously pressing **[SYN-REF]**, pressing **[SYNC]** {CP7} matches the player In-point with the

recorder In-point based on the learned offset rather than the EDL.

When **[SYN-REF]** is pressed, an "**s**" is displayed to the right of the In-point of the referenced VTR. This signifies that this VTR is "reference synced" to the primary recorder.

4.12 Constants

Constants are registers, in which the user may store entered, transferred, marked or calculated timecode numbers. There are 21 Constant registers that can be recalled into any timecode position. When a VTR timecode is marked into a Constant register, the VTR Reel ID is also included.

To use the Constant registers,

Press **[CONST]** {CP4} to open the Constant dialog.

There are two ways to select a Constant register:

- Press the **[←]** or **[→]** keys to move forwards or backwards in the Constants menu.
- Use the **Jog Wheel** to move forwards or backwards in the Constants menu.

Entering Constants into the Constants Table

- Press **[IN]** to enter the current VTRs **In-time** into the current Constant register.
- Press **[OUT]** to enter the current VTRs **Out-time** into the current Constant register.
- Press **[REC] - [P1-P9]** to enter that VTRs **Position** into the current Constant register.
- Type a **<timecode number>** into the keyboard register and press **[ENTER]**.

The CONST Function Menu

[F1] – Press **[F1] Auto Increment.**

With this function **selected**, the Constants table auto-increments the registers after each entry. When reaching the end of the Constant list, the first register (01) is removed, and the last register (21) is used for the new entry.

With this function **not selected**, all entries are entered into the same register until the user manually selects a new register.

[F5] – Press **[F5] Clear All** to clear the contents from all Constant registers, and select Register 01.

Recalling Constants from the Constants Table

To recall Constants, with the Constants Table open

- Press **[SHIFT][IN]** (BAK) to recall the current Constant to the current VTRs **In-time**.
- Press **[SHIFT][OUT]** (BAK) to recall the current Constant to the current VTRs **Out-time**.

5. Preview

5.1 Preview Mode Selection & Setup

1. Press **[SHIFT][INIT]** {CP4} to open the **INIT Page** and select the desired Preview Mode.

2. With your Jog Knob, highlight the item **Monitor Switching**.

The **Monitor Switching Function Menu** opens.

.

The MONITOR SWITCHING Function Menu

Select one of the following Preview modes:

[F1] - Press **[F1] V Monitor** to always select the REC VTR on the preview Aux Bus. The default Aux Bus is Aux Bus 1. Press **[ESC]** to return to the edit screen.

[F2] - Press **[F2] V PvwMonitor** to enable Aux Bus Preview. In this mode, the REC VTR is always selected on the Aux Bus. When source VTRs P1-P9 are selected, they are selected on the selected M/E and the aux bus is switched to the PGM OUT crosspoint. The default Aux Bus is Aux Bus 1.

1. Press **[ESC]** to return to the edit screen.

2. Press **[SHIFT][XPT]** to assign the Program Bus re-entry crosspoint number. The XPT dialog opens.

3. Press **[F7] RoutDestVid** and enter the Program Bus re-entry crosspoint number.

[F3] - Press **[F3] A Monitor** to monitor an audio mixer E-E through the REC VTR.

[F4] - Press **[F4] A PvwMonitor** to monitor audio through the ESAM 2 audio mixer.

[F5] - Press **[F5] Mon Direct** to also select the current player on the Aux Bus. This should only be used when items F2 and F4 are selected.

[F6] V External is not currently implemented.

[F7] - Press **[F7] LiveSwitch** to allow the switcher and mixer crosspoints to follow [P1]-[P9], [V], [A1], [A2], [A3], [A4] changes during the preview, without edits going into the EDL. **{Ref: 6.4.3}**

[F8] A External is not currently implemented.

During an insert edit, any change made to the current A/V components by pressing **[V], [A1]-[A4]**, or to the current TO source by pressing **[P1]-[P9]**, is applied and immediately added as a separate edit to the EDL.

5.2 Performing Previews

A preview is a rehearsal of the edit currently programmed in the Marks Table. The edit is only simulated. Nothing is recorded to tape and no data is sent to the EDL. Previewing an edit before performing it enables you to refine the edit before committing it to tape.

In order to perform a preview, In-points must be set for the player(s) and recorder(s) that are involved in the edit. If a preview is attempted and an In-point for a VTR involved in the edit is undefined, the VTRs current position is set as the In-points.

- Press **[PREVIEW]** {CP1} to initiate a preview or rehearsal of the current Mark Table data.
- Press **[ALLSTOP]** to halt a preview.
- Press **[ENTER][PREVIEW]** to preview the currently programmed video switcher effect without rolling VTRs.

5.2.1 Pre-roll

VTRs must be synchronized at the In-point of a Preview or the preview will be aborted. To ensure synchronization, VTRs involved in the Preview will first pre-roll to give them time to lock to their timecode reference. As some VTRs require more or less pre-roll than other VTRs, item **Preroll Frames** in the **INIT Page** enables setting of the pre-roll time. **{Ref: 8.1.7}**

During the pre-roll of a preview or recording, the status for each VTR is displayed in the Mode column of the edit screen. If synchronization fails, and the **INIT Page** item **RepeatFailed** is **On**, the edit is aborted and the system re-cues and attempts the edit up to two more times.

During the pre-roll of a preview or recording, the pre-roll **countdown to the edit** is displayed in the "**Edit**" field of the edit screen above the Mode column. The time is counted in reverse from the pre-roll point to the edit In-point of the currently programmed edit. At the edit In-point, the time counts forward, displaying the time elapsed in the current edit.

5.2.2 Post-roll

The post-roll is the amount of time the VTRs involved in the current edit will continue rolling after reaching the defined Out-time. This is helpful when seeing the Out-point of an edit in context is desirable.

To set the post roll time for a preview, select **Postroll Frames** in the **INIT Page**. **{Ref: 8.1.8}**

Note 1: *A preview in the* ***Record E-E*** *mode is not possible if the* ***Record Inhibit*** *is enabled on the VTR.*

Note 2: *In the* ***Assemble mode****, only the edit In-point is previewed.*

5.2.3 Preview Options

[PREVIEW] (**V**ideo **V**ideo **V**ideo)

V – During the pre-roll the primary recorder is seen.
V – At the edit In-point the switcher & mixer output are seen.
V – At the edit Out-point (if any) the primary recorder is seen.

[BVB] (Black **V**ideo **B**lack**)**

B – During the pre-roll Black is seen.
V – At the edit In-point the switcher & mixer output are seen.
B – At the edit Out-point (if any) Black is seen.

[VBV] (**V**ideo **B**lack **V**ideo)

V – During the pre-roll the primary recorder is seen.
B – At the edit In-point Black is seen.
V – At the Out-point of the recorder (if any) the primary recorder is seen.

[SHIFT][PREVIEW] (**- - - V**ideo **V**ideo)

V – Approximately 5:00 before the Out-point the switcher & mixer output are seen.
V – At the edit Out-point the primary recorder is seen.

[SHIFT][BVB] (- - - Video **B**lack**)**

V – Approximately 5:00 before the Out-point the switcher & mixer output are seen.
B – At the edit Out-point Black is seen.

[SHIFT][VBV] (- - - Black **V**ideo**)**

B – Approximately 5:00 before the Out-point Black is seen.
V – At the edit Out-point the primary recorder is seen.

This page intentionally left blank

6. Record

6.1 Record Overview

In order to perform a recording, several rules must be met:

- The recorder must have an In-point.
- At least one source must have an In-point.
- The recorder must have an A/V component selected, or be in the Assemble Mode.

VTRs must be synchronized at the In-point of a record, or the edit will be aborted. To ensure proper synchronization, VTRs involved in the edit will first pre-roll to give them time to lock to their timecode reference. As some VTRs require more or less pre-roll than other VTRs, item **Preroll Frames** in the **INIT Page** enables setting of the pre-roll time. **{Ref: 8.1.7}**

To set the post roll time for an edit, item **Postroll Frames** in the **INIT Page** enables setting of the postroll time for a recording. The post-roll is the time the VTRs will continue to roll after the programmed Out-time (if any) of an edit. **{Ref: 8.1.8}**

6.2 Recording

Press **[RECORD]** to execute the edit currently programmed in the Marks Table.

The VTRs involved in the edit roll from a pre-roll point defined in **INIT Page** item **Preroll Frames**.

If the programmed edit has a defined duration,

the edit ends at that time, the Marks Table is updated, the previous Out-points become the new In-points, and the edit is added to the EDL.

If the programmed edit is open-ended, and does not have a duration,

Press **[RECORD]** after the edit has begun to properly terminate the edit.

The edit ends after a few frames, the Marks Table is updated, the previous Out-points become the new In-points, and the edit is added to the EDL.

When the edit is added to the EDL, it is marked with a background to indicate that it has been recorded to tape, and not added to the list with the ADD feature as a “dummy edit”. **{Ref: 11.2}**

If you press **[ALLSTOP]** to abort an edit after it has begun, the Marks Table does not update, and the edit is not added to the EDL.

6.3 Durations

The duration of an edit is the time difference between the In-time and the Out-time of an edit.

- The recorder duration has priority over source durations.

- A duration applied to a FROM source delays both the programmed effect start and the TO VTR pre-roll start, by the length of the duration.

A duration can be established by:

- Setting an Out-time that is later than the current In-time. The duration is calculated. **{Ref: 4.2}**.

- Typing a duration <**time**> and pressing **[DUR]**. The Out-time is calculated.

If no duration is defined, the OUT position of the recorder displays **Open End**, and the recorder continues to record until stopped by the user.

If a duration is defined for the recorder, the edit terminates at the Out-point automatically, the Marks Table updates, and the edit is added to the EDL.

If a duration has been defined and the edit is ended by pressing **[RECORD]** {CP1} prior to the Out-point, the edit ends after a few frames, the Marks Table updates, and the edit is added to the EDL.

Each time an edit is added to the EDL, the Out-times of the edit are updated and become the new In-times for the recorder and the source(s).

Press **[CLEAR], [F3] OPEN END** to clear all durations and make the current edit open-ended. An open-ended edit is ended by pressing **[RECORD]** or aborted by pressing **[ALLSTOP]**.

6.4 Insert Mode

The default edit mode for the primary recorder is the **Insert** mode. Editing in the Insert Mode assumes that a Basic track of video, control track and timecode have been pre-recorded on the record videotape. With most VTRs, you have the ability to record 4 or 8 independent audio record channels. Control of up to 12 record channels of audio is also available, depending on the Record VTRs capabilities.

- Press **[V]** {CP6} to toggle **V**ideo as the video component for the current edit. The letter **V** is displayed in the Mode column of the recorder.

- Press **[A1], [A2], [A3], [A4]** {CP6} to toggle **A**udio channels **1-4** respectively as audio record components for the current edit (device dependent).

- Press **[MODE]** followed by **[5] – [9]** on the numeric keypad {CP4} to toggle **A**udio channels **5-9** respectively as audio record components for the current edit (device dependent).

- Press **[MODE]** followed by **[A]** (MASTER), **[B]** (MACRO) or **[C]** (GPI) to toggle **A**udio channels **10-12** respectively as audio record components for the current edit (device dependent).

The characters **1-9, A, B, C** are displayed in the Mode column of the recorder accordingly.

Note 1*: If no A/V components are selected for the primary recorder, the edit is performed as a preview, and the edit is added to the EDL.*

Note 2*: If a record VTR is currently in the* ***Assemble*** *mode, pressing one of the A/V component keys automatically changes the mode of that recorder to* ***Insert****.*

6.4.1 Audio Cue Channels

When using a VTR with digital audio channels, CUE channels 1 and 2 (if available) may be used.

To select CUE channels 1 or 2,

Press **[MODE], [F3] CUE 1** or **[F4] CUE 2**. The selected cue channel is displayed as a superscript alongside the current A/V Components. In the following example, Cue channel 1 has been selected: V12**[1].**

If the selected VTR does not support CUE channels 1 and 2, [F3] CUE 1 and [F4] CUE 2 do not appear in the MODE Function Menu.

6.4.2 Timecode Track

When using an older model VTR with timecode on audio channel 3, the timecode track (track 3) can also be assigned to record.

To record on the timecode track,

Press **[MODE], [F8] TIMECODE**. When selected, the timecode marker is displayed alongside the current A/V components. For example: V12**T**.

If the selected VTR does not support recording TC to channel 3, **[F8] Timecode** does not appear in the MODE Function Menu.

6.4.3 Live To List

During an Insert edit it is possible to add or delete **A/V** components or to change **TO** sources in real-time.

1. Press **[SHIFT][INIT]** to open the **INIT Page**.

2. Turn item **LiveToList On**.

During an insert edit, any change made to the current A/V components by pressing **[V], [A1]-[A4]**, or to the current TO source by pressing **[P1]-[P9]**, is applied and immediately added as a separate edit to the EDL.

6.5 Assemble Mode

Press the **[ASMBL]** {CP6} key to select Assemble as the recording mode for the primary recorder. An assemble edit, displayed as **ASSEM**, can only be performed if first enabled by setting **INIT Page** item **Assemble Edit** to **Allow**.

6.5.1 First Edit

1ST EDIT is used to pre-stripe or to start a recording on a blank tape. For this feature to function,

- Assemble edits must be enabled by setting **INIT Page** item **Assemble Edit** to **Allow**.
- The record VTR must be in the **ASSEM** mode.
- Edit **In**-points must be defined.
- The record VTR timecode switch must be set to **INTERNAL**.

1. Press **[1ST ED]** {CP6}. You are prompted

   DF/NDF OK ? Confirm with <RECORD>

2. Press **[RECORD]** to confirm and begin**.**

The recording begins 10 seconds before the defined In-point. The player(s), if any, are started at their normal pre-roll times.

Any slaved recorders with **ASSEM** defined will also hard Record at their defined IN-points minus 10 sec.

6.5.2 Manual Record (Hard Record)

To force a Record VTR to immediately commence a hard record,

1. Press **[SHIFT][RECORD].** You are prompted

   DF/NDF OK ? Confirm with <MANUAL RECORD>

2. Press **[SHIFT][RECORD]** again to verify and begin.

To stop this recording press **[ALLSTOP].**

If you wish to preset the TC generator of the VTR to start at a particular timecode number, enter the required TC number as the **In-point** for that VTR before issuing the manual record command. This timecode counts upward from that value. You can also preset the TC generator using the TC entered in the Keyboard Register. **{Ref: 4.3}**

If **[BLACK]** was selected as the source for a "Jam" mode recording, the system time (time-of-day set in the computer) counts upward from that time.

Note 1: *The Timecode Generator of the recorder must be set to* ***Internal****.*

Note 2: ASSEM *can only be used if first enabled by setting* ***INIT Page*** *item* ***Assemble Edit*** *to* ***Allow****.*

6.6 Split Edit

It is possible to define separate video and audio **In-**points and **Out-**points for the primary recorder. This is called a **Split Edit**. You may program up to 4 separate A/V splits per edit. To program a split edit,

1. Press **[SPLIT]** {CP3}. The SPLIT dialog and the SPLIT Function Menu open.

2. Press **[F1]-[F4]** in the SPLIT Function Menu to select the Split to program. In the example above **[F1] Split 1** was selected.

3. Press **[V], [A1]-[A4] to** select the A/V components to be **added** to the current recorders components.

Press **[MODE]** followed by **[5] – [9]** on the numeric keypad {CP4} to select **A**udio channels **5-9**.

Press **[MODE]** followed by **[A]** (MASTER), **[B]** (MACRO) or **[C]** (GPI) to select **A**udio channels **10-12**.

The characters 1-9, A-C are displayed in the Mode column of the recorder accordingly. In the example above **[V]** was selected.

The SPLIT time may be entered as a time offset from the edit In-point (**[F6] OFFSET**) or entered or marked as a timecode number (**[F5] ABSOLUTE**), according to the editing situation.

4. Press **[F5] ABSOLUTE -** The main and split-IN or split-OUT times can be entered or marked separately.

   OR

   Press **[F6] OFFSET -** The time offset from the edit In-point to the split time is entered. The offset between the split time and the main time remains the same, even if the main time is modified.

   With OFFSET selected, OUT split-points can only be entered or marked if an Out-point has already been defined for the VTR. The OFFSET display mode is identified by a plus or minus sign; Plus (**+**) defining before the In-time, and minus (**-**) after the In-time.

To delete individual split-times with the Split Dialog <u>open</u>,

Press **[CLEAR][IN]** to clear the selected IN split-point from the Split Dialog.
Press **[CLEAR][OUT]** to clear the selected OUT split-point from the Split Dialog.

To delete ALL split-times with the Split Dialog <u>closed</u>,

Press **[CLEAR][SPLIT]** to clear all split-points.

The A/V components can be randomly selected for the In-time and Split times, so you can decide if the audio or video is to be offset.

The SPLIT value can also be defined for the source. First mark or enter the In-point of the player. Then select the SPLIT mode and define the SPLIT time for the selected player.

If you select the source again, its IN-time is highlighted, showing the offset of the player IN-time. Now you can define the SPLIT time by marking the player IN. This has no effect upon the main In-time of the player.

After leaving the SPLIT menu the original times are again displayed.

Note: *Video and audio mixer effects are always activated at the edit In- time.*

6.7 Multiple Record VTRs

You can define as many VTRs to be recorders as you like. If only one recorder is used, it should be the primary recorder assigned in the upper line of the edit display, so that the [V], [A1]-[A8] keys refer to that record VTR.

To assign a source VTR to be a recorder,

1. Select the VTR.

2. Press **[MODE].** The MODE Function Menu opens.

3. Press **[V], [A1]-[A4]** to select the A/V components to be recorded on this VTR.

   Press **[MODE]** followed by **[5]–[9]** on the numeric keypad {CP4} to select **A**udio channels **5-9**.

   Press **[MODE]** followed by **[A]** (MASTER), **[B]** (MACRO) or **[C]** (GPI) to select **A**udio channels **10-12**.

As soon as any A/V components are selected, they are displayed for the new recorder. The message **MULTIPLE RECORD** is displayed above this column.

In order for the additional recorder(s) to roll within the edit, they must be slaved to the recorder **{Ref: 3.2.3}** or be Ganged to a VTR involved in the edit. **{Ref: 3.2.1}**

To make this source VTR no longer be a recorder,

1. Select the VTR.

2. Press **[MODE].** The MODE Function Menu opens

3. Press **[F1] PLAY 100%**.

6.7.1 Multi-Record - Slaving Multiple Record VTRs in Master/Slave Mode

To enable Slaved VTRs to record simultaneously,

1. Select the VTR (P1-P9) to be assigned as a secondary recorder.

2. Press **[MASTER]**. The MASTER Function Menu opens.

3. Press **[REC]**. **RE** is displayed in the Master column for this VTR.

4. Select the new record VTR and press **[MODE]** {CP6}.

5. Press the desired **[V], [A1], [A2], [A3], [A4] component** keys to assign to this recorder if this recorder is capable of performing an **INSERT** edit.

   Press **[MODE]** followed by **[5] – [9]** on the numeric keypad {CP4} to toggle **A**udio channels **5-9** for this recorder.

   Press **[MODE]** followed by **[A]** (MASTER), **[B]** (MACRO) or **[C]** (GPI) to toggle **A**udio channels **10-12** for this recorder.

   OR

   Press **[ASMBL]** if this recorder will **ASSEMBLE** edit. **ASSEM** will be displayed.

The message **MULTIPLE RECORD** appears on the status monitor. The selected master definition is displayed in the MASTER column.

Edits recorded to secondary recorders are stored in the EDL and are repeatable by recalling them from the EDL.

To disable Slaved recorders,

Press **[MODE]** and toggle the A/V components **off** for this recorder.

OR

Press **[MODE], [F1]**.

The message **MULTIPLE RECORD** is removed from the status monitor, but the M/S relationship of the VTRs remains active.

6.7.2 Multi-Record - Ganging Multiple Record VTRs in Gang Mode

To enable Ganged VTRs to record simultaneously,

1. Select the VTR (P1-P9) to be assigned as a secondary recorder.

2. Press **[SHIFT][P1-P9]**. An asterisk (*****) is displayed next to the defined source to the left of the source column. **{Ref: 3.2.1}**

3. Select the new record VTR and press **[MODE]** {CP6}.

4. Press the applicable **[V], [A1], [A2], [A3], [A4] component** keys to assign to this recorder if this recorder is capable of performing **INSERT** edits.

   Press **[MODE]** followed by **[5] – [9]** on the numeric keypad {CP4} to toggle **A**udio channels **5-9**.

   Press **[MODE]** followed by **[A]** (MASTER), **[B]** (MACRO) or **[C]** (GPI) to toggle **A**udio channels **10-12**.

   OR

   Press **[ASMBL]** if this recorder will **ASSEMBLE** edit. **ASSEM** will be displayed.

   The message **MULTIPLE RECORD** appears on the status monitor.

Edits recorded to secondary recorders are stored in the EDL and are repeatable by recalling them from the EDL.

To disable Ganged recorders,

Press **[MODE]** to toggle the A/V components **off** for this recorder.

OR

Press **[MODE], [F1]**.

The message **MULTIPLE RECORD** is removed from the status monitor, but the Gang relationship of the VTRs remains active.

6.8 Preread

Some digital VTRs have a PRE-READ function, also called “read-before-write”, which permits the recorder to be used as a source during an edit.

Press **[PRERD]** {CP6} to enable this function.

When activated, the letter **P** appears in the Mode column alongside the A/V components.

An edit can now be defined that includes the primary recorder as a source. For example, **DISSOLVE** from **REC** to **P1**.

{Ref: 9 , [F7] Auto Pre-read }

***Note 1**: Pre-read is only applied to the R-VTR.*
***Note 2:** The record VTR must be pre-read capable.*

6.9 Next Edit Number

The next EDIT# is displayed on the top-left section of the edit screen, and increments automatically after each edit.

To manually change the next edit number to be performed,

1. Press **[EDIT #]** {CP4}. You will be prompted with

   Set Next Edit# nnnn

   where **nnnn** is the next sequential number available. Accept the default entry, or enter a number from 1-9999.

2. Press **[ENTER]** to accept the entry. If you enter a number that already exists in the EDL, it will not be accepted and you will be prompted with

   not valid!

   If the EDL **is** positioned at its END, **NEXT EDIT # nnnn** is displayed at the top, left of the edit screen to show you the number of the next edit to be performed.

   If the EDL **is not** positioned at its END, **THIS EDIT # nnnn** is displayed at the top, left of the edit screen to show you the number of the edit currently selected in the EDL.

   Note: Do not attempt to create duplicate Edit # entries in the EDL!

7. Switcher & Mixer Control

7.1 Transitions & Effects

Transitions that can be executed automatically by the editor include Dissolves (Mix), Wipes (Patterns), Cuts, Keys, and many combinations of the above. Transitions are programmed with the Control Panel, and appear in the Transition and Memory area of the edit screen.

The current M/E to be controlled on the video switcher is selected with **INIT Page** item **Video Switcher**. **{Ref: 8.1.4}**

7.1.1 Cuts

1. Press **[CUT]** {CP5} to make the next edit a cut edit. Any previously programmed transitions are removed.

2. Press **[P1-P9]** to select the source to **CUT TO**.

   In the following example, **P1** is selected as the source.

If the **INIT Page** item **TO-Dblpress** is **On**, you must press the desired TO source twice (two times) in quick succession. For example, **[P1]+[P1]**. This allows you to select another VTR without changing your CUT TO source.

7.1.2 Dissolves (Mixes)

1. Press **[DISS]** {CP5} to make the next edit a dissolve edit. The Dissolve dialog is displayed with the current VTR selected as the **TO** source. The following is displayed:

2. With the **FROM** field highlighted, press **[P1-P9]** to confirm and select the **FROM** source. The TO field is highlighted automatically.

3. With the **TO** field highlighted, press **[P1-P9]** to confirm and select the **TO** source.

   If the **INIT Page** item **TO-Dblpress** is **On**, you must press the desired **TO** source twice (two times) in quick succession. For example, **[P2]+[P2]**. This allows you to select another VTR without changing your TO source.

4. Press **[F2] RATE** to enter the **<transition rate>** and press **[ENTER]** to accept.

   To enter the RATE in frames, press **[F2], <frame count>, [ENTER]**.

   To enter the RATE in timecode, press **<ss:ff>, [F2].**

The DISS Function Menu

[F1] - Press **[F1] FROM SOURCE** to select or change the **FROM** source. The **TO** source can be selected directly.

[F2] - Press **[F2] RATE** to enter the dissolve rate. This duration may be entered in either timecode (hh:mm:ss:ff) or in frames.

To enter the RATE in frames, press **[F2], <frame count>, [ENTER]**.
To enter the RATE in timecode, press **<ss:ff>, [F2].**

Delayed Dissolve
If a duration is applied to the **FROM VTR** in the Marks Table, the programmed dissolve is delayed by this amount of time, as well as the pre-roll of the TO VTR. A duration applied to the FROM VTR of a transition does not affect the duration of an edit.

Dissolve Only Preview
To preview the currently programmed dissolve without rolling VTRs, press **[ENTER][PREVIEW].**

7.1.3 Wipes (Patterns)

1. Press **[WIPE]** {CP5} to make the next edit a Wipe edit. The Wipe dialog is displayed with the current VTR selected as the **FROM** source. The following is displayed:

2. With the **FROM** field highlighted, press **[P1-P9]** to confirm and select the **FROM** source. The TO field is highlighted automatically.

3. With the **TO** field highlighted, press **[P1-P9]** to confirm and select the **TO** source.

   If the **INIT Page** item **TO-Dblpress** is **On**, you must press the desired **TO** source twice (two times) in quick succession. For example, **[P2]+[P2]**. This allows you to select another VTR without changing your TO source.

4. Press **[F2] RATE** to enter the **<transition rate>** and press **[ENTER]** to accept.

   To enter the RATE in frames, press **[F2], <frame count>, [ENTER]**.
   To enter the RATE in timecode, press **<ss:ff>, [F2].**

5. Press **[F3] PATTERN#** to enter a **<wipe pattern number>** in the **Patt #** field and press **[ENTER]** to accept.

The WIPE Function Menu

[F1] - Press **[F1] FROM SOURCE** to select or change the **FROM** source. The **TO** source can be selected directly.

[F2] - Press **[F2] RATE** to enter the wipe rate. This duration may be entered in either timecode (hh:mm:ss:ff) or in frames.

To enter the RATE in frames, press **[F2], <frame count>, [ENTER]**.
To enter the RATE in timecode, press **<ss:ff>, [F2].**

[F3] - Press **[F3] PATTERN** to enter or change the desired wipe pattern number.

Delayed Wipe
If a duration is applied to the FROM VTR, the programmed wipe is delayed by this amount of time, as well as the pre-roll of the TO VTR. A duration applied to the FROM VTR in a programmed transition does not affect the duration of an edit.

Dissolve Only Preview
To preview the currently programmed wipe without rolling VTRs, press **[ENTER][PREVIEW].**

7.1.4 Delayed Transitions

To delay the start of a dissolve or wipe:

If a duration is applied to the FROM VTR, the programmed effect is delayed by this amount of time, as well as the pre-roll of the TO VTR. A duration applied to the FROM VTR does not affect the duration of an edit.

7.1.5 Keys

A key is a special effects process in which an image from a switcher input is inserted into or over the image from another switcher input.

Press **[KEY]** {CP5} to make the next edit a key edit. The KEY Function Menu opens.

*If the KEY Function Menu doers not open and you are prompted with "**Keys are disabled**", press **[SHIFT][INIT]** to open the INIT Page, highlight **Video Swr**, and toggle **[F7] No Key Ctrl**.*

The KEY Function Menu

[F1] - Press **[F1] KEY1 IN** to toggle Keyer 1 on or off as a key for this edit.

[F2] - Press **[F2] KEY2 IN** to toggle Keyer 2 on or off as a key for this edit.

[F3] - Press **[F3] KEY3 IN** to toggle Keyer 3 on or off as a key for this edit.

[F4] - Press **[F4] KEY4 IN** to toggle Keyer 4 on or off as a key for this edit.

Any combination of up to 4 keys can be selected (switcher dependent). In the example below, **KEY1** has been selected as the key (foreground), and P1 as the Key Source.

In the above example, both the background (P2) and the foreground (P1) are cut IN (on). P1 has been selected as the Key source (KP1). If no source had been selected as the key source, the current selection of **Key Bus 1** would be used for a self-key.

To specify a Key Source,

1. Press **[KEY]** to make the next edit a key edit. The Key dialog is displayed with the current VTR selected as the **BKGD** source. The KEY Function Menu opens.

2. Press the desired **KEY IN** Function Key **[F1]-[F4]**.

3. Press **[F5] KEY SOURCE** and then press the source **[P1]-[AX2]** that will be used as the key source. In the example below, **P2** is the BKGD, **Keyer 1** is the selected keyer, and **P1** is the Source being keyed.

To specify a Key Source and a Fill source,

1. Press **[KEY]** to make the next edit a key edit. The Key dialog is displayed with the current VTR selected as the **TO** source. The KEY Function Menu opens.

2. Press the desired **KEY IN** Function Key **[F1]-[F4]**.

3. Press **[F5] KEY SOURCE** and press the source **[P1]-[AX2]** that will be used as the **KEY SOURCE**.

4. Press **[F6] FILL SOURCE** and press the source **[P1]-[AX2]** that will be used as the **FILL SOURCE**.

In the example below, **P1** is the background, **Keyer 1** is the selected keyer, **P2** is the Source being keyed and **P3** is the Source being used to **FILL** the key.

To transition (effect) the key,

1. Program the key as described earlier.

2. Press **[DISS] or [WIPE].** The KEY EFFECT Function Menu opens.

3. Press **[F1] FROM SOURCE** to change the FROM source in the transition dialog.

4. Press **[F2] RATE** to add or change the transition rate.

In the above example, **P1** is the background and **Keyer 1** is dissolving **P2** IN at a rate of 30 frames.

Assure that **[F8] ADD BKGD** in the Keyer Function Menu is **off** or the BKGD will transition with the key.

The KEY Function Menu (continued)

[F5] - Press **[F5] KEY SOURCE** to define the source that will cut the hole filled by the Fill Source.
For example, **KP1** would designate source P1 as the key source.

[F6] - Press **[F6] FILL SOURCE** and then select the source that will fill the hole cut by the Key Source. For example, **FP1** would designate source P1 as the fill source.

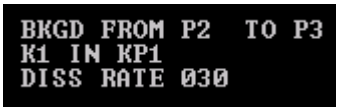
[F7] - Press **[F7] DSK IN** to enable the DSK (Downstream Keyer). In the example below **P1** is the background and the **DSK** is transitioning **in** (on) at the record In-point at a rate of 30 frames.

Press **[ESC]** to exit the KEY Function Menu, and the DSK EFFECT Function Menu opens.

Press **[F4] DSK RATE** to add or change the transition rate for the DSK.

Press **[ESC]** to return to the KEY Function Menu.

[F8] - Press **[F8] ADD BKGD** to transition the background as well as the Key.



In the example above, **P2** BKGD transitions to **P3** BKGD, while **Keyer 1** transitions **P1** On, all at a rate of 30 frames.

7.1.6 Manual Transition

In this mode, both the FROM and TO sources are defined, but no transition is programmed in order to allow the mixer and switcher to be manually controlled by the user.

1. Press **[MAN]** {CP5}**.**

2. Press **[P1-P9]** to select the **FROM** source.

3. Press **[P1-P9]** to select the **TO** source.

Both VTRs roll during the edit.

7.1.7 E-MEM ® (Effects Memory)

Video switcher panel settings (fader bar position, key clip level, background color, etc.) can be stored in switcher memory and recalled during an edit by the editor. The memory register is recalled at the beginning of pre-roll. Most switcher manufacturers have their own names for these registers, but in this manual the term E-MEM is used to generically refer to these switcher memory registers.

With most analog switchers, the E-MEMs used in the edit can be stored in the EDL. With almost all digital switchers, the E-MEM is stored only in the local switcher panel memory.

Press **[E-MEM]** {CP5}. The E-MEM dialog is displayed with the current VTR selected as the **TO** source. The following is displayed:

If you enter a RATE, a transition will execute. If the RATE is set to 000, a transition will not be performed.

The EMEM Function Menu

[F1] - Press **[F1] FROM SOURCE** followed by **[P1]-[P9]** to select or change the **FROM** source. The **TO** source can be selected directly. If the FROM and TO sources are the same, the effect will be a CUT.

[F2] - Press **[F2] REGISTER** to define the E-MEM register to use. Please refer to the operating manual of the video switcher to see which register numbers are available for use.

[F3] – Press **[F3] RECALL** to recall the specified E-MEM register at the beginning of the edit. Please refer to the operating manual of the video switcher to see which register numbers are available for use.

[F6] – Press **[F6] RATE** to indicate that you want a transition with the indicated rate to occur within the edit. The AUTO TRANSITION is executed on the selected E-MEM register.

Press **[CLEAR], [F6] RATE** to clear and disable the AUTO TRANSITION.

[F7] – Press **[F7] LEARN** to learn the current switcher settings to an E-MEM register. Please refer to the operating manual of the video switcher to see which register numbers are available for use.

7.1.8 Cue ALL Recorder(s) and Player(s)

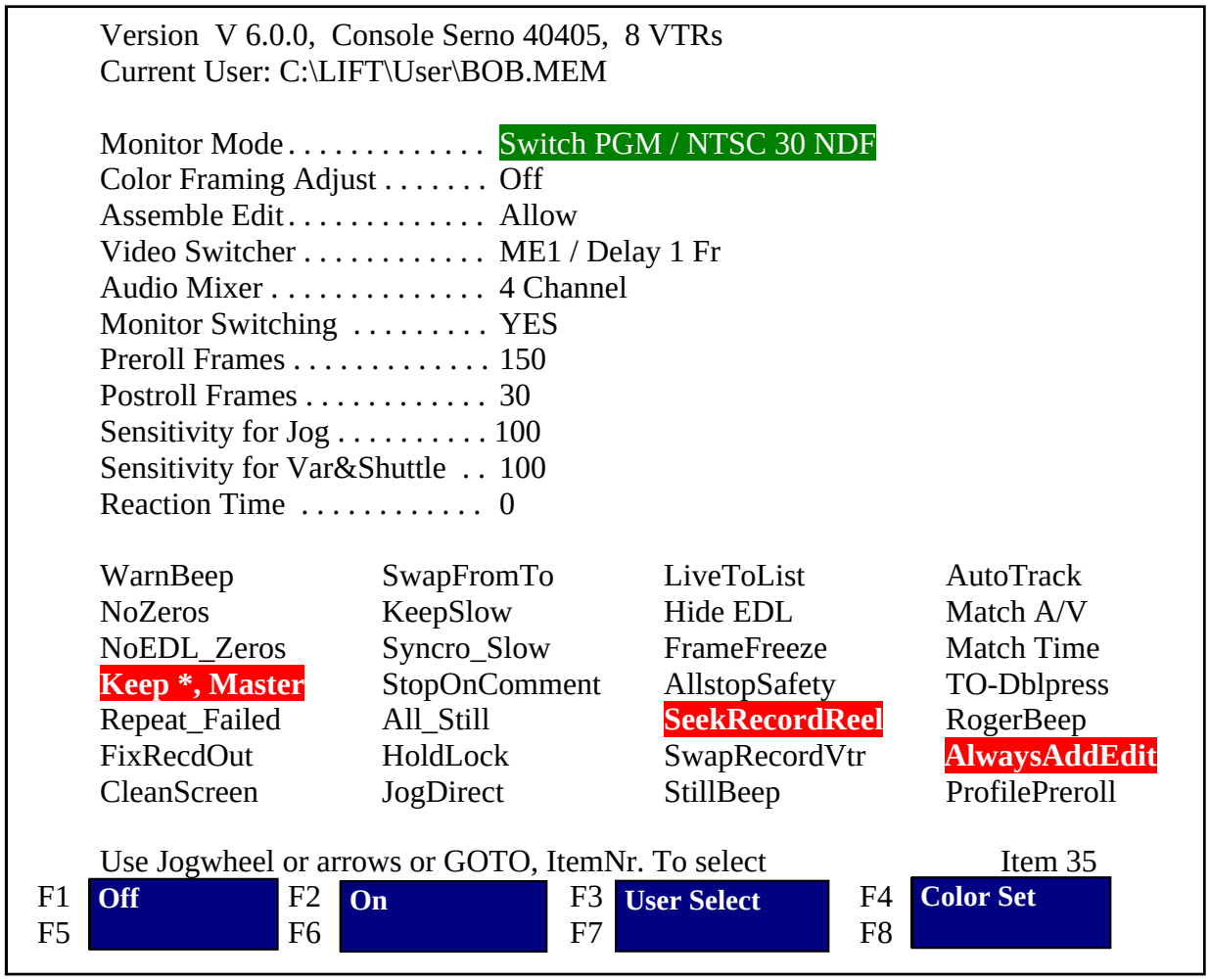
When an edit is started after a long break, VTRs may have switched to standby off. If so, the edit may abort after its first attempt to synchronize. To ensure synchronization on the first attempt, before the edit, press **[SHIFT][CUE]** {CP5}. All machines programmed to roll during the edit cue to their pre-roll points and park.

8. The INIT Page

The **INIT Page** is used to define many system constants and settings. These system settings, along with other system configuration items, can be saved and recalled in **User Files. {Ref: 8.2}**

Press **[SHIFT][INIT]** {CP4} to open the **INIT Page**. The **INIT Page** and the INIT Page Function Menu are displayed.

- The top line displays the software version, serial number, and amount of VTRs enabled.
- The next line displays the path and name of the Current User (configuration) file.
- The upper section of the INIT Page contains a list of 11 selection fields and numeric constants.
- The middle section of the INIT Page contains "switches" which can be enabled (On) or disabled (Off).
- The bottom section of the INIT Page displays the Function Menu for the currently selected item.



The **Jog Knob** or the **[←]** and **[→]** {CP10} arrow keys are used to move the **selection bar** through the individual items on this screen. You may also press **[GOTO], <item number>, [ENTER]** if the item number is known. The number for each selection is displayed (above the F4 option) when the item is selected.

The functions of the Function keys at the bottom of this page change as different items are selected. When a Function key is pressed, that selection becomes the current state for this item.

Press **[ESC]** to exit the INIT Page. When in a multiple level menu item, press **[ESC]** to exit each level.

New settings are saved automatically to the system hard drive.

8.1 INIT Page Settings

8.1.1 Monitor Mode

[F1] - [F4] select the preview or record mode for the recorder output. This setting interacts with the "Monitor Switching" setting below.

[F5] - [F8] select the system standard and frame rate

[F1] - Press **[F1] Off** so pressing [REC]-[P1-P9], or in any way selecting sources or the recorder, send no E-E commands to the R-VTR.

This function also causes the editor to not switch to the R-VTR Aux Bus crosspoint when the recorder is manually selected.

[F2] - Press **[F2] Switch PGM** to select [REC] - [P1-P9] on the current switcher M/E when selecting between sources.

[F3] = Press **[F3] Record EE** to switch the recorder to **E-E** when [P1-P9] are pressed, and to switch the recorder to **tape playout** when [REC] is pressed.

[F4] = Press **[F4] Both** to setup the editor with both **Switch PGM** and **Record EE** enabled.

[F5] = Press **[F5] NTSC 30 NDF** to select Non-Drop Frame TC for the Primary Recorder.

[F6] = Press **[F6] NTSC 29.98 DF** to select Drop Frame TC for the Primary Recorder.

[F7] = Press **[F7] PAL 625/25** to select PAL as the system standard.

[F8] = Press **[F8] 24 FPS** to set 24P as the system standard.

8.1.2 Color Framing Adjust

Color framing applies only to VTRs recording <u>composite</u> video directly to tape.

[F1] - Press **[F1] Off**: Color framing is not used.

[F2] - Press **[F2] 4-Field Warn**: The In-point is not adjusted if the CF is wrong, but there is a visual warning.

Example **1:02:18.13** ○

[F3] - Press **[F3] 4-Field**: 4-field correction of the In-points is made if the CF is wrong, and the recorder does 4-field color framing.

[F4] - Press **[F4] 8-Field Warn** (PAL only): 4-field correction of the In-points is made if the CF is wrong, 8-field display and 4-field color framing is done by the recorder.

[F5] - Press **[F5] 8-Field** (PAL only): 8-field correction of the In-points is made if the CF is wrong, and 8-field color framing is done by the recorder.

[F6] - Press **[F6] 8-F No Adjust**: 8-field color framing is done by the recorder, but no correction of the In-points is made if the CF is wrong (useful for audio editing).

8.1.3 Assemble Edit

This item enables and disables the Assemble recording mode.

An **insert** edit utilizes existing control track, timecode and black recorded onto a videotape. As insert edits are performed, they do not affect the control track or the timecode of the tape, and both IN and OUT-points of an edit are “clean”.

An **assemble** edit records new control track and timecode along with the audio and video. As assemble edits are performed, the IN-point will be clean, but the OUT-point may have broken control track for up to 10 frames.

[F1] - Press **[F1] Allow** to allow programming of Assemble edits. **{Ref: 6.5}**

[F2] - Press **[F2] Inhibit** to prohibit programming of Assemble edits. Only Insert edits are allowed.

[F5] PortTest: *For engineering use only*

[F6] MemoryCheck: *For engineering use only*

[F7] Simulation: *For engineering use only*

8.1.4 Video Switcher

This item selects the active M/E.

[F1] - Press **[F1] Off** to inhibit control of the video switcher.

[F2] - Press **[F2] DSK** to make the Down Stream Keyer the active M/E.

[F3] - Press **[F3] ME1** to make M/E 1 the active M/E.

[F4] - Press **[F4] ME2** to make M/E 2 the active M/E.

[F5] - Press **[F5] ME3** to make M/E 3 the active M/E.

[F7] - Press **[F6] Delay 1 Fr** to synchronize all players with a **1-frame advance** to compensate for a **1-frame** switcher delay.

[F8] - Press **[F8] No Key Control** to have the switcher not affect currently set keys.

8.1.5 Audio Mixer

[F1] - Press **[F1] Off** to inhibit control of the audio mixer.

For use with Yamaha O3D and O2R mixers.

[F2] - Press **[F2] 1 Channel** to assign 1 fader per crosspoint and 1 channel for the record VTR.

[F3] - Press **[F3] 2 Channel** to assign 2 faders per crosspoint and 2 channels for the record VTR.

[F4] - Press **[F4] 3 Channel** to assign 3 faders per crosspoint and 3 channels for the record VTR.

[F5] - Press **[F5] 4 Channel** to assign 4 faders per crosspoint and 4 channels for the record VTR.

[F6] - Press **[F6] 8 Channel** to assign 8 faders per crosspoint and 8 channels for the record VTR.

8.1.6 Monitor Switching

Refers to the switching mode when the recorder or the sources are selected during a preview. It is useful to have the recorder monitor controlled via a preview switcher to avoid repeated manual switching or connector changing each time a different recorder is assigned. Some video switchers have AUX buses that may be used as a preview switcher. The address of the (video) AUX bus is specified in the switcher driver. The default is **AUX 1**. The source assignment is entered in the **XPT** menu.

The PGM re-entry crosspoint is entered in the RouteDestVideo [F7] section of the XPT menu. This switching mode can also be selected for audio ([F6]) if an ESAM audio mixer is used.

[F1] - Press **[F1] V Monitor**

[F2] - Press **[F2] V PvwMonitor**

[F3] - Press **[F3] A Monitor**

[F4] - Press **[F4] A PvwMonitor**

[F5] - Press **[F5] MonDirect**

[F6] - Press **[F6] V External**

[F7] - Press **[F7] LiveSwitch**

[F8] - Press **[F8] A External**

8.1.7 Pre-roll Frames

Defines the pre-roll time for the edit. Enter the **<number of frames>,** then press **[ENTER]**. Press **[ESC]** to exit.

8.1.8 Post-roll Frames

Defines the post-roll time for the edit. Enter the **<number of frames>,** then press **[ENTER].** Press **[ESC]** to exit.

8.1.9 Sensitivity for Jog

This item is used to adjust the sensitivity of the Jog Knob for jogging. Enter a **<number>** between 50 and 500, then press **[ENTER]**. The lower the number entered, the lower number of frames move per revolution. Press **[ESC]** to exit.

8.1.10 Sensitivity for Variable & Shuttle

This item is used to adjust the sensitivity of the Jog Knob for variable and shuttle. Enter a **<number>** between 50 and 500, then press **[ENTER]**. The lower the number entered, the

lower the range per revolution. Press **[ESC]** to exit.

8.1.11 Reaction Time

The number entered here will be added or subtracted to the timecode placed in the EDL when using **Live-to-List** to switch real-time between sources. **{Ref: 8.1.26}**

The INIT Page Default Function Menu

[F1] - Press **[F1] Off** to turn the selected lower level item to OFF.

[F2] - Press **[F2] On** to turn the selected lower level item to ON.

[F3] - Press **[F3] User Select** to open the **USER** Directory to save the current configuration. {Ref: 8.3}

[F4] - Press **[F4] Color Set** to modify background, foreground, text, numeric, or highlight colors.

8.1.12 Warn beep

If selected, when a system error message is displayed a warning beep is generated in the CP.

8.1.13 No_Zeros

If selected, leading zeros for timecodes are suppressed in the **Marks Table**.

8.1.14 NoEDL Zeros

If selected, leading zeros for timecodes are suppressed in the **EDL**.

8.1.15 Keep, Master*

If selected, ganged sources remain ganged after an edit.

When not selected, Gang is turned off for all sources after an edit.

Although GANG has been turned off, the GANG relationships are still defined, and can be restored by pressing **[GANG]**.

8.1.16 Repeat_Failed

When selected, an aborted edit is attempted again up to two times.
When not selected, an aborted edit is not attempted again.

8.1.17 FixRecordOut

If selected, when recalling an edit from the EDL, the OUT times are entered as "hard" values, and the **recorder duration** determines the length of the edit.

When not selected, the **source durations** determine the length of a recalled edit.

8.1.18 CleanScreen

If selected, when recalling an edit from the EDL, all timecode entries in the Marks Table for sources not involved in the recalled edit are suppressed (removed).

8.1.19 SwapFromTo

When selected, after ending a transition edit, the FROM and TO sources are reversed in the transition dialog. If a CUT is selected after a transition edit, the TO VTR is selected.

8.1.20 KeepSlow

When selected, the last-used initial speed is maintained after an edit.

When not selected, the speed is turned off after an edit.

8.1.21 Synchro_Slow

If selected, when performing a vari-speed edit the system checks during the edit if the machines are still in sync, and resynchronizes if required.

8.1.22 StopOnComment

If selected, Auto Assembly of the EDL stops at every comment encountered in the EDL and continues after a confirmation.

When not selected, comments in the EDL are ignored when encountered during an Auto Assembly.

8.1.23 All_Still

If selected, a **STILL** command is sent to all VTRs when **[ALLSTOP]** is pressed.

When not selected, a **STOP** command is sent to all VTRs when **[ALLSTOP]** is pressed.

8.1.24 HoldLock

When selected, the system checks during an edit if the sources are in sync. Any error causes an automatic abort of the edit. If **RepeatFailed** is enabled, the edit is re-attempted up to two times.

The edit also aborts if the error rate of a Digital VTR is too high.

If not selected, an error will not cause the abort of an edit.

8.1.25 JogDirect

If selected, whenever the Jog Knob is turned, the selected VTR is immediately set to the JOG mode.

When not selected, you must press **[JOG]** to put the selected VTR in the JOG mode.

8.1.26 LivetoList

When selected, pressing [P1-P9] or [V]-[A1-A4] during an insert edit causes that source to be selected on the mixer and switcher, and for the segment to be entered into the EDL as a new edit.

To enter a Reaction Time that will compensate for a reaction delay in switching, see **Reaction Time. {Ref: 8.1.11}**

8.1.27 Hide EDL

When selected, the EDL display is suppressed. Edits continue to be added to the EDL. If you reach the maximum EDL size while the EDL display is suppressed, a warning message will be displayed.

If not selected, the EDL is displayed.

8.1.28 Frame Freeze - This feature is currently not implemented.

8.1.29 AllstopSafety

When selected, pressing **[ALLSTOP]** requires a confirmation with **[ENTER]** to stop VTRs.

If not selected, pressing **[ALLSTOP]** stops all VTRs.

8.1.30 SeekRecordReel

When selected, the Reel ID of the recorder is taken into account when recalling edits from the EDL. If the current recorder Reel ID does not match the Reel ID of the edit being recalled, the Recall command will be ignored.

If not selected, the Reel ID of the recorder is not taken into account when recalling edits from the EDL. Even if the current recorder Reel ID does not match the Reel ID of the edit being recalled, the edit is still recalled to the Marks Table, but the Reel ID remains untouched.

8.1.31 SwapRecordVTR

If selected, and if **SeekRecordReel** is also selected, the record Reel ID from the edit being recalled is automatically reassigned to the primary recorder if the Reel ID is available or entered in the Marks Table.

8.1.32 StillBeep

If selected, when using VAR and SHUTTLE, the Jog Knob has a dead zone at the zero point. This position is indicated by a short beep generated in the CP.

8.1.33 AutoTrack

When selected, after an edit is performed, the sources involved in that edit are automatically Tagged (Matched) whenever the recorder In-point is modified.

8.1.34 Match A/V

This item is interactive with Ref: 4.11.1}

8.1.35 Match Time

When selected, in addition to the Time Tag function, the system also checks if the current insert A/V components are identical with those used in the EDL edit.

8.1.36 To-Dblpress

When selected, a new TO source is only selected after two rapid and successive presses of the corresponding [P1-P9] key. For example, **[P2]+[P2]**.

When not selected, a new TO source is selected immediately after pressing the corresponding [P1-P9] key.

8.1.37 RogerBeep

When selected, all Time entries are confirmed by a beep generated in the CP.

8.1.38 AlwaysAddEdit

When selected, after ending an edit, the edit is always added to the end of the EDL.

When not selected, if you are not at the end of the EDL, the edit is not added to the EDL.

8.1.39 Profile Preroll

When a GVG Profile is used, this setting defines the pre-roll to be used for this device only.

8.2 User Files (Configuration Files)

User files enable the user to save all current INIT page and other system settings to a file on the system hard drive or on a 3.5” diskette, and recall them as needed. User files have the extension .MEM.

There is always an active User file when the LE-2000 is running. The active User file name is displayed in the **Current User:** field at the top of the INIT Page.

8.2.1 Loading a User File

1. Press **[SHIFT][INIT]** to open the INIT Page.

2. Press **[LOAD]** {CP4}. The File I/O page and I/O Function Menu are displayed.

3. Select a file from the displayed list. To move the **selection bar**, turn the jog knob, use the **[←]** and **[→]** arrow keys, or use the **[HOME], [PGUP], [PGDN]** and **[END]** functions in the numeric keypad to select and highlight the desired file.

4. Press **[ENTER]** to select the highlighted file. When the file is loaded, all INIT page and system settings saved in that file are immediately recalled.

   The system now displays the name of the loaded .MEM file in the **Current User:** field at the top of the INIT Page.

   Press **[ESC]** at any time to exit the File I/O page.

8.2.2 Saving a User File

1. Press **[SHIFT][INIT]** to open the INIT Page.

2. Press **[DUMP]** {CP4} to open the File I/O page.

3. Press **[F2] Save As** to save the currently active file under a different name. A text window is opened into which the new name is entered.

   Up to 24 characters can be entered as the User file name. Drive letters and directory paths can also be specified. Please observe the DOS convention for filenames {Ref: 15.2}.

4. Press **[ENTER]** to save the file and to return to the INIT page. All previous settings are still active.

   The system now displays the name of the saved .MEM file in the **Current User:** field at the top of the INIT Page.

   Press **[ESC]** at any time to exit the File I/O page.

The I/O Function Menu

[F1] - Press **[F1] FIND & HOME** to search for a specific file name. The cursor jumps to the name of the object starting with the letters entered. The jog knob and arrow keys are active again as soon as the cursor has jumped to the new position.

[F2] - Press **[F2] SAVE AS** to save the currently active file under a different name. A text window is opened, into which the new name is entered.

Drive letters and directory paths can also be specified. Please observe the DOS convention for filenames.

The “Saved As” new file becomes the active USER file, MACRO file or EDL file, and all the settings of Macros and EDL edits are still as they were before the save. The previously active file is a “snapshot” of the data in that file at the time the SAVE AS operation was done.

[F3] - Press **[F3] NEW** to open a new file. The new file becomes the active User file, Macro file, or EDL file.

The new INIT Page settings are set to factory default values, and these are immediately stored in the new User file.

The active Macros are still active, and are stored immediately in the new Macro file.

A NEW EDL file is empty, and fills with EDL data as the job proceeds.

[F4] - Press **[F4] COPY TO PATH** to copy the currently active file into the currently specified path. If this path already contains a file having the same name, a warning message is displayed.

[F5] - Press **[F5] BACK TO PATH** to return to the initial job directory.

[F6] - Press **[F6] NEW PATH** for direct access to a desired directory. If this directory does not yet exist, it is created and made available to the user.

[F7] - Press **[F7] NEW FILTER** to specify a new selection filter for the data files to be listed on this page. The specification must conform to the DOS convention for wildcards. {Ref: 15.3}

[F8] - Press **[F8] DELETE** to delete the selected file. For safety, a confirmation question must be answered before the file is deleted.

9. Slo-mo (Vari-Speed)

9.1 Programming Speeds

To program a speed for a VTR,

1. Press **[P1-P9]** to select the VTR to assign a speed other than Play.

2. Press **[SPEED]** {CP3}. The **SPEED Function Menu** opens.

3. Using the CP numeric keypad, type the desired starting **<speed>** for this source and press **[ENTER]**. Speeds are entered as a percentage of Play speed, with Play speed being 100%. The speed % is displayed in the Mode column of the selected VTR.

   At the end of the edit, the programmed speed will either remain active or will be turned off, depending on the status of the **INIT Page** setting **KeepSlow**. **{Ref: 8.1.20}**

   To manually enter Programmed Play speeds at 1/10 % increments, see **[F6] USE TSO** below.

   With the item **KeepSlow selected**, the last used initial speed is maintained after an edit.
   With the item **KeepSlow <u>not</u> selected**, the speed is turned off after an edit.

<u>The SPEED Function Menu</u>

[F1] - Press **[F1] PLAY 100%** to clear the currently programmed speed for this VTR.

[F2] - Press **[F2] FILL** to calculate the speed that the selected source VTR must achieve in order for its entire event to fit within the current In- and Out-points of the Record VTR.

1. Enter durations for both the Recorder and the current source VTR.

2. Select the current source VTR.

3. Press **[F2] FILL**.

   With **[F6] USE TSO** <u>not</u> selected, the speed is calculated and entered to the nearest 1% increments, and displayed in the Mode column of the selected source VTR.

   With **[F6] USE TSO** <u>selected</u>, the speed is calculated and entered to the nearest 1/10% increments, and displayed in the Mode column of the selected source VTR.

   With **USE TSO** selected, the editor issues Program Play commands from **+/- 16% of** play speed, regardless of the VTRs ability to recognize the commands. However, if a Program Play speed is entered that exceeds **+/- 16%,** you will be prompted with: **Exceeds TSO Range.**

[F3] - Press **[F3] CUE1** to enable recording on audio CUE channel 1. **{Ref: 6.4.1}**

[F4] - Press **[F4] CUE2** to enable recording on audio CUE channel 2. **{Ref: 6.4.1}**

[F5] - Press **[F5] MORE SPEEDS - Temporarily not available.**

[F6] - Press **[F6] USE TSO** to enable sending a Program Play command to this VTR (VTR dependent). When selected, the TSO command turns **ON** the Program Play feature of the VTR, and will send the currently calculated FILL speed to the VTR to be used by the Program Play card of the VTR for pitch correction.

To manually enter a Programmed Play speed (tenth %),

1. **Select** the source to be affected by the speed change.

2. Press **[SPEED]** to open the **SPEED Function Menu**

3. Press **[F6] USE TSO** to enable TSO (Tape Speed Override).

4. Using the numeric keypad, type the whole number part of the desired speed percentage, then press **[.]** ([00]) to enter a decimal point, followed by **[1]-[9]** to specify the tenth value.

   With **USE TSO** selected, the editor issues Program Play commands from **+/- 16% of** play speed, regardless of the VTRs ability to recognize the commands. However, if a Program Play speed is entered that exceeds **+/- 16%,** you will be prompted with: **Exceeds TSO Range.**

Note 1*: A selected speed can only be executed if the corresponding VTR is capable of performing it.*

Note 2: *The SPEED Function Menu can also be accessed by pressing* ***[SHIFT][MODE]*** *{CP6}.*

[F7] - Press **[F7] AUTO PREREAD** to enable the pre-read feature (read-before-write) for the record VTR (VTR dependent). **{Ref: 6.8}**

Some digital VTRs have a PRE-READ function, also called “read-before-write”, which permits the recorder to be used as a source during an edit.

With **[F7] AUTO PREREAD** selected**,** whenever the REC VTR is defined as part of a transition, pre-read is turned ON in the VTR. Press **[PRERD]** {CP6} to enable this function manually.

When activated, the letter **P** appears in the Mode column alongside the A/V components.

An edit can now be defined that includes the primary recorder as a source. For example,

DISSOLVE from **REC** to **P1**.

Note 1*: Pre-read is only applied to the R-VTR.*

Note 2: *The record VTR must be pre-read capable.*

10. GPIs (General Purpose Interface)

GPIs (General Purpose Interface) are contacts which can activate external devices or processes at pre-determined times.

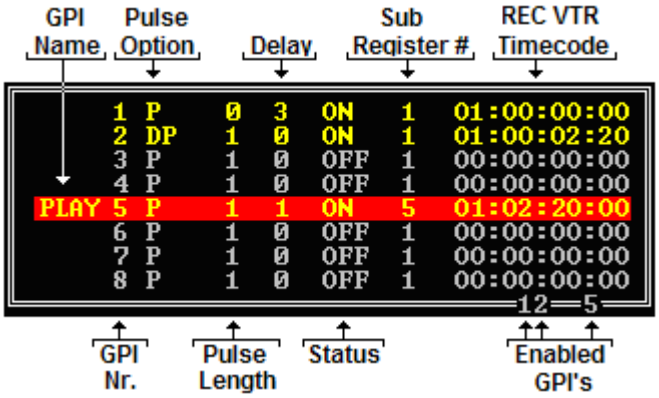
There are eight (8) standard GPI outputs. Each GPI output can be programmed to trigger up to forty times in each edit.

There are also three (3) GPI inputs to the system, each of which activates a Macro when short-circuited to ground.

GPI's are always referenced to the REC VTR.

10.1 Setting a GPI

1. Press **[GPI]** {CP3} to open the GPI dialog and the GPI Function Menu.



2. Press **[F2] Select Nr.** and then press a digit **1-8** on the numeric keypad to select the GPI to modify.

3. **Position** the REC VTR at the point you wish to trigger the GPI.

4. Press **[REC]** to enter the current REC position into the GPI timecode register.

The GPI Function Menu

[F1] - Press **[F1] Fire Now** to manually and immediately test-trigger the selected GPI.

[F2] - Press **[F2] Select Nr.** followed by **[1-8]** to move the selector highlight to the respective GPI. This can also be achieved by holding down **[SHIFT]** and jogging.

[F3] - Press **[F3] On / Off** to enable or disable the highlighted GPI.

[F4] - Press **[F4] AutoIncrement** to enable entering additional trigger times on-the-fly for a rolling record VTRs. If **[REC]** is pressed more than once, the next trigger mark is set into the next available sub-register (1-40), and the sub-register number is automatically incremented.
{Ref: 10.2}

The following settings can be set separately for each individual GPI contact, and are stored in the User file:

F5] - Press **[F5] Name** to assign a name for a GPI. Up to 4 alphanumeric characters can be entered. Confirm the entry with **[ENTER]** or abort the entry with **[ESC]**.

[F6] - Press **[F6] Type** to sequence through the eight different Pulse options for the current GPI.

To activated the GPI contact upon <u>closure</u>,

- **P** for pulse. The current GPI is triggered upon closure with the selected pulse duration.
- **PP** for pulse and reset. The GPI is reactivated upon closure when the edit is repeated in order to reset the connected unit to its initial state.
- **D** for duration. The contact is triggered upon closure and remains open until the end of the edit.
- **DP** for a combination of the duration and the reset pulse.

To activated the GPI contact upon <u>opening</u>,

- **P**_ for pulse. The current GPI is triggered upon opening with the selected pulse duration.
- **PP**_ for pulse and reset. The GPI is reactivated upon opening when the edit is repeated in order to reset the connected unit to its initial state.
- **D**_ for duration. The contact is triggered upon opening, and remains open until the end of the edit.
- **DP**_ for a combination of the duration and the reset pulse.

[F7] - Press **[F7] Length** to change the length of the pulse duration. The length is entered in frames.

F8] - Press **[F8] Delay** to delay or advance the point in which the trigger command is sent for this GPI. Positive values advance the trigger and negative values delay the trigger by the specified number of frames.

All time entries can be trimmed. **{Ref: 4.4}**

10.2 GPI Sub-Registers

Each GPI output can be programmed to trigger up to forty times in each edit.

With the GPI Dialog **open**, press **[←]** and **[➔]** to display the previous or next sub-register for the current GPI. In the example above, the GPI named PLAY is currently on sub-register 5.

During an edit or preview, press **[GPI]** to open the GPI dialog and see the programmed GPIs displayed. During this time, GPI sub-registers display at their corresponding time.

10.3 GPI inputs

There are three GPI inputs that can be used to activate ***individually*** programmed Macro keys 1, 2 and 3 on the numeric keypad.

Macro key **1** is pressed when GPI input **1** is short-circuited to ground.
Macro key **2** is pressed when GPI input **2** is short-circuited to ground.
Macro key **3** is pressed when GPI input **3** is short-circuited to ground.

Note: *The string: "GPI_IN" must be in the OPTIONS list in the LIFT.INI file.*

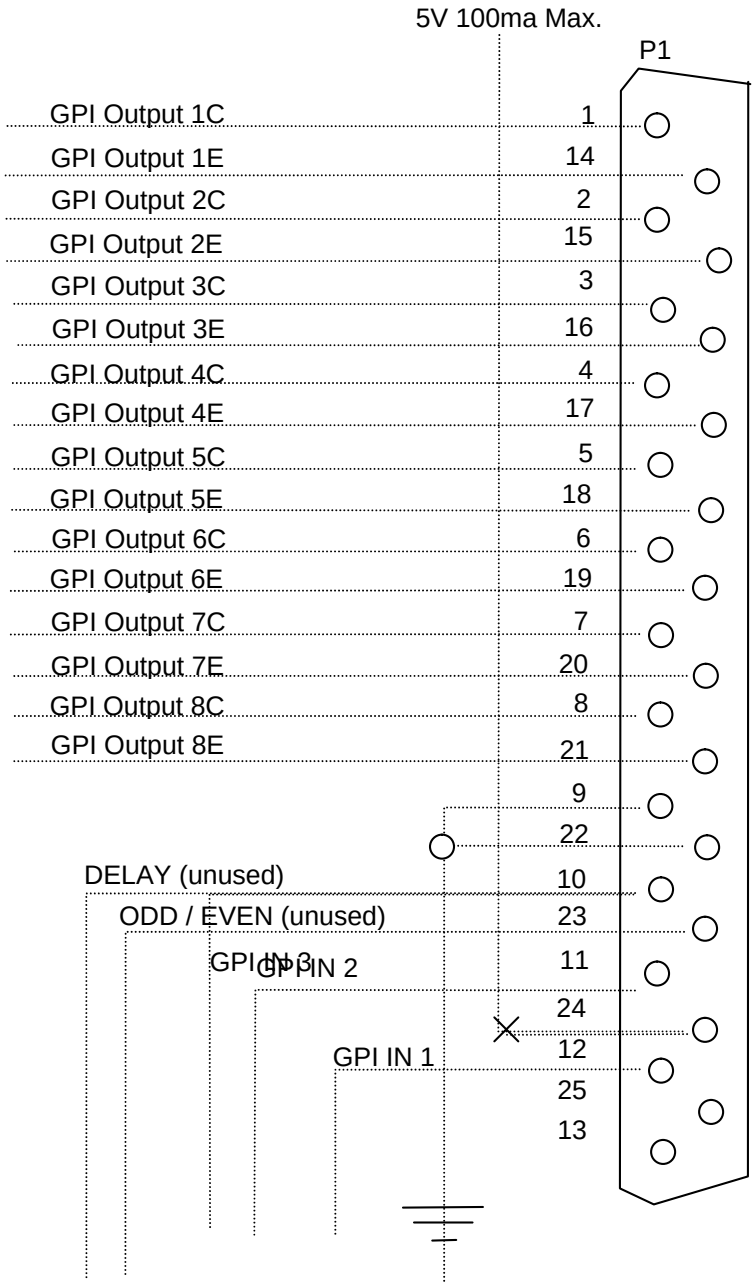
10.4 GPI Connector and Pin-outs

The **GPI output connectors** are opto-isolated transistors. The maximum voltage applied to each output is +35VDC with a current rating of 50mA. There are eight outputs with two common (ground) connections.

An open collector is used to close the GPI contacts. The pull-up resistor has an impedance of 2k_ at 5 volts. The de-bounce time is 1 frame. The **GPI input connectors** are activated when pulled to ground.

5VDC is available on pin 24 (100MA maximum).

GPI OUTPUT	**COLLECTOR PIN #**	**EMITTER PIN #**
1	1	14
2	2	15
3	3	16
4	4	17
5	5	18
6	6	19
7	7	20
8	8	21
GPI INPUT		
1	13	
2	12	
3	11	
GROUND	9, 22	
5V SOURCE	24	100MA Max.


5V 100ma Max.
P1
GPI Output 1C
1
GPI Output 1E
14
GPI Output 2C
2
GPI Output 2E
15
GPI Output 3C
3
GPI Output 3E
16
GPI Output 4C
4
GPI Output 4E
17
GPI Output 5C
5
GPI Output 5E
18
GPI Output 6C
6
GPI Output 6E
19
GPI Output 7C
7
GPI Output 7E
20
GPI Output 8C
8
GPI Output 8E
21
9
22
DELAY (unused)
10
ODD / EVEN (unused)
23
GPI IN 3
GPI IN 2
11
24
GPI IN 1
12
25
13

11. EDL – Edit Decision List

The Edit Decision List (EDL) is a record or history of the edits that have been performed for a specific job.

The LE-2000 can manage up to 9,999 lines in one EDL.

If the EDL is positioned at its END marker, **NEXT EDIT # nnnn** is displayed at the top, left of the edit screen to show you the number of the next edit to be performed. **{Ref: 6.9}**

If the EDL is positioned anywhere other than at its END marker, **THIS EDIT # nnnn** is displayed at the top, left of the edit screen, showing you the number of the edit currently selected in the EDL.

The EDL is always sorted in the order in which the edits were performed.

Note: *The* ***INIT Page*** *item* ***AlwaysAddEdit*** *determines if an edit shall always be added to the EDL, or added only if you are physically positioned at the end of the EDL.* **{Ref: 8.1.38}**

11.1 Moving Through the EDL

In the EDL, one line is always highlighted in **yellow**. This line is the **current EDL line**.

- To scroll through the EDL, press and hold **[SHIFT]** while turning the **Jog Knob**.
- To step back or forward in the EDL one line at a time, press **[SHIFT][←]** and **[SHIFT][→]** {CP10}.

Press **[LIST]** {CP3} to open the List Function menu.

With the LIST Function Menu open,

- Press **[CLEAR]** to delete the current or highlighted edit from the EDL.
- Press [←] and [→] arrow keys in the **numeric keypad** {CP4} to step through the EDL one line at a time. No EDL edits will be recalled.
- Press **[7]** (TOP) in the **numeric keypad** to jump to the top of the EDL.
- Press **[1]** (BOT) in the **numeric keypad** to jump to the bottom of the EDL.
- Press **[9]** (PGUP) in the **numeric keypad** to move up page by page in the EDL. A page is the displayed portion of EDL.
- Press **[3]** (PGDN) in the **numeric keypad** to move down page by page in the EDL. A page is the displayed portion of EDL.
- **Turn the Jog Knob** to scroll through the EDL. With the LIST Function Menu open, you need not press [SHIFT].

The LIST Function Menu

[F1] - Press **[F1] Recall** to recall the currently selected edit in the EDL to the Marks Table. The EDIT# field will display

THIS EDIT # nnnn

If an edit is recalled containing Reel IDs that are not currently assigned, the system prompts you to assign these reels.

Missing Reel: nnn

Press the corresponding **[REC] – [P1-P9]** or **[AUXn]** source key to automatically assign the reel specified. When all missing Reel IDs are entered, the edit is loaded into the Marks Table.

Note: *The **[BS]** (Backward Step) and **[FS]** (Forward Step) functions {CP4} load the previous or the next edit from the list, respectively.* **{Ref: 11.3.2}**

[F2] - Press **[F2] Insert** to insert the current event from the Marks Table into the EDL immediately **preceding** the current edit. The EDL is renumbered from this position to the end of the EDL. If the LIST Function Menu item **[F4] Ripple** is enabled, the Record times in the EDL are rippled accordingly. **{Ref: 11.5}**

Press **[UNDO]** to restore the previous state of the EDL.

[F3] - Press **[F3] Block** to open the BLOCK Function sub-Menu.

The BLOCK Function sub-Menu

A BLOCK is a range or group of edits in the EDL defined by pressing **[F3] Begin** and **[F4] End** in the BLOCK Function sub-Menu. Once the beginning and end of a BLOCK have been defined, the range is highlighted in the EDL and one of the following functions can be applied to this BLOCK:

[F1] - Press **[F1] Paste at End** to move the marked BLOCK to the end of the current EDL. The BLOCK is also saved in the buffer.

- The edit numbers in the EDL are not renumbered.
- Following edits are not rippled.

[F2] - Press **[F2] Insert** to insert the contents of the buffer immediately preceding the current EDL edit. Edits are placed in the buffer when using the **[F1]Move**, **[F6]Cut** and **[F7]Copy** functions.

- The edit numbers in the EDL are not renumbered.
- Following edits are not rippled.

Note: *After performing a BLOCK cut or copy, press **[F3] BLOCK** to re-open the BLOCK Function sub-Menu before pressing **[F2] INSERT** to Insert the BLOCK contents.*

[F3] - Press **[F3] Begin** to define the current EDL line as the **beginning** of a BLOCK.

[F4] - Press **[F4] End** to define the current EDL line as the **end** of a BLOCK. The defined BLOCK is highlighted.

[F5] - Press **[F5] Delete** to delete the BLOCK of edits from the EDL. You are prompted with:

Delete Block? <ENTER>

Press **[ENTER]** to delete the BLOCK of edits. Following edits are not rippled.

[F6] - Press **[F6] Cut** to delete the BLOCK of edits and to copy the BLOCK into the buffer.

[F7] - Press **[F7] Copy** to copy the BLOCK into a buffer without deleting the BLOCK. The edits remain buffered even if the EDL is changed.

[F8] - Press **[F8] Print** to print the marked block of edits.

The LIST Function Menu (continued)

[F4] - Press **[F4] Ripple** to enable or disable the RIPPLE function during an operation that adds, deletes or changes an edit within the EDL {Ref: 11.5}. When RIPPLE is enabled, EDL continuity is maintained in the following ways:

- If an Event is Inserted (added) to the EDL, the In-points of all following Record edits in the EDL are increased by the duration of the inserted event.
- If an Edit is Deleted (removed) from the EDL, the In-points of all following Record edits in the EDL are decreased by the duration of the deleted edit.

These changes are taken into consideration through the end of the EDL.

If a **BLOCK** is marked, and an edit within the BLOCK is modified, RIPPLE will only modify the times within this BLOCK.

If RIPPLE is disabled, subsequent recorder times remain unchanged after an edit is inserted or deleted.

[F5] - Press **[F5] Replace** to replace the current edit in the EDL with the edit currently programmed in the Marks Table. When an EDL edit is replaced, following edits are affected by the status of **[F4] RIPPLE**.

- If **[F4] RIPPLE** is selected, the record times of all following edits are rippled accordingly.
- If **[F4] RIPPLE** is not selected, the EDL remains as-is except for the replaced edit.

Press **[UNDO]** to restore the previous condition of the EDL.

[F6] - Press **[F6] R-Status** to toggle the Record status of the current EDL edit.

- When an edit has been added to the EDL after an edit has been performed, it is displayed in the EDL with a background highlight. Press **[F6] R-Status** to remove the background highlight from this edit.
- When an edit has been added to the EDL as a dummy edit by pressing [ADD], it is displayed in the EDL without a background highlight. Press **[F6] R-Status** to add the background highlight to this edit.

The R-Status of an EDL edit determines if it will be recorded during an Auto-Assembly.

If the R-Status of an edit shows that it has been recorded, and if **[F1] Skip Recorded** is enabled in the **JOB Function Menu** the edit will not be auto-assembled.

[F7] - Press **[F7] Renumber -** This item has two functions; EDL Renumbering and Ripple.

To Renumber the EDL:

1. With the LIST Function Menu open, press **[F7] Renumber** to open the Renumber text entry field. You are prompted:

   Start numbering from 0010

2. **<Type a number>** with which to begin renumbering the EDL, or use the default entry.

3. Press **[ENTER]** to accept the number.

The EDL is renumbered from the selected edit to the end of the EDL.

Press **[SHIFT][UNDO]** {CP3} to restore the previous condition of the EDL.

To Ripple the EDL:

*See **Ripple Edits** for information on EDL Ripple.* **{Ref: 11.5}**

[F8] - Press **[F8] PRINT** to print the EDL from the current edit to the end.

11.2 Dummy Edits (Add Edits to the EDL)

An edit is added to the end of the EDL after a recording is executed. It is marked with a **highlight** to let you know that it has been recorded to tape.

You can also add edits to the EDL without recording them to tape. This is called a "dummy edit', and is accomplished by setting up the edit in the usual way and pressing **[ADD]** {CP1}. This edit must have a duration.

If the **INIT Page** item **AlwaysAddEdit** is not enabled, the EDL must be positioned at its **END** in order for a performed edit to be added to the EDL.

If the **INIT Page** item **AlwaysAddEdit** is enabled, the edit is added at the end of the EDL regardless of where the EDL is currently positioned.

Edits are not added to the EDL if …

- Either insert or assemble mode is not selected.
- A source is not defined which is not assigned as a Slave.
- No VTR is assigned as a Recorder.

11.3 Recall an Edit from the EDL

11.3.1 Recall a specific edit from the EDL

1. Press **[SHIFT][RECALL]** {CP4}. In the EDIT # area of the Edit Screen you are prompted:

   Recall Event <current EDL edit number>.

   Accept this number or enter a new EDL edit number.

2. Press **[ENTER]**. The specified EDL edit is recalled to the Marks Table.

- If INIT Page item **FixRecordOut** is selected, when recalling an edit from the EDL, the OUT times are entered as "hard" values {Ref: 4.1}, and the **recorder duration** determines the length of the edit.

  With this item not selected, the **source durations** determine the length of a recalled edit.

- If INIT Page item **CleanScreen** is selected, when recalling an edit from the EDL, all timecode entries in the Marks Table for sources not involved in the recalled edit are suppressed (removed).

  With this item not selected, all timecode entries in the Marks Table for sources not involved in the recalled edit are left as is.

- If INIT Page item **SeekRecordReel** is selected, the Reel ID of the recorder is taken into account when recalling edits from the EDL. If the current recorder Reel ID does not match the Reel ID of the edit being recalled, the Recall command will be ignored.

  With this item not selected, the Reel ID of the recorder is not taken into account when recalling edits from the EDL. Even if the current recorder Reel ID does not match the Reel ID of the edit being recalled, the edit is still recalled to the Marks Table, but the RE Reel ID remains untouched.

11.3.2 Recall previous or next edit from the EDL

Press **[SHIFT][BS]** (**B**ack **S**tep) to load into the Marks Table the edit previous to the selected edit in the EDL.

Press **[SHIFT][FS]** (**F**orward **S**tep) {CP4} to load into the Marks Table the edit below the selected edit in the EDL.

11.4 Delete Edit(s) From The EDL

11.4.1 Delete a single edit from the EDL

To delete the currently highlighted edit from the EDL,

1. Press **[LIST]**. The List Function Menu opens.
2. Press **[CLEAR]** {CP3}. You are prompted:

   Delete highlighted from List? <ENTER>

3. Press **[ENTER]**. The currently highlighted edit in the EDL is deleted.

- If the **LIST Function Menu** item **[F4] Ripple** is enabled, following edits in the EDL will be adjusted accordingly. **{Ref: 11.5}**
- If the **LIST Function Menu** item **[F4] Ripple** is not enabled, following edits in the EDL will be left as they were.

11.4.2 Delete a Block of edits from the EDL

1. Press **[LIST]**. The List Function Menu opens.
2. Press **[F3] Block**. The Block Function Menu opens.
3. Press **[F5] Delete** to delete a BLOCK of edits from the EDL. You are prompted with:

   Delete Block? <ENTER>

4. Press **[ENTER]** to delete the BLOCK of edits. Following edits are not rippled.

11.4.3 Delete all edits from the EDL

1. Press **[JOB]** {CP3}. The JOB Function Menu opens. **{Ref: 11.10}**
2. Press **[F4] Clear EDL** to clear all data from the current EDL {Ref: 11.1}.

- The EDL is renamed with the default name; **NONAME.EDL**
- Press **[LIST]** then **[SHIFT][UNDO]** to restore the deleted data to the EDL.

11.5 Ripple Edit (s) In The EDL

To Ripple an EDL is to modify the EDL to reflect the change, insertion or removal of an edit, or group of edits, from the EDL.

When RIPPLE is enabled, EDL continuity is maintained in the following ways:

- If an Edit is **Inserted** (added) to the EDL, the In-points of all following Record edits in the EDL are increased by the duration of the inserted edit.
- If an Edit is **Deleted** (removed) from the EDL, the In-points of all following Record edits in the EDL are decreased by the duration of the deleted edit.

These changes are taken into consideration through to the end of the EDL.

If a **BLOCK** is marked, and an edit within the BLOCK is modified, RIPPLE will only modify the times within this BLOCK.

If RIPPLE is disabled, subsequent recorder times remain unchanged after an edit is inserted or deleted.

11.5.1 Renumber the EDL

1. Press **[LIST]** to open the LIST Function Menu.
2. Press **[F7] Renumber** to open the Renumber text entry field. You are prompted:

   Start numbering from 0010

3. **<Type a number>** with which to begin renumbering the EDL, or use the default entry.
4. Press **[ENTER]** to accept the number.

The EDL is renumbered from the selected edit to the end.

Press **[UNDO]** {CP3} to restore the previous condition of the EDL.

11.5.2 Ripple selected Source times in the EDL

1. Select the **[P1]-[P9]** source whose EDL times are to be rippled.

2. Type an absolute **<time>** into the **Keyboard Register** or enter a **<trim value>** into the **Trim Register.**

3. Press **[LIST]** to open the LIST Function Menu.

4. Enable (turn On) **[F4] Ripple**.

5. Press **[F7] Renumber**. The entered <time> or <trim value> is used to ripple (modify) the EDL times of the corresponding VTR from the selected edit through the end of the EDL.

Press **[UNDO]** to restore the previous condition of the EDL.

11.5.3 Ripple selected Recorder times in the EDL

1. Select the **[REC]** source whose EDL times are to be rippled.

2. Type an absolute **<time>** into the **Keyboard Register** or enter a **<trim value>** into the **Trim Register.**

3. Press **[LIST]** to open the LIST Function Menu.

4. Enable (turn On) **[F4] Ripple**.

5. Press **[F7] Renumber**. The entered <time> or <trim value> is used to ripple (modify) the EDL times of the Record VTR from the selected edit through the end of the EDL.

Press **[UNDO]** to restore the previous condition of the EDL.

11.5.4 Ripple all Source times in the EDL

1. Select **[BLACK]**.

2. Type an absolute **<time>** into the **Keyboard Register** or enter a **<trim value>** into the **Trim Register.**

3. Press **[LIST]** to open the LIST Function Menu.

4. Enable (turn On) **[F4] Ripple**.

5. Press **[F7] Renumber**. The entered <trim value> is used to ripple (modify) the EDL times for all Sources in the EDL from the selected edit through the end of the EDL.

Press **[UNDO]** to restore the previous condition of the EDL.

11.6 EDL Undo (Cancel Changes to the EDL)

- To undo changes made to the **EDL**, press **[LIST]** then **[SHIFT][UNDO]**.
- To undo changes made in the **BLOCK Function sub-Menu**, press **[LIST], [F3]BLOCK, [SHIFT][UNDO]**.

Note that for this function there is only one UNDO register.

11.7 EDL Search Functions

You can search for a specific timecode in the EDL, cue a VTR to a timecode selected from an edit in the EDL, or find edits in the EDL with specific Reel IDs.

11.7.1 Search to a Timecode Number from the EDL

Press **[SRCH]** {CP1} to cue the current VTR to the In-point of the current edit line in the EDL.

If the recorder is selected, the VTR cues to the timecode displayed in the **third field** (record In) of the current edit line in the EDL.

If a source VTR is selected, the VTR cues to the timecode displayed in the **first field** (source In) of the current edit line in the EDL.

11.7.2 Search the EDL for a Timecode Number

Press **[LST-SRC]** {CP1} to search the EDL for the latest edit containing the current VTRs In-point. Successive presses search the EDL for earlier edits containing the same timecode number.

11.7.3 Search the EDL for a Reel ID

1. Select the desired source **[P1]-[P9]**.
2. Press **[LIST]** to open the LIST Function Menu.
3. Press **[F1] List Search** to find the latest edit in the EDL containing the same Reel ID as the selected source. Continue to press **[F1]** to locate earlier edits with this same Reed ID.

11.8 Notes (Add Notes to the EDL)

A comment or note can be added and edited for every edit in the EDL.

1. Press **[NOTE]** {CP4} to open the comment line in the EDL.
2. Type your note using the alpha characters engraved on the front side of the CP keys or, if connected, a PS2 computer keyboard. Each NOTE entry can contain up to 77 characters.
3. Press **[ENTER]** to confirm the entry. Press **[ESC]** to exit from NOTE entry.

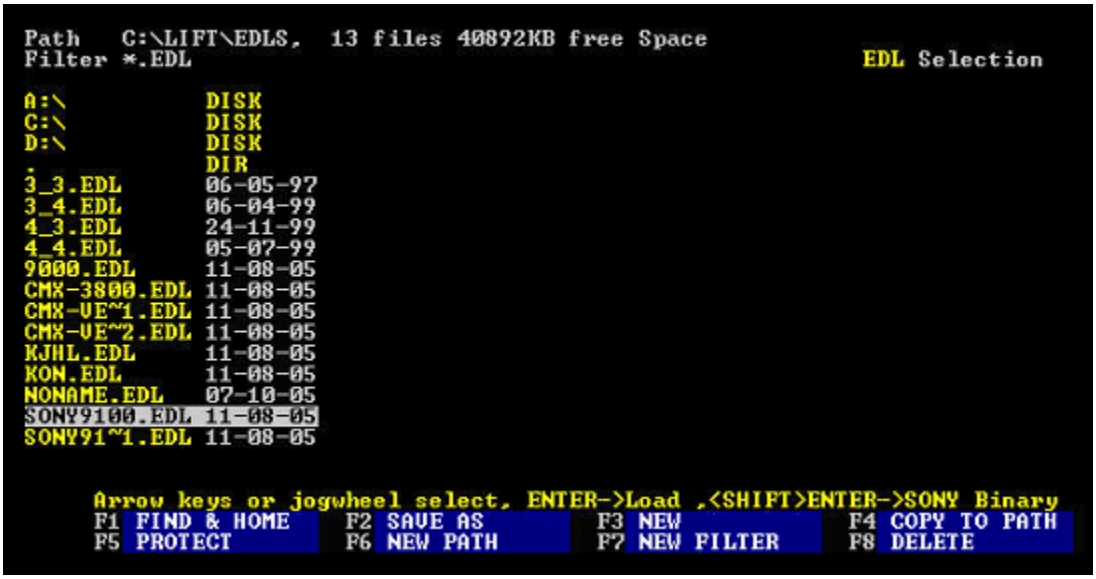
11.9 Save & Load EDL Files

EDL files enable the user to save the active EDL to a file on the system hard drive or to a 3.5" diskette, and load (recall) the saved EDL file as needed. EDL files have the extension **.EDL**.

There is always an active EDL file when the LE-2000 is running. The active file name is at the top of the LE-2000 screen when in the normal editing mode. For more detailed information on the I/O menu, see chapter 15.

11.9.1 Loading an EDL File

1. Press **[LOAD]** {CP4} to open the File I/O page and the File I/O Function Menu.



2. Select a file from the displayed list. To move the **selection bar**, turn the jog knob, use the **[←]** and **[→]** arrow keys, or use the **[HOME], [PGUP], [PGDN]** and [**END]** functions in the numeric keypad to select the desired file.

3. Press **[ENTER]** to select the highlighted file name. When the file is loaded the active EDL is replaced with the EDL in the selected file. The file name is now the name of the current EDL, and it is displayed in the **Job** field of the Edit Screen.

11.9.2 Save and Continue Working with Same EDL

1. Press **[DUMP]** {CP4} to open the File I/O page and the File I/O Function Menu.

2. Press **[F2] SAVE AS** to save the currently active EDL file under a different name. A text window is opened into which the new name is entered.

   Save As _

A file name of up to 8 characters can be entered. Drive letters and directory paths can also be specified. Please observe the DOS convention for filenames. **{Ref: 15.2}**

3. Press **[ENTER]** to save the file. The active EDL is unchanged. The active EDL file is the new EDL file with all data exactly the same as it was before the SAVE AS operation.

Press **[ESC]** at any time to exit the File I/O page.

11.9.3 Create a New EDL

1. Press **[DUMP]** {CP4} to open the File I/O page and the File I/O Function Menu.

2. Press **[F3] NEW** to create a new active EDL file, and return to editing with the new EDL. The previously active EDL is saved automatically under its original name. A text window is opened, into which the new name is entered.

   New File _

A file name of up to 8 characters can be entered. Drive letters and directory paths can also be specified. Please observe the DOS convention for filenames.

3. Press **[ENTER]** to save the file. The active EDL is empty, and the **NEXT EDIT#** is set to 0001. Press **[ESC]** at any time to exit the File I/O page.

11.10 The JOB Function Menu

Press **[JOB]** to access additional EDL related functions.

The JOB Function Menu

[F1] - Press **[F1] Skip Recorded** to only record edits from the EDL that are not highlighted.

[F2] - Press **[F2] Skip Missing** to only record edits from the EDL that have the same Reel names currently loaded on an active VTR.

[F3] - Press **[F3] Timestart** to enter the **<time>** from the Keyboard Register to be used as the beginning of the current show. This time is subtracted from the latest time recorded in the current EDL, to give the current total show time. This calculated show time is displayed in the **Job Dur** field at the top, center of the edit screen.

[F4] - Press **[F4] Clear EDL** to close the current EDL file. This also loads the file **"NONAME.EDL"** and sets the **NEXT EDIT#** to 0001. **{Ref: 11.4.3}**

[F5] - Press **[F5] Clear Marks** to clear R-Status highlights from all edits in the current EDL.

[F6] - Press **[F6] EDL Analyze** to display a list of Reels that were used in the current EDL.

[F8] - Press **[F8] Exit to DOS** to exit from the edit application to DOS.

11.11 Hide the EDL

When this INIT Page item is selected, the EDL display is suppressed. Edits continue to be added to the EDL. If you reach the maximum EDL size while the EDL display is suppressed, a warning message will be displayed.

If not selected, the EDL is displayed.

11.12 Importing EDLs

The system identifies the format of an EDL as soon as a valid list is loaded. Once loaded, the system continues to use this format even if new edits are created and added to the EDL.

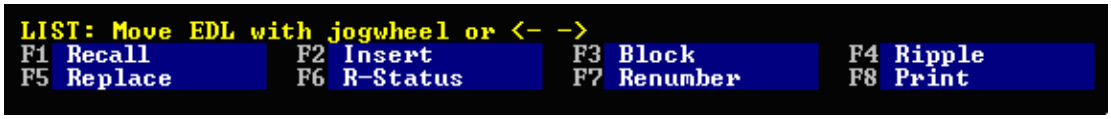
12. Auto-Assemble

To Auto-Assemble an EDL, is to automatically perform (record) a range of enabled edits in the current EDL. This is not to be confused with the Assemble mode during recording.

12.1 BLOCK sub-Menu Settings for Auto Assembly

Prior to auto-assembling an EDL, there are several optional settings that affect which edits are enabled for the auto-assembly.

Press **[LIST]** {CP3} to open the **LIST Function Menu**.



[F3] – Press **[F3] Block** to select a block (selected range) of edits to be auto assembled.

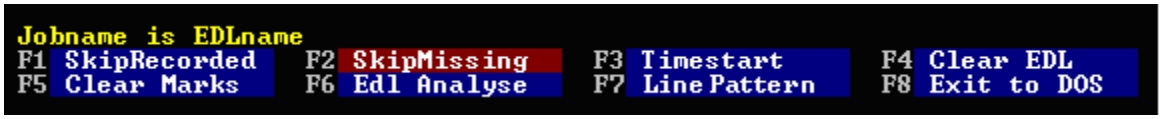
[F4] – Press **[F4] Ripple** to ripple the current EDL if you wish the record In-times to reflect a different timecode on the record videotape**. {Ref: 11.5}**

[F6] – Press **[F6] R-Status** to highlight or de-select a highlighted edit in the EDL.

[F7] – Press **[F7] Renumber** to renumber the EDL.

12.2 JOB Function Menu Settings for Auto Assembly

Press **[JOB]** {CP3} to open the **JOB Function Menu**.



[F1] - Press **[F1] Skip Recorded** to only record edits from the EDL that are not highlighted.

[F2] - Press **[F2] Skip Missing** to only record edits from the EDL that have the same Reel names currently loaded on an active VTR.

[F5] - Press **[F5] Clear Marks** to clear Auto Assemble **-** R-Status highlights from all edits in the

[F7] - Press **[F7] Line Pattern** if the line format of an EDL being input is not correct. This function will direct the system to determine the location of spaces and data positions of each line item on the first line of the EDL, and follow this pattern when creating new edits.

12.3 INIT Page Settings for Auto Assembly

Press **[INIT]** to open the INIT Page and INIT Function Menu.

The **INIT Page** item **StopOnComment** directly affects an auto-assembly.

With this item selected, Auto Assembly of the EDL stops at every comment encountered in the EDL and continues after a confirmation.

When not selected, comments in the EDL are ignored when encountered during an Auto Assembly.

12.4 Performing the Auto Assembly

To Auto Assemble all or part of the current EDL, park the EDL on the edit you wish to start the auto-assembly, and:

1. Press **[ASSY]** {CP1} to define the range of edits to be Auto Assembled. The following prompt appears:

   with the **from** edit being the current edit.

2. Press **[ENTER]** to confirm and begin.

13. Macros

- A MACRO is a sequence of keystrokes programmed by the user which may be assigned to a single keystroke on the Control Panel.
- A Macro can be assigned to each of the 71 keys on the Control Panel. Additionally, a Macro can be assigned to each of the 71 shifted keys on the Control Panel, so that a total of 142 Macro keys are available.
- Each Macro can be stored on the system hard disk or on a floppy disk as a uniquely named file. When a Macro file is saved, it saves the contents of all 142 Macro keys.
- Each Macro file can be given a descriptive name for identification. When using Macros assigned to the F1-F8 keys, the Macro names are displayed in the Macro Function Menu accessed by pressing [MACRO] {CP3}.
- Macros can be "**looped**", with a Macro calling itself. The continued execution of this loop is terminated by pressing [ALLSTOP].
- Macros can be "**nested**", with one Macro containing a call to another Macro.
- If a **RECORD** command is part of a Macro, the Macro pauses until the edit is completed, and then continues.

13.1 Programming a Macro

There are two methods of programming a Macro:

- Either by recording the keystrokes while executing the functions

  OR

- By recording the keystrokes without executing the functions.

Press **[SHIFT][EDIT]** to program a Macro. The Macro Edit dialog and **MACRO Function Menu** open.

The MACRO Function Menu

[F1] - Press **[F1] Select Key** to select the key to which you will assign this Macro. You are prompted:

Press the Key.

Press the **<key>** to which you will assign this Macro.

[F2] - Press **[F2] Record** to begin recording a Macro as the keystrokes are performed. Press the **<keystrokes>** that make up this Macro. When finished, press **[SHIFT][EDIT]** again to end the recording of the keystrokes.

[F3] - Press **[F3] Edit Macro** to edit the current Macro or to record a Macro without executing it. In this mode you can edit an existing Macro keystroke by positioning the cursor on the keystroke using the Jog Knob. This mode also offers a sub-Menu with the following Function keys:

The EDIT MACRO Function sub-Menu

[F1] - Press **[F1] Insert / Overwrite** to toggle between insert and overwrite mode.

- With **[F1] Insert** selected, new keystrokes will be entered to the left of the cursor.
- With **[F1] Overwrite** selected, keystrokes will over-write the cursored keystroke.

[F2] - Press **[F2] Next F-Key** to indicate that the next keystroke will be a Function key. Otherwise, Function keys could not be used for Macros.

[F3] - Press **[F3] End Edit** to close the edit mode. ***Note: This is the only way to exit the edit mode.***

[F5] - Press **[F5] Clear Stroke** to delete the currently cursored keystroke.

[F6] - Press **[F6] Clear Macro** to delete the entire current Macro.

The MACRO Function Menu (continued)

[F4] - Press **[F4] Copy To** to copy the current Macro to the next **<selected>** key. After pressing **[F4] Copy** you are prompted**:**

Press the Key to copy to

[F5] - Press **[F5] Clear Macro** to delete all keystrokes from the current Macro without any further warning.

[F6] - Press **[F6] Clear All** to delete all 142 Macros in the current .MAC file. You are prompted:

Really want to CLEAR ALL Macros ? Yes=<ENTER>

[F7] - Press **[F7] Edit Name** to enter a name of up to 13 alphanumeric characters for this Macro. The names of Macros assigned to F-key 1-8 appear as F-key names. The names of Macros assigned to other Control Panel keys appear as the Macro Name when editing the specific Macro key.

[F8] - Press **[F8] Swap with** to exchange Macros between the current and the next **<selected>** key. After pressing **[F8] Swap with** you are prompted: **Press the Key to swap with**

With the MACRO Function Menu open, the [LOAD] and [DUMP] keys open the Macro file directory, offering selections for Macro file management. Macro files have the .MAC suffix and are by default stored in the **C:\LIFT\MACRO** directory.

Note: *While you can use all keys for assigning Macros, Function keys [F1] through [F3] are activated by GPI inputs 1 through 3.*

13.2 Perform a Macro

To perform a Macro,

1. Press **[MACRO]**. The MACRO Function Menu opens.

2. Press **<any key>** programmed with a Macro. The Macro is performed once.

13.3 Save and Load Macro Files

The user can save all active Macros to a file on the system hard drive or to a 3.5" diskette, and recall these saved Macro files as needed. Macro files have the extension **.MAC**.

There is always an active Macro file when the LE-2000 is running.

13.3.1 Saving a Macro File

1. Press **[SHIFT][EDIT]** to open the Macro programming Page.

2. Press **[F2] Save As** to save the currently active Macro file under a different name. A text window is opened, into which the new name is entered.

   Drive letters and directory paths can also be specified. Please observe the DOS convention for filenames. **{Ref: 15.2}**

3. Press **[ENTER]** to return to the Macro programming page. The "Saved As" new file becomes the active MACRO file, and all Macros are still available.

13.3.2 Loading a Macro File

1. Press **[SHIFT][EDIT]** to open the Macro programming Page.

2. Press **[LOAD]** {CP4} to open the File I/O page.

3. Select a file from the displayed list. To move the **selection bar**, turn the jog knob, use the **[←]** and **[→]** arrow keys, or use the **[HOME], [PGUP], [PGDN]** and [**END]** functions in the numeric keypad to select the desired file.

4. Press **[ENTER]** to select the highlighted file name. When the file is loaded, the active Macro is replaced with the Macro from the selected file.

13.4 Loop a Macro

To LOOP a Macro is to repeat the same Macro until **[ALLSTOP]** is pressed. To loop a Macro, include the current Macro number within the current Macro. For example, if the following Macro was stored in [F1]:

[P1] [P2] [F1].

After [P1] and [P2] have been selected, the Macro will execute [F1] (itself), causing [P1] and [P2] to be selected repeatedly until [ALLSTOP] is pressed.

13.5 Nest a Macro

To NEST a Macro is to call or perform another Macro from within the current Macro. For example, if the following Macro was stored in [F1],

[P1] [P2] [F2].

After [P1] and [P2] have been selected, the Macro will execute the Macro stored in [F2].

14. TBC Control

Changing levels of the TBC (Time Base Corrector) output signal of a VTR is usually done at the VTR through on-board controls. Many digital VTRs have the ability to send and receive TBC data via the RS-422 port connected to the edit controller. This ability allows the LE-2000 to adjust these levels directly, save this data in the EDL, and transmit the data back to the VTR to restore previously learned TBC levels.

14.1 Defining the TBC Port

Press **[XPT]** {CP5} to open the XPT dialog. Assure that all entries for VTRs in the Port column are set to "**0**".

14.2 Adjusting TBC Levels

Press **[TBC]** to open the TBC dialog. If the VTR is capable of controlling the TBC levels through the RS-422 port, the TBC dialog and the TBC Function Menu open. If the VTR is not capable of this control, then a **STILL STORE Function Menu** for the switcher may be displayed instead (switcher dependent).

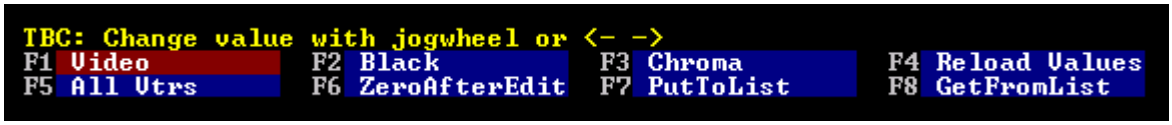
To select an item in the TBC dialog, press **[SHIFT] <jog>** to scroll the items, press **[SHIFT] [🡐]** and **[SHIFT] [🡒]** {CP10} to step through the items, or press **[F1] - [F3]** to select the item directly.

To adjust an item in the TBC dialog, **<jog>** to change the selected value linearly, or press **[🡐]** and **[🡒]** {CP10} to step through the values.

To clear values from the current item, press **[CLEAR]**.

To clear all values from all items, press **[CLEAR]+[CLEAR]**.

The TBC Function Menu



[F1] – Press **[F1] Video** to select VIDEO as the item to change.

[F2] – Press **[F2] Black** to select BLACK (pedestal) as the item to change.

[F3] – Press **[F3] Chroma** to select CHROMA as the item to change.

[F4] – Press **[F4] Reload Values** to immediately load any TBC levels from the current line in the EDL to the appropriate VTR.

[F5] – Press **[F5] All VTRs** to send TBC data from all VTRs to the EDL if **[F7] PUT TO LIST** is enabled, even if the values are the default values.

[F6] – Press **[F6] Zero After Edit** to reset TBC values to default settings after an edit.

[F7] – Press **[F7] Put To List** to store TBC levels in the EDL after each edit. TBC data will continue to be stored after each edit until **[F7] PUT TO LIST** is disabled.

[F8] – Press **[F8] Get From List** to recall TBC levels from the EDL during an edit or preview.

15. File I/O (Load & Dump)

15.1 LOAD and DUMP (Save)

The File I/O page is used for loading, saving and archiving the three types of LE-2000 data files. These are: **User** files, **Macro** files and **EDL** files.

User files store LE-2000 setup environment information, which is modified in the INIT page, as well as other system setup data.

Macro files store the entire set of keystroke Macros that are active at any point in time.

EDL files each contain 1 EDL (Edit Decision List).

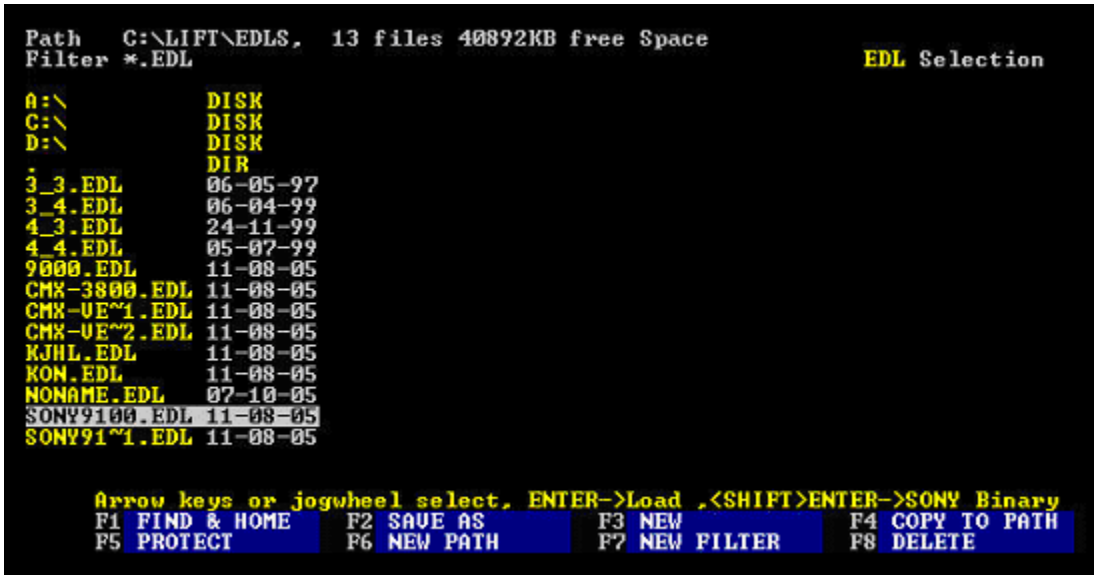
When the LE-2000 is running, there is always an active version of each of the three types of files, including the first time the system is installed and run.

Each time the system is started, the LE-2000 software uses the “Last Used” version of each type of file. These filenames are stored in the file “LIFT.INI”.

When operating the LE-2000, every change made to INIT page settings, to Macros or to the active EDL, is immediately reflected in the corresponding active file. This ensures that no changes or data are lost if the LE-2000 loses power.

Before opening the File I/O page, it is helpful to make sure that the page is set up with the correct file type, pathname and filter for the file you want to load or save.

Press **[LOAD]** or **[DUMP]** {CP4] to open the File I/O page.



The example above shows the I\O page EDL default state.

- The File Selection “EDL” is at the upper right corner.
- The Path, at the upper left, is the current EDL path, and just below that is the EDL Filter. “*.EDL” is the setting to display only files with the extension EDL. The “*” is a DOS wildcard, which selects any file name of any length. User files have the extension .MEM, and Macro files have the extension .MAC.

Loading a File

Select a file from the displayed list. To move the **selection bar**, turn the jog knob, use the **[←]** and **[➔]** arrow keys, or use the numeric keypad functions **[HOME], [PGUP], [PGDN]** and [**END]** to select the desired file.

Press **[ENTER]** to select the **highlighted** object.

If the object is a drive or directory path, it becomes the new current path.

If the file is a **User file**, when the file is loaded all INIT page and other system settings immediately become activated,

If the file is a **Macro file**, when the file is loaded all macros become available, and any macros that were previously active will be gone.

If the file is an **EDL file**, when the file is loaded the stored EDL becomes active, and the existing EDL is gone.

All of the replaced User, Macro and EDL information is stored in the previously active corresponding file.

Saving a File

As described above, all changes to EDL, User and Macro data are saved immediately to ensure that no data is ever lost due to a power outage or other catastrophe.

The active file is always the last one loaded or created with the "New" function or "Save As" function in the LOAD & DUMP Function Menu. File management tools described below are useful for saving versions, and for making backups to archive directories or to 3.5" diskettes.

The LOAD & DUMP Function Menu

[F1] - Press **[F1] Find & Home** to search for a specific file name. The cursor jumps to the name of the object starting with the letters entered. The jog knob and arrow keys are active again as soon as the cursor has jumped to the new position.

[F2] - Press **[F2] Save As** to save the currently active file under a different name. A text window is opened, into which the new name is entered.

Drive letters and directory paths can also be specified. Please observe the DOS convention for filenames.

The "Saved As" new file becomes the active USER file, MACRO file or EDL file, and all the settings of Macros and EDL edits are still as they were before the save. The previously active file is a "snapshot" of the data in that file at the time the SAVE AS operation was done.

[F3] - Press **[F3] NEW** to open a new file. The new file becomes the active User file, Macro file, or EDL file.

The new INIT Page settings are set to factory default values, and these are immediately stored in the new User file.

The active Macros are still active, and are stored immediately in the new Macro file.

A NEW EDL file is empty, and fills with EDL data as the job proceeds.

[F4] - Press **[F4] Copy to Path** to copy the currently active file into the currently specified path. If this path already contains a file having the same name, a warning message is displayed.

[F5] - Press **[F5] Back to Path** to return to the initial job directory.

[F6] - Press **[F6] New Path** for direct access to a desired directory. If this directory does not yet exist, it is created and made available to the user.

[F7] - Press **[F7] New Filter** to specify a new selection filter for the data files to be listed on this page. The specification must conform to the DOS convention for wildcards.

[F8] - Press **[F8] Delete** to delete the selected file. For safety, a confirmation question must be answered before the file is deleted.

15.2 DOS convention for file names

A file name consists of up to 8 characters plus a dot and 3 extension characters. Each directory entry in a path may have 8 characters and no extension. Valid characters are letters, A-Z, numerals 0-9 and the special characters *$ % ' - _ @ ~ ` ! ( ) ^ # &*

The following characters are not valid: space, comma, colon, semicolon, question mark, asterisk, the characters "<", ">", "/" and any other special characters not specifically listed above.

15.3 DOS convention for wildcards

" ***** " represents the maximum number of random letters before or after the dot.
" **?** " represents a single character at an exact position.

For example, "*.EDL" finds all files with the ".EDL" extension, "Sample?.MEM" finds files with names such as "Sample2.MEM" and " *.* " finds all files in the path.

This page intentionally left blank

16. Technical Information

16.1 Full Software Installation

The following procedure is for installing the LE-2000 system software on a new hard drive. If this procedure is performed on a previously used hard drive, all files from the DOS partition will be erased.

Installation requires a complete set of three LE-2000 3.5" diskettes. The keystrokes in this section are all entered from the PS2 keyboard.

Software diskettes required

Disk 1: LE-2000 DOS Boot Disk
Disk 2: DOS(2) and XTREE Disk
Disk 3: LIFTZIP Disk

16.1.1 Create a Bootable DOS Partition

1. **Boot the LE-2000 to Disk 1**

a. Insert **Disk 1** into the disk drive.
b. If the LE-2000 is powered up, press the red **Reset** button. Otherwise press and release the black power switch.
c. The **A:\>** prompt appears in about 20 seconds. Continue to step 2.

2. **Create a DOS partition with FDISK**

a. Prompt: **A:\>**
Response: Type **FDISK** then press **[ENTER]**.

b. Prompt: **Do you want to enable large disk support?**
Response: Type **N** then press **[ENTER]**.

c. Prompt: **Create DOS Partition or Logical DOS Drive?**
Response: Type **1** then press **[ENTER]**.

d. Prompt: **Choose one of the Following: 1 Create Primary DOS Partition . . .**
Response: Type **1** then press **[ENTER].**

e. Prompt: **Verifying Drive Integrity**. After 30 seconds the prompt appears:

"Do you wish to use the maximum available size for a Primary DOS Partition and make the Partition active?"

Response: Type **N** then press **[ENTER]**.

f. Prompt: **Verifying Drive Integrity**. After about 30 seconds, the prompt appears:

Do you want to use the maximum available space for the Partition?

Response: Type **N** then press **[ENTER]**.

g. Prompt: **Enter Partition Size in Mbytes . . .**
Response: Type **902** then press **[ENTER]**.

h. Prompt: **Primary DOS Partition created. Press [ESC] to continue**.
Response: Press **[ESC]**.

i. Prompt: **Fdisk Options . . . (2) Set Active Partition . . .**
Response: Type **2** then press **[ENTER]**.

j. Prompt: **Enter the number of the Partition you want to make active.**
Response: Type **1** then press **[Enter].**

k. Prompt: **Partition 1 made active, [ESC] to continue**
Response: Press **[ESC].**

l. Prompt: **[ESC] to exit**
Response: Press **[ESC].**

m. Prompt: **[ESC] to exit**
Response: **Press [ESC]. Continue to step 3.**

3. **Install DOS**

a. Prompt: **A:\>**
Response: Press **[Ctl][Alt][Delete]** to reboot to Disk 1.

b. Prompt: **A:\>**
Response: Type **format c:/s** then press **[ENTER]**.

c. Prompt: **Proceed with Format?**
Response: Type **Y** then press **[ENTER]**.

d. Prompt: **Format Complete, System transferred, Volume Label**
Response: Type **EC3000** then press **[ENTER]**.

e. Prompt: **A:\>**
Response: Type **C:** then press **[ENTER]** to change the logged in drive to C:

f. Prompt: **C:\>**
Response Type **md dos** then press **[ENTER]**.

g. Prompt: **C:\>**
Response: Type **cd dos** then press **[ENTER]**.

h. Prompt: **C:\DOS>**
Response: Type **copy a:*.*** then press **[ENTER].** Continue to step 4.

4. **Copy additional DOS and XTREE files**

a. Remove Disk 1 and insert **Disk 2**

b. Prompt: **C:\DOS>**
Response: Type **copy a:*.*** then press **[ENTER].**

16.1.2 Install the LE-2000 software

1. **Remove Disk 2 and insert Disk 3.**

a. Prompt: **C:\DOS>**

Response: Type **cd..** then press **[ENTER]** to change to the Root directory.

b. Prompt: **C:\>**
Response: Type **md lift** then press **[ENTER].**

c. Prompt: **C:\>**
Response: Type **cd lift** then press **[ENTER]**.

d. Prompt: **C:\LIFT>**
Response: Type **a:liftzip -d** then press **[ENTER]** (space, hyphen, d, following **a:liftzip**).

e. A long list of file names is displayed, then at the Prompt **C:\LIFT>**
Response: Type **liftinit** then press **[ENTER]**.

2. **Remove Disk 3**.

a. Prompt: **C:\LIFT>**
Response: Press **[Ctl][Alt][Delete]** to reboot the LE-2000.

The LE-2000 software will be running.

16.2 Installing Software Updates

Operating software is updated by running an executable installation file on the LE-2000.

The installation disk may be obtained in one of two ways:
It may be distributed to the user on a 3.5" floppy diskette for use directly on the LE-2000, or it may be downloaded from an FTP site to an Internet connected computer. Please contact your EDIWARE representative for the FTP site address.

1. From the FTP site, copy the installation file named **LIFT4.EXE**, **LIFT8.EXE** or **LIFT16.EXE**, depending on the model for which it is intended, to a 3.5" diskette.

2. Place the diskette into the 3.5" diskette drive on the LE-2000.

   It is recommended that you save the current software version by renaming it on the system hard drive from LIFT.EXE to another name. A good practice is to rename the file so that the release number is identified as part of the file name.

   For example: if your current software version is 5.23a, from the DOS prompt type

   C:\lift>rename lift.exe lift.23c (Note that the last 3 characters of the version form the new filename extension.)

3. Press **[ENTER]**.

4. At the DOS prompt, enter the following:

   C:\LIFT>a:lift4 (Substitute **a:lift8** or **a:lift16**, depending on which LE-2000 model you have).

5. Press **[ENTER]**.

You will see several messages on the screen indicating that files are being extracted. When the installation is complete,

6. At the DOS prompt type: **C:\LIFT>lift**

7. Press **[ENTER]** to run the new software.

8. Press **[SHIFT][INIT]** to check that the new version has been installed.

16.2.1 Restoring Previous Software

If there is a problem with the new version installation, to return to your earlier version, at the DOS prompt enter the following three commands:

C:\LIFT>delete lift.exe
Press **[ENTER]**

C:\LIFT>rename lift.23c lift.exe ("lift.23c is an example. Use the specific version name of your new software.)
Press **[ENTER]**

C:\LIFT>lift
Press **[ENTER]**

You should now be running the original software version you used before the update.

16.3 Managing LE-2000 System Data Files

The LE-2000 System executable programs and data files reside in the **C:\LIFT** directory on the system hard disk. **LIFT.EXE** is the main program, and it requires auxiliary files and drivers for VTRs and other source devices, video switchers and audio mixers.

Occasionally it is necessary to move files from one directory to another, or to change a text file related to the LE-2000 application. For that purpose, a convenient file management and text editing application, XTREE, is installed on the system.

16.3.1 Starting and Closing XTREE

The PS2 Keyboard is used for entering commands in XTREE or at the DOS command line.

To quit the LE-2000 System application and return to DOS, press either **[ALT][X]** on the PS2 keyboard or **[JOB], [F8]** on the LE-2000 control panel.

At the DOS prompt, press **[X], [ENTER].** You will see the XTREE screen.

To close the XTREE application and return to the DOS prompt, press **Q** then **Y**, the press **[ENTER]**.

16.3.2 Starting the LE-2000 application from the DOS prompt

The LE-2000 System automatically runs on boot-up, as the two lines; "**cd\LIFT**" and "**LIFT**" are included at the end of the AUTOEXEC.BAT file.

To re-run the LE-2000 System after you have quit the LE-2000 application, type **LIFT** and then press **[ENTER].**

- If the current active directory is C:\LIFT, the LIFT.EXE program runs.
- If the current active directory is anything other than C:\LIFT, the LIFT.BAT file executes, which changes the directory to C:\LIFT, and then runs the LIFT.EXE program.

16.3.3 The Initialization file (LIFT.INI)

The **LIFT.INI** file contains the last-used path and file names of the EDL, MACRO, USER, TAKE and PROFILE files. The software version of the control panel is also contained in this file. Each time the LE-2000 System is started; this information is used to restore the system to its pre-shutdown state. For example:

```
[LIFT STARTUP]
EDLFILTER       = *.EDL
EDLDIR          = C:\LIFT\EDL
EDLNAME         = NONAME.EDL
USERDIR         = C:\LIFT\USER
USERNAME        = LIFT
TAKEDIR         = C:\LIFT\TAKE
TAKENAME        = TOKEN.LST
MACRODIR        = C:\LIFT\MACRO
MACRONAME       = MIKE.MAC
PROFILEDIR      = C:\LIFT\PROFILE
PROFILENAMES    = CH1 CH2 CH3 CH4

[OPTIONS]
OPTIONS         = CONSOLE_2 GPI_IN
```

If this file is unrecognized or missing, a new LIFT.INI file is created with default values, and an error message is displayed at the start-up of the system.

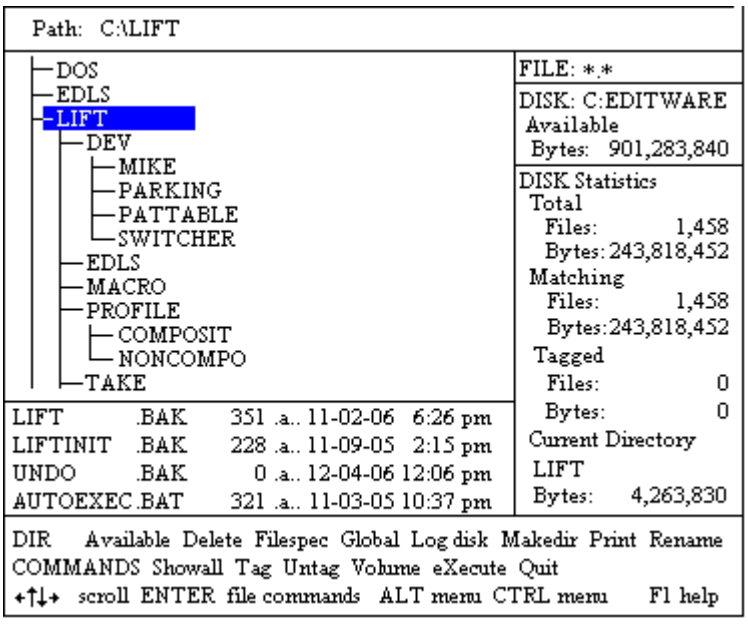
The LE-2000 System Control Panel version is defined in the entry OPTIONS=CONSOLE_2. GPI_IN is placed on this line when using the GPI_IN feature.

Many of the parameters in LIFT.INI are set within the LE-2000 application. Other values can only be changed by directly editing the file. The next section describes how to change the video standard (NTSC, PAL or 24-frame).

16.3.4 Using XTREE to modify the Initialization file (LIFT.INI)

At the DOS prompt, C:\LIFT> type **X**, then press **[Enter]**

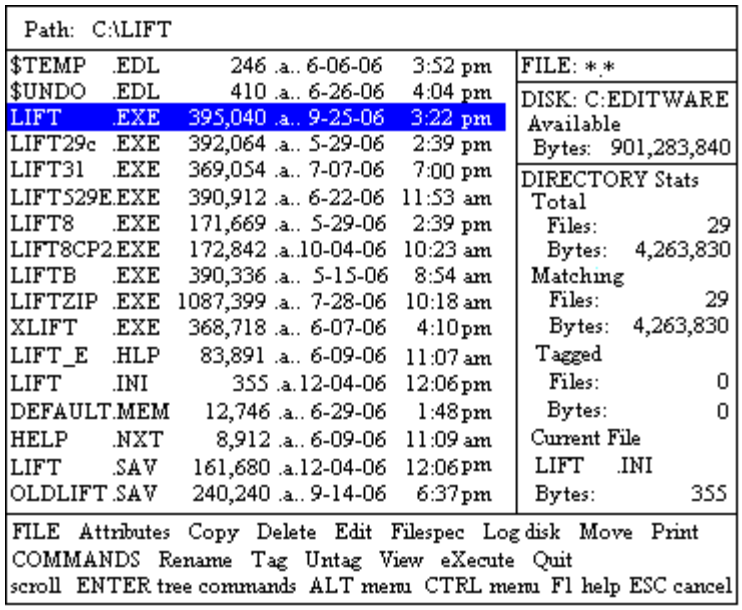
The XTREE application looks like this when it starts:



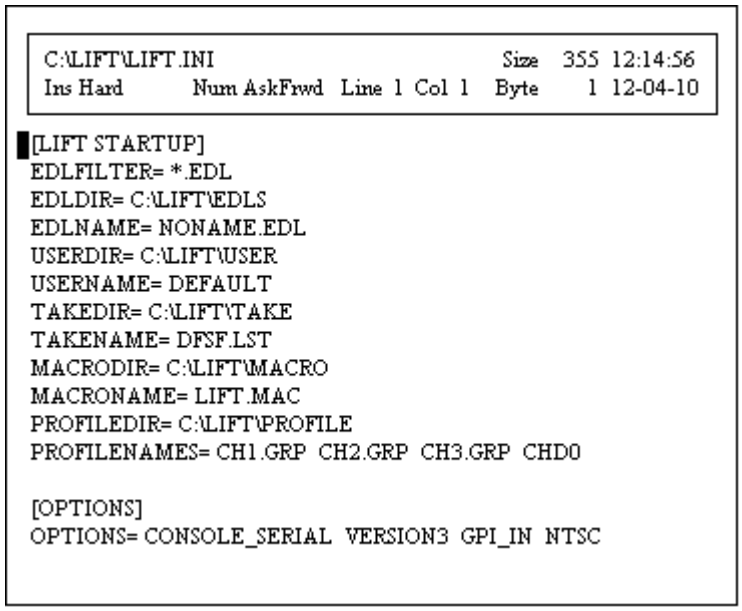
The several directory functions available within XTREE are listed at the bottom of the screen. To select one of the functions, type the initial, or highlighted letter of that function.

The top section of the screen shows the root directory "tree". To see the files within a particular directory, scroll to that directory using the up and down arrow keys. Scroll to the directory of interest and press **[ENTER].**

The full directory you have selected now is displayed:



To work with a particular file, use the arrow keys to scroll down or up to highlight that file. In the above example we have selected LIFT.INI. When LIFT.INI is highlighted, press **E**, to invoke the Edit file command, seen in the list of FILE COMMANDS at the bottom of the screen. Then at the prompt asking you to confirm that you want to Edit the file LIFT.INI, press **[ENTER]**. You will now see the file LIFT.INI opened for editing:



Normally, the Video Standard setting remains as set at the factory, that is, NTSC for systems shipped to NTSC-standard countries and PAL for systems shipped to PAL-standard

countries. For NTSC standard systems, the string “NTSC” appears following the “OPTIONS=” on the last line of the LIFT.INI file. For PAL standard, there is NO standard indication following the “OPTIONS=”, and for 24-frame standard, the string “P24” follows “OPTIONS=”.

To change standards, open the LIFT.INI file for editing, use the arrow keys to scroll down and over to the end of the “OPTIONS=” line and type over the existing standards indication. To change from PAL-standard systems, scroll to the end of the “OPTIONS=” line and type **NTSC** or **P24**, depending on the desired standard.

To exit and save the change, press **[ESC]**, then **[ENTER]** to confirm the file is to be saved. To exit without saving changes, press **[ESC]**, then **Q** to quit without saving.

Then to exit from XTREE, press **Q** to quit, then **Y** to confirm.

16.3.5 LIFT.HLP (Context-Related Help)

The context-related help information is contained in the LIFT.HELP ASCII text file.
It is possible to edit the file and include content that is specific to your facility or application. However be aware that each time a full installation of updated software is installed, you may need to add that same information to the updated help files that come with the new release.

In the text of the help file, key names have a @ prefix. Their designation corresponds exactly to the keystroke names displayed in the Macro menu. This file is formatted during operation. When modifying the file, delete the **HLP.NTX** index file. Then the next time the LE-2000 system is run, it regenerates the index information and properly includes the new help information.

16.3.6 USER Files (.MEM)*

These files contain the configuration of machines and assignments. User-settable display colors and the settings of the **INIT Page** are stored in this file.

16.3.7 LIFT.SPD

This file contains the constants for machine control. This file is automatically generated if it is not available.

16.4 Machine Control Drivers

The **\DEV** subdirectory contains the drivers used to control individual VTRs, disk recorders and a few related devices. A maximum of 60 DEV files are recognized by the LE-2000 software when the system is active. Therefore there should always be 60 DEV files or fewer in the \DEV subdirectory. The \DEV subdirectory also holds the active video switcher driver file and the active audio mixer driver file. A maximum of one (1) switcher driver file and one (1) audio mixer file can be stored in the \DEV subdirectory.

A list of currently available device drivers, along with the currently active video switcher driver and audio mixer driver can be displayed when running the LE-2000 application by pressing [SHIFT][CFG]. This is a quick way to determine how many DEV files can be added to the \DEV subdirectory.

A subdirectory named **\DEV\PARKING** is used to store unused DEV files. A subdirectory named **\DEV\SWITCHER** holds all possible switcher driver files (SWI files) and audio mixer files (ESM files). A procedure to use XTREE to move files between subdirectories is documented in a section below.

16.4.1 Auto-detection of devices

The LE-2000 System automatically identifies the connected machines by sending a DEVICE REQUEST to all unidentified ports. If a reply message is received, it displays the device code and compares it with the device codes of the available driver files. If a match is found, the identified driver is used and the corresponding model name appears on the edit screen. If a match is not found, a "UNIVERSAL" setting is used which corresponds to the parameters of a Sony BVU VTR.

16.4.2 DEV files for VTRs and related devices:

The VTR, disk recorder and some effects devices' driver files are identified by a ".DEV" suffix, and are written in ASCII text. These files can be copied and edited to enable control of new VTRs or to modify the current parameters. It is recommended that unless you have experience in modifying control protocols, that you consult the LE-2000 manufacturer before making any changes to these files.

Example of a VTR driver:

```
DVW-510P B111           // Model Name as displayed on the edit screen, Device Code
rev_vari_maxspeed 10    // max varispeed reverse*10
fwd_vari_maxspeed 30    // max varispeed forward*10
jogspeed 15             // crawl speed
syncspeed 20            // percent offset speed from 100 for synchronization
syncwindow 00           // default window for synchronization.  00 is exact frame.
playdelay 1E            // Hex value for the start delay in edit
pre-roll 4B             // NA
tcg_delay 04            // delay of timecode generator during jam
preview_ins_in 04       // edit insert in delay during preview
ee_delay_10_ 08         // 10-8 =2 Frames EE-delay for Assemble PVW
preview_ins_out 04      // edit insert out delay during preview
edit_ins_in 04          // edit insert in delay during record
edit_ins_split 04       // edit insert split delay during record
edit_ins_out 04         // edit insert out delay during record
cuespeed_fak 40         // hex multiplier for cuespeed
cue_window 00           // window for acceptance "cued"
lock_speed_fak 10  /    / NA
lock_window 00          // NA
cue_with_data 20        // 00 = cue with data, else multiplier
// for decision Fastwind / SHTL
maxwind 48              // max shuttlespeed
protocol 00             //


// here are the actual commands
STAX 61210284           // Extended Status
EJEC 200F               // Eject
STAT 6120098A           // Status w /chksum
TT-1 610C0471           // CTL w /chksum
TC+ 610C016E            // LTC+ w /chksum
VITC 610C0370           // AUTO w /chksum
UBIT 610C107D           // USER w /chksum
S-T2 413601             // Set tapetimer 2 at VTR display
SLTC 413600             // Set LTC at VTR display
TTPR 4400               // tapetimer preset
PRRD 413D               // Preread CMD
AUTO 4041               // for AUTO-EDIT off
EEON 2061               // EE-on CMD
```

```
EEOF 2060              // EE-off CMD
SELE 2063              // PVW for selected channels
SBOF 2004              // Standby off
SBON 2005              // Standby on
STOP 2000              // Stop
REC 2002               // crash record CMD
PLAY 2001              // play CMD
EDON 2065              // selected channels edit on
EDOF 2064              // selected channels edit off
REW 2020               // fast rewind
FFWD 2010              // fast forward
JOG+ 2211              // jog fwd 2byte
JOG- 2221              // jog rev 2byte
VAR+ 2212              // varispeed fwd 2byte
VAR- 2222              // varispeed rev 2byte
LEV? 62230000          // TBC levels request
LEV@ 42910000          // TBC levels set
SHL+ 2213              // shtlspeed fwd 2byte
SHL- 2223              // shtlspeed rev 2byte
CUE 2431               // cue up with data (see cue_with_data para)
TCPR 4404              // timecode generator preset
UBPR 4405              // User Bits preset
EDPR 4230              // Select channels for REC/PVW 2Byte
CFSL 4135              // Color frame select CMD
SPEC 01                // VTR has special functions
```

16.4.3 Video Switcher Driver

The video switcher is not identified automatically by the editor. A driver file, corresponding to the type of switcher connected to the LE-2000 System, with the **.SWI** suffix, resides in the "**C:\LIFT\DEV**" directory. *Only one file of this type is allowed in the directory at a time.*

A list of video switcher drivers is available in the "C:\LIFT\DEV\SWI" directory.

Example of a SWITCHER driver:

```
HANABI
00_parity_delay_adr 011130          //
01_xptswap 03008000                 //
02_set_wipe_pattern 05009B000000    //
03_transmode 03009000               //
04_transrate 0400980000             //
05_auto_trans 0400960000            //
06_press_inv 04009B0400             //
07_transtype 03009100               //
08_emem_group 0421300000            //
09_emem_learn 0421800100            //
10_emem_recall 0421900100           //
11_emem_get 00                      //
12_aux_bus_pgm 03308000             //
13_byte_analog_fader 00             //
14_me_dsk_keys 0201                 //
```

16.4.4 Audio Mixer Driver

The Audio Mixer is not identified automatically by the editor. A driver file, corresponding to the type of mixer connected to the LE-2000 System, with the **.ESM** suffix, resides in the "**C:\LIFT\DEV**" directory. *Only one file of this type is allowed in the directory at a time.*

A list of audio mixer drivers is available in the "C:\LIFT\DEV\SWI" directory.

Example of a MIXER driver:

03D

00_Parity_Delay_Adr	0001B00000
01_MonitorSelect	C000
02_FaderSelect	F0
03_Type	00

16.4.5 Using XTREE to DELETE driver files

Note: *Never delete files from any directory other than C:\LIFT\DEV. Other subdirectories have files that are necessary for LE-2000 operation, and some subdirectories contain the complete backup of all DEV, SWI and ESM files.*

If you are not familiar with starting the XTREE program, please see section **16.3.1.**

Once XTREE is running, you will see the directory tree at the top of the screen. To delete a file, first navigate to the file you want to delete. To navigate to a file, use the arrow keys to move up and down the directory tree until you have selected the directory from which the file is to be deleted. This is normally the C:\LIFT\DEV subdirectory. When that subdirectory is highlighted, press **[ENTER]**. You will now see a list of all files in that subdirectory. To select the file you want to delete, use the arrow keys to move up and down the list until the desired file is highlighted. At that point, press **D**, and then press **Y** to confirm the deletion.

16.4.6 Using XTREE to COPY driver files

Note: When copying driver files to the /DEV subdirectory, make sure you do not end up with more than 60 DEV files, or more than one SWI or ESM file in the /DEV subdirectory. If necessary, use XTREE to delete DEV, SWI or ESM files before coping additional files into the subdirectory. The DELETE procedure is described in section **16.4.5**

Once XTREE is running, you will see the directory tree at the top of the screen. To move a file, first navigate to the file you want to move. To navigate to a file, use the arrow keys to move up and down the directory tree until you have selected the subdirectory from which the file is to be copied. This will normally be either the C:\LIFT\DEV\PARKING or the C:\LIFT\DEV\SWITCHER subdirectory. When that subdirectory is highlighted, press **[ENTER]**. You will now see a list of all files in that subdirectory. To select the file you want to copy, use the arrow keys to move up and down the list until the desired file is highlighted. At that point, press **C** for copy, then, when asked for the new name press **[ENTER]** to give the copied file the same name. At that point, you are asked for the new directory to which the file is to be copied. Press **[F2]** to browse to the new directory. Use the arrow keys to move up or down to the new directory, which will normally be C:\LIFT\DEV. Select that subdirectory and press **[ENTER]**, then press **[ENTER]** again to confirm the move.

16.4.7 Pattern Table

When performing a WIPE effect with the LE-2000 System, wipe numbers are selected by entering a 3 digit integer. A lookup table, which converts the integer to a 2-digit hex number, is stored in a file with the **.PAT** suffix in the **"\DEV"** directory. The user can create or edit this table if wipe patterns are not selected correctly in the edit dialog. It can contain up to 255 lines. For some video switcher models, tables are already prepared in the "C:\LIFT\DEV\PAT" directory.

Input		Output
1	0A	// first column is input LE, second value is Hex input to the switcher
2	00	
3	0E	
4	14	
5	04	
6	0B	
7	01	
8	17	
9	03	
10	21	

This page intentionally left blank

Index

Items in UPPER case generally refer to a Control Panel Key with the same name.
Items in Upper and Lower case generally refer to a feature or function of the editor.

< 29
> 29
1ST ED 57
24-Frame Standard 70, 113
24P 70, 113
4-Field 70
8-Field 70

A

A/V Components 17, 76
A/V Components, Gang 36
A/V Components, Live To List 51, 57
A/V Components, Master/Slave 61
A/V Components, Match 76
A/V Components, Multiple Devices 60
A/V Components, None Selected 56
A/V Components, Secondary Recorder 35
A/V Components, Split Edit 58, 59
A/V Components, Timecode Track 57
A/V Match 47, 76
A1-A8 ..... 56, 59
A1-A8, Multi-Record 59
Action TAG 46
ADD 55, 87, 88
Add Background to Key 67
Add Background to Transition 67
Add VTRs 23
All Still 74
ALL-STBOFF 29
ALLSTOP 30, 74, 75
Allstop Safety 30, 75
Always Add Edit to EDL 76, 85, 88
Analyze EDL 94
ASK 21, 26
ASMBL 57, 60
ASSEM 16, 17, 57, 58
Assemble Mode 16, 55, 57, 71
Assemble Mode, Allow (enable) 58, 71
Assemble Mode, Inhibit 71
Assemble Mode, Preview 52
Assemble Mode, Secondary Recorder 60
Assign, Audio Faders 71
Assign, Aux Bus PGM Reentry 25
Assign, Crosspoints 25
Assign, Device ID 26
Assign, Device Type 26
Assign, Ports 23
Assign, Profile Port 25
Assign, Reel ID 24
Assign, Router Video Crospoint 26
Assign, Sources 23
Assign, TBC Port 25
ASSY 96
Asterisk 33, 34, 36, 42, 61
ATN-TAG 46
Audio Mixer 25, 71, 115
Audio Mixer Control 63
Audio, A1-A8, Split Edit 59
Audio, Crosspoints 25
Audio, Cue Channels 56, 57
Audio, EE Preview 51
Audio, ESM Mixer Driver 22
Audio, Fader Assign 71
Audio, Monitor 51
Audio, Pvw Monitor 51
Audio, Router Destination Crosspoints 26
Audio, Router Source Crosspoints 26
Auto Assemble 74, 94, 95, 96
Auto Assemble, Block 95
Auto Assemble, INIT Page Settings 95
Auto Assemble, Perform 96
Auto Assemble, Range of Events 96
Auto Assemble, Reel ID 95
Auto Assemble, Show Start Time 94
Auto Assemble, Skip Missing 94, 95
Auto Assemble, Skip Recorded 94, 95
Auto Assemble, Stop On Comment 95
Auto LTC/VITC 43
Auto Match 48
Auto Pre-read 80
Auto Select Jog 75
Auto Tag 17
Auto Timecode 43, 114
Auto Track 17, 76
Auto-detection of devices 114
Aux Bus Preview 26, 51, 70, 72

AUX Menu 27, 40, 43
AUX Sources 23

B

Back Step 89
Backspace 44
BAK 40, 50
Beep 73, 76
Black Video Black Preview 53
Block 86, 90, 92, 95
Boot Disk 107
BS 86, 89
Bump Out 55
BV Preview 53
BVB Preview 53

C

C 17, 39
Calculator 42
CFG 26
Clean Screen 74, 89
CLEAR 35, 44
Clear, Auto Transition 68
Clear, Durations 56
Clear, Edit Selections 44
Clear, IN 44
Clear, Macro 98
Clear, Master/Slave 44
Clear, Open End 56
Clear, OUT 44
Clear, Save Registers 44
Clear, Screen 74
Clear, Split Edit 45, 59
Clear, Split Times 45
Clear, System Reset 45
Clear, TBC 101
Clear, Times 44
Colon 17, 42
Color Frame 30, 43, 70
Configuration File 69, 76, 77, 78
Configuration, Load 104
Configuration, Recall 104
Connections 21
CONST 32, 40, 49, 50
Constant Registers 49, 50
Constants 32, 49, 50
Constants, OUT 49
Constants, Position 49
Constants, Rollover 50
Contants, IN 49
Control Panel 5, 11, 13, 19
Control Track 17, 39, 43
Control Track Editing 41
Copy driver files 116
Countdown to the edit 15, 52
Crosspoint 26, 70, 71, 72
Crosspoint, Assign 25
Crosspoint, Audio 25
Crosspoint, Delay 71, 72
Crosspoint, PGM Reentry 51
Crosspoint, Reentry 51
Crosspoint, Router Audio Destination 26
Crosspoint, Router Source Audio 26
Crosspoint, Router Video 26
Crosspoint, TBC 101
Crosspoint, Video 25
Crosspoint, Video Router Destination 26
CTL 43
CTL/TC 39
CUE 31, 32, 68
Cue Channels 57
Cue, To Current IN-time 31
Cue, To EDL Time 31
Cue, To Keyboard Register 31
Cue, To VTR OUT 31
Current 11
Current Position 17
CUT 16, 33, 63, 74

D

DATA 18
Data Files 110
DBLD 30, 31
Delayed Dissolve 64, 65
Delayed Wipe 65
Delete driver files 116
Delete Edit From EDL 89
Delete, EDL 90
Delete, EDL Block 90
Delete, Ripple 89
DEV files 113, 114
Device ID 26
Device Type, List 26
Device, Status 17
DF 41
Dialog, Key 65
Dimensions 13
Disable VTR 31

Display Screen 15
DISS 16, 33, 63
Dissolve 16, 33, 63
Dissolve, Delay 64
Dissolve, Dialog 63
Division 42
DOS 13, 21, 94, 105, 107, 108, 110
Downstream Key 67, 71, 115
Drop Frame Timecode 16, 41, 42
DSK 67, 71
Dummy Edit 55, 87, 88
DUMP 103, 104
Dump, EDL 93
Dump, User File 77
DUR 39, 40, 41, 44, 55
DUR, Setting Duration 39
Duration 39, 40, 44
Duration, Clear 44
Duration, Display 15
Duration, Recall Previous 40
Duration, Record 55
Duration, Recorder 74
Duration, Source 74
Duration, Transfer 40
Duration, Undo 45

E

Edit # 15
Edit Abort 52
Edit Decision List 18, 55, 85
Edit Decision List, Always Add to EDL 76
Edit Decision List, Display More 23
Edit Decision List, Extended TAG 46
Edit Decision List, Hide 75
Edit Decision List, Live Switch 51
Edit Decision List, Live To List 57
Edit Decision List, Match 45
Edit Decision List, Name, ... 15
Edit Decision List, Navigate 85
Edit Decision List, Next Edit 62
Edit Decision List, Print 88
Edit Decision List, Record TAG 46
Edit Decision List, Search for Reel ID 32
Edit Decision List, Seek Record Reel . 75
Edit Decision List, Stop on Comment . 74
Edit Decision List, Tagged 17
Edit Decision List, Time Tracking 45
Edit Decision List, Update 56
Edit file 22, 112
Edit Screen 15
Edit Screen Swap 18
EDIT# 62
EDL 18, 55, 85
EDL, Add 88
EDL, Add Notes 92
EDL, Always Add Edit to EDL 88
EDL, Always Add Edit to EDL 76, 85
EDL, Analyze 94
EDL, Auto Assemble 95
EDL, Bottom 85
EDL, Clean Screen 89
EDL, Clear 85, 94
EDL, Clear R-Marks 94
EDL, Copy 86, 87
EDL, Create New 94
EDL, Cue Device to EDL Time 32
EDL, Cut 86
EDL, Delete 87, 89
EDL, Delete All 90
EDL, Delete Block 90
EDL, Directory 111
EDL, Display More 23
EDL, Dummy Edit 88
EDL, Dump 93
EDL, Extended TAG 46
EDL, Files 93
EDL, Filter 111
EDL, Fix Record Out 89
EDL, Get TBC 102
EDL, Hide 75, 94
EDL, Import 94
EDL, Insert 86
EDL, Job Name 15
EDL, Line Pattern 95
EDL, Live Switch 51
EDL, Live To List 57
EDL, Load 93
EDL, Match 45
EDL, Move 86
EDL, Name 15, 111
EDL, Navigate 85
EDL, New 94
EDL, Next Edit 62
EDL, Print 87, 88
EDL, Recall 88
EDL, Record TAG 46
EDL, REDO 88
EDL, Renumber 87, 88, 90, 95
EDL, Replace 87

EDL, Replay 32
EDL, Ripple 87, 90, 91
EDL, Ripple Recorders 91
EDL, R-Marks 87, 95
EDL, R-Status 87
EDL, Save 93
EDL, Search 92
EDL, Search for Reel ID 32, 92
EDL, Seek Record Reel 75, 89
EDL, Shorten 23
EDL, Skip Recorded 87
EDL, Source Ripple 91
EDL, Stop on Comment 74
EDL, SYN-REF 49
EDL, TAG 45
EDL, Tagged 17
EDL, Top 85
EDL, Undo 86, 87, 92
EDL, Update 56
E-E 51, 70
Effects Memory 68
EJECT 30
E-MEM 3, 16, 68
E-MEM Auto Transition 68
E-MEM, Learn 68
E-MEM, Rate 68
E-MEM, Register # 68
Enable VTR 31
ESAM2, Preview 51
ESC 67
ESM Drivers 21
ESM files 113
Exchange 18
Exchange, Edit Screen 18
Exchange, Reel ID 24
Exit to DOS 94
Extended Match 48
Extended TAG 46

F

F/TC 40, 41
F1-F8 18
Fast Forward 29
FDISK 107
FFWD 29
FILL 79
Fill Source 67
First Edit 57
Fix Record Out 74, 89
F-Keys 18, 19
Forward Step 89
Frame Accuracy 43
Frame Bump 30
Frame-by-Frame 29
Frames / Timecode 40, 41, 63, 64, 65
FROM Source 33, 64, 65, 66, 68
FS 86, 89
Function Menu 18, 19
Function Menu, Assign Device 25
Function Menu, Auto Assemble 95
Function Menu, Clear 44
Function Menu, Constants 49
Function Menu, Crosspoint Assign 25
Function Menu, Dissolve 64
Function Menu, DSK 67
Function Menu, EDL 85
Function Menu, E-MEM 68
Function Menu, GPI 81
Function Menu, I/O 73, 78
Function Menu, INIT Page 69
Function Menu, Job 94
Function Menu, Keys 65
Function Menu, Macro 97
Function Menu, Master/Slave 34
Function Menu, Port Assign 23
Function Menu, Preview Modes 51
Function Menu, Reel 24
Function Menu, Speed 79
Function Menu, Split Edits 58
Function Menu, TBC 101
Function Menu, Timecode 43
Function Menu, Undo 45
Function Menu, Wipe 64
Function Sub-Menu, Block 86
Function Sub-Menu, Macro 98

G

GANG 33, 34, 61, 73
Gang, Disable Ganged Devices 34
Gang, Enable Ganged Devices 34
Gang, Keep Master 73
Gang, Master Sync 34
Gang, Record 61
General Purpose Interface (see GPI) . 81
Genlock 21
GOTO 31, 32, 34, 40, 69
GPI 81
GPI, Auto Increment 81

GPI, Connection 13, 21, 83
GPI, Contacts 83
GPI, Delay 81, 82
GPI, EDL 18
GPI, Fire Now 81
GPI, Inputs 82
GPI, Keyboard Register 40
GPI, Length 82
GPI, Macros 1-3 82
GPI, Name 81, 82
GPI, Pin-outs 83
GPI, Pulse Length 81
GPI, Pulse Options 81, 82
GPI, Select Number 81
GPI, Sub Register 81
GPI, Sub-Registers 82

H

Hard Record 58
HELP 19, 113
Hide EDL 94
Hold Lock 31, 74

I

Import EDLs 94
IN 17, 39, 41, 66, 67
IN, Setting IN 39
INIT Page 69
INIT Page, Navigate 69
INIT Page, Settings 70
INIT Page, User Files 113
Insert Mode 56
Install Audio Mixer Driver 115
Install Video Switcher Driver 115
Installing Software 107

J

Jam, Port 44
Jam, Timecode 44, 58
JOB 94
Job, Auto Assembly 95
Job, Display Field 93
Job, EDL Name 15
Job, Quit Application 110
Job, Show Time 94
Job, Skip Recorded 87
JOG 29
Jog Knob 76
Jog, Auto Select 75
Jog, Direct 29, 75
Jog, Sensitivity 29, 72
Jog, Status 17

K

Keep Slow 74, 79
Keep*, Master 34, 73
KEY 65, 67
Key, Add Background 67
Key, Background Source 66
Key, Bus 66
Key, Dialog 65
Key, Downstream 67
Key, DSK 67
Key, Fill Source 66, 67
Key, IN 65, 66, 67
Key, Inhibit 71, 72
Key, Rate 66
Key, Source 66, 67
Key, Transition 63, 65, 66
Key, Transition Area 16
Keyboard Register 40
Keyboard Register, Calculator 42
Keyboard Register, Constants 40
Keyboard Register, Cue 31, 40
Keyboard Register, F/TC 40
Keyboard Register, GPI 40
Keyboard Register, Location 15
Keyboard Register, Move VTR by Amount 31
Keyboard Register, Preset TC Generator 40
Keyboard Register, Reposition Device 40
Keyboard Register, Ripple 91
Keyboard Register, Search 31, 40
Keyboard Register, Time Start 94
Keyboard Register, Transfer 39
Keyboard Register, Trim 41

L

Less VTRs 23
LIFT.INI 103, 111, 112
LIFTZIP 107
Line Pattern 95
LIST 86, 88
List Search 24, 92
Live Switch 51
Live To List 51, 57, 73, 75

LOAD 103, 104
Load EDL 93
Load, EDL 93
Load, User File 77
Longitudinal Timecode 27, 43, 114
LST-SRC 92
LTC 27, 43, 114

M

M/E 63, 70, 71
M/E, Delay 71, 72
M/E, Select 71, 72
Machine Control Drivers 113
MACRO 97
Macro, Clear 98
Macro, Clear All 98
Macro, Clear Last Stroke 98
Macro, Control Panel 97
Macro, Copy 98
Macro, Directory 99
Macro, Dump 99
Macro, Edit 97, 98
Macro, Edit Name 98
Macro, End Edit 98
Macro, Extension 99
Macro, Extension 103
Macro, File File 103
Macro, GPI Inputs 99
Macro, Insert 98
Macro, Load 99
Macro, Loop 97, 100
Macro, Name 97
Macro, Nest 97, 100
Macro, Next F-Key 98
Macro, Overwrite 98
Macro, Perform 99
Macro, Programming 97
Macro, Recall 104
Macro, Record 98
Macro, Save 99
Macro, Save 97, 99
Macro, Save As 99
Macro, Stop 97
Macro, Store 97
Macro, Swap 98
MAN 33, 37, 67
Manual Record 58
Manual Transition 33, 37, 67
Mark IN 34, 39
Mark OUT 34, 39
Marks Table 15
Marks Table, Swap 18
MASTER 18, 19
Master / Slave 33, 34, 35, 45
Master / Slave, Clear 44
Master / Slave, Clear All 44
Master / Slave, Multi-Record 35, 60
Master / Slave, Offset 35
Master / Slave, Separate Groups 35
Master / Slave, Synchronize 35
Master / Slave, Synchronized Play 37
Master Column 35
Match 17, 45, 46, 47, 48
Match, A/V 47, 76
Match, A/V Components 76
Match, Auto 48
Match, Auto Track 76
Match, Channels Tag 76
Match, XE "Match" Extended 48
Match, Position 46
Match, Record 46
Match, Source 48
Match, Take 46
Match, Time 76
MEM 18, 76, 103, 105, 113
Memory Check 71
Missing Reel 86
Mixer, Change Driver 21
MODE 36, 61
Mode Column . 16, 17, 23, 52, 56, 59, 79
Mode, Multi Record 35
Mon Direct 51
Monitor Mode 69, 70
Monitor Switching 51, 70, 72
More Speeds 80
More VTRs 23
Move VTR, Keyboard Register 31
MSTR SYNC 34
Multi-Cam 75
Multiplication 42
Multi-Record 16, 35, 36, 59, 60, 61
MXR Drivers 21

N

NDF 41, 70
New Config File 78
New EDL 94
New File 78

NEXT EDIT #..... 62, 85
No EDL Zeros..... 73
No Zeros..... 73
Non Drop Frame Timecode..... 42
NONAME.EDL..... 94
Non-Drop Frame 70
NOTE 19, 74, 92
NTSC-standard 112

O

Offset Timecode..... 44
Open End 44, 45, 56
OUT..... 41
Out, Clear Times 44
Out, Column 17
Out, Fix Record Out 74, 89
Out, Keyboard Register..... 40
Out, Manually Enter Time..... 39
Out, Mark..... 39
Out, Open End 56
Out, Setting Out..... 39
Out, Trim 41
Out, Undo 39, 45

P

P 62, 80
PAL 70
PAL Standard..... 112
PARKING 113
Pitch Correction..... 80
PLAY 29
Play – (minus) 30
Play + (plus) 30
Play 100% 60, 79
Play, Synchronized..... 29, 37
Port, Assignment..... 16, 23
Port, Jam..... 44
Port, Profile..... 26
Port, Test..... 71
PORTS..... 23
Position Column 16
Position Match..... 46
Postroll 52, 55, 72
Pre-read 62, 80, 114
Pre-read, Auto..... 80
Preroll..... 52, 55, 72
Preset..... 43
Pre-set, Scanners..... 68
Preset, Timecode Generator 40, 43
Preset, Timer..... 43
PREVIEW..... 51, 52
Preview, Abort..... 52
Preview, Assemble Mode..... 52
Preview, Audio EE..... 51
Preview, Aux Bus 51, 70, 72
Preview, BV..... 53
Preview, BVB 53
Preview, Countdown 52
Preview, E-E..... 70
Preview, Effects Only 64, 65
Preview, ESAM2 Mixer..... 51
Preview, Halt 52
Preview, Modes..... 51
Preview, No Roll..... 52
Preview, Postroll..... 52, 72
Preview, Preroll 52, 72
Preview, VB..... 53
Preview, VBV 53
Preview, VV..... 53
Preview, VVV 52
Primary recorder..... 11
Program Out Crosspoint..... 51
Program Play..... 80
Protocol List..... 26
Protocols 26

Q

QC..... 43

R

Rate..... 63
Reaction Time 69, 73
Real-time Edit..... 75
RECALL 18
Recall, Configuration File 104
Recall, Current EDL Edit 86
Recall, EDL File..... 104
Recall, Macro File..... 104
Recall, Specific EDL Edit..... 88
Recall, User File 104
RECORD..... 55
Record Match 46
Record Run 58
Record TAG 46
Record, A/V Components..... 56
Record, Assemble Inhibit..... 71
Record, Assemble Mode 57, 71
Record, Audio Cue Channels..... 56

Record, Bump Out 55
Record, Cue Channels 57
Record, Duration 55
Record, EDL 55
Record, E-E 70
Record, First Edit 57
Record, Gang 61
Record, Hard 58
Record, Inhibit 52
Record, Insert Mode 56
Record, Live Switch 57
Record, Live To List 57
Record, Manual 58
Record, Marks Table Update 55
Record, Master/Slave 60
Record, Multiple Devices 35, 59
Record, Open End 56
Record, Pre-read 62
Record, Reel ID 89
Record, Secondary Recorders 61
Record, Split Edit 58
Record, Terminate 55
Record, Timecode 57
Reel ID 16, 24
Reel ID, Assign 24
Reel ID, Column 16
Reel ID, Constant Registers 49
Reel ID, List Search 24, 92
Reel ID, Missing Reel 86
Reel ID, Search 32
Reel ID, Search EDL 32
Reel ID, Seek Record Reel 75
Reel ID, Skip Missing 94
Reel ID, Swap 24
Reel ID, User Bits 24
Re-entry Crosspoint 51
Reference 21
REF-SYN 17
Rehearse Edit 52
Remove VTRs 23
Renumber EDL 90
Repeat Failed 31, 52, 73, 74
REPLAY 32
Reset, Communications 21, 26
Reset, Entire System 45
Reset, From User Bits 24
Reset, Protocols 26
Reset, System 27, 45
REW 29
Rewind 29
Ripple 87
Ripple, All EDL Sources 91
Ripple, Delete 89
Ripple, EDL 87, 90
Ripple, EDL Insert 86
Ripple, EDL Times 95
Ripple, Renumber 87
Ripple, Replace 87
Ripple, Selected Recorders 91
Ripple, Selected Sources 91
R-Marks 87
Roger Beep 76
ROhS 13
root directory 22, 112
Router Destination Audio 26
Router Destination Video 26, 51
Router Source Audio 26
Router Source Video 26
R-Status 87, 94
R-TAG 46

S

S 17, 49
Save EDL 93
Save Registers 18, 44, 45
Save, EDL 93
Save, User File 77
Scanner, All Off 29
Scanner, Off 29
Search 32, 34, 92
Search for REEL ID 92
Search for Timecode 92
Search Functions 31
Search to Timecode 92
Search, Constant 32
Search, EDL 24
Search, EDL Reel ID 92
Search, EDL Time 31
Search, Ganged Devices 34
Search, In-time 31
Search, Keyboard Register 31, 40
Search, List 24
Search, Out-time 31
Search, Preroll Point 32
Secondary Recorder 36
Secondary Recorders 36, 37, 61
Seek Record Reel 75, 89
Select Jog Automatically 75
Select Multiple Sources 33

Select Sources 33
Semi-colon 16, 42
Sensitivity 29
Sensitivity, Jog 72
Sensitivity, Shuttle 72
Sensitivity, Variable 72
Servo locked 30
Set Duration 39
Set IN 34, 39
Set OUT 34, 39
SHTL 29
Shuttle 29
Shuttle Sensitivity 29, 72
Skip Missing 94
Skip Recorded 87, 94
Slave 34
Slo-mo 79
Soft Numbers 39, 40, 41
Software Installation 107
Software Updates 109
Software Version Number 69
Source Match 48
Source TAG 46
SPEED 79
Speed, Fill 79
Speed, Keep Last 74
Speed, More Speeds 80
Speed, Pitch Correction 80
Speed, Synchronize 74
Speed, TSO 79, 80
SPLIT 27, 45, 58, 59
Split Edit, Clear 59
Split Edit, Offset 59
SRCH 92
Stand-by, All Off 29
Stand-by, Off 29
Status 17
Status, Device 17
Status, Jog 17
Status, Messages 30
STB-OFF 29
Still Beep 76
STOP 29, 115
Stop On Comment 74, 95
Sub-Menu 18, 19
Swap 24
Swap, Edit Screen 18
Swap, From / To 74
Swap, Record Reel 75
Swap, Reel ID 24
Switch PGM 70
Switcher, Change Driver 21
Switcher, Inhibit Control 71, 72
SYNC 48, 49
Sync Window 43
Sync, Tri-level 13, 21
Synchro_Slow 74
Synchronize 35, 37, 43
Synchronized Play 29, 37
SYN-REF 48, 49
System Standard 70
System, Default Settings 27
System, Reference 21
System, Reset 27, 45
System, Specifications 13

T

Tach Pulse Editing 41
TAG 45, 46, 76
TAG, Action 46
TAG, ATN 46
TAG, Extended 46
TAG, Record 46
TAG, Source 46
Tape Timer 43
Tape Timer Editing 41
TBC 18, 25, 27, 101, 115
TBC From EDL 102
TBC, Adjust Levels 101
TBC, Assign 25
TBC, Clear 101
TBC, Dialog 101
TBC, Get From EDL 102
TBC, Get From List 102
TBC, Port Assign 101
TBC, Put To List 101, 102
TBC, Reload Values 101
TBC, Reset after Edit 102
TBC, To EDL 101
TC Calculator 42
This Edit # 62, 85, 86
Timecode 41, 42, 43, 57, 92
Timecode / Frames 40, 41, 63, 64, 65
Timecode Track 57
Timecode, Absent 39
Timecode, Assign 43
Timecode, Auto 43
Timecode, Calculator 42
Timecode, CT Edits 41

Timecode, DF 41
Timecode, F/TC 40
Timecode, Frame Accuracy 43
Timecode, Generator 43, 58
Timecode, Jam 44, 58
Timecode, LTC 27, 43
Timecode, NDF 41
Timecode, NTSC 70
Timecode, Offset 43, 44
Timecode, Preset Generator 40
Timecode, QC 43
Timecode, Record 57
Timecode, Search 92
Timecode, User Bits 43
Timecode, VITC 43
Timer 17
TO-Dblpress 33, 63, 64, 76
Transition 16, 63, 65
Transition TO 33
Transition, Auto E-MEM 68
Transition, Cut 33, 63
Transition, Delay 65
Transition, Dissolve 33, 63
Transition, Key 65, 66
Transition, Manual 33, 37, 67
Transition, Rate 63, 64, 65, 66, 67
Transition, Wipe 33, 64
Tri-level Sync 13, 21
Trim Register 15, 41, 91
Trim, Duration 41
Trim, IN 41
Trim, OUT 41
TSO 79, 80
TSO, Use 80

U

UNDO 39, 40, 45, 86, 88, 91
UNDO In, Out, Duration 39, 40
UNDO, All Masters 45
UNDO, Clear 44
UNDO, Duration 45
UNDO, Edit 45
UNDO, EDL 86, 87, 91, 92
UNDO, IN-Time 45
UNDO, List 92
UNDO, Master 45
UNDO, Open End 45
UNDO, OUT-time 45
UNDO, Save Registers 44, 45
UNDO, Split 45
UNDO, System Reset 27
UNDO, Times 45
Universal Driver 26, 114
Update Software 109
Use TSO 80
User Bits 24, 43
User File 69, 77, 78, 103

V

VAR Sensitivity 29
Variable Sensitivity 72
Vari-Speed 17, 74, 79
VB Preview 53
VBV Preview 53
Vertical Interval Timecode – see VITC 43
Video Black Video Preview 53
Video Monitor 51
Video Pvw Monitor 51
Video Switcher 71
Video Switcher Control 63
Video Switcher Driver 115
Video Switcher, Inhibit Control 71, 72
Video Switcher, M/E Select 71, 72
Video Video Video Preview 52
Video, Crosspoints 25
Video, MXR Switcher Driver 22
VITC 43, 114
VTR, Ready 68
VV Preview 53
VVV Preview 52

W

Wildcard 78, 105
WIPE 16, 33, 63, 64, 66, 116
Wipe Pattern 64, 116
Wipe, Delay 65
Wipe, Dialog 64
Wipe, Pattern 64, 65

X

Xchange, Edit Screen 18
Xchange, Reel ID 24
XCHNGE 18
XPT 25, 26, 51, 72
XTREE 21, 22, 107, 108, 110, 111, 112, 113, 116