

**E.L.C.**

**ENTERTAINMENT LIGHTING CONSOLE**

**OPERATOR'S GUIDE**

This text is written as an operator's guide rather than a manual. Any additions or corrections would be appreciated.

The Entertainment Lighting Console ( E.L.C. ) is a custom designed 96 channel memory console, manufactured by Electronic Theater Controls. It has 24 programmable submasters, 96 channel x 224 dimmer soft patch, tape storage of cues, special effects subroutines and a battery backup system.

The E.L.C. should never be plugged into AC power unless the POWER SWITCH is in the OFF position.

Do not remove the AC power from the console unless the POWER SWITCH is in the OFF position, as doing so will initiate the battery backup auto-save sequence.

The E.L.C. has an auto-save feature in the event of a power failure. If the power is off for over 30 seconds, the battery backup automatically saves what is in memory to tape. For this reason it is best to have a blank or scratch tape in the console when recording a new show. If the show in progress at the time of the power failure is already stored on tape, the tape should be removed to prevent recording of the memory contents onto the tape.

The E.L.C. uses a mini-data type cartridge for remote cue storage. Each tape will hold 5 shows of 200 cues each. The cues may be numbered from 0.1 to 999.9, permitting continuous numbering of cues through all 5 shows if necessary. The tape load process takes about 30-45 seconds to complete. Any information stored in SHOW 5 will take longer to access than SHOWS 1-4 because of the way the cues are stored on the tape.

In the operating instructions of this guide, most commands will be related to a particular display format. For example, when an operation is being done "on stage", the E.L.C. must be in STAGE display. When an operation is being done "in blind", the E.L.C. must be in BLIND display.

## MONITORS

There is a separate tandem-mount monitor containing 2 CRT screens. The right screen is the CHANNEL DISPLAY monitor, and the left screen is the STATUS DISPLAY monitor.

### CHANNEL DISPLAY MONITOR

The CHANNEL DISPLAY monitor displays information called up from the DISPLAY FUNCTIONS keypad. Commands entered from the CUE & CHANNEL FUNCTIONS keypad are shown on this monitor, including channel level data, cue number and timing data, channel/dimmer assignments, subroutine set-up data, fader status, channelscan data and other program messages.

This monitor may be used to display on-stage information during playback, or to preview or blind record other cues without affecting the stage.

### STATUS DISPLAY MONITOR

The STATUS DISPLAY monitor displays cue sheet and playback data. When the console is in SEQUENCE mode, up to 10 lines of cues are displayed with the cue number and timing information. The current cue and the sequence of next cues are displayed at the top of the screen. Running cues and cues on stage are shown in boxes under the appropriate manual or automatic fader heading. The levels of all 24 submasters are displayed across the bottom of the screen.

## FADERS

There are 3 faders on the E.L.C., 2 of which are automatic split faders, providing separate rise and decay times for split fading. The third fader is a manual split-dipless pair. Any cue may be programmed to be manual, or if programmed to be automatic, may be taken over manually by touching the fader behind the lit LED's. Moving your finger into the unlit portion will cause the cue to be completed manually. Subroutine cues must be run on an automatic fader.

## SUBMASTERS

There are 24 submasters on the E.L.C.. Any channel, or channels, as well as cues may be assigned to a submaster thru the CHANNEL FUNCTIONS keypad, in the FADER display mode. The submaster may then be used to proportionally modify the levels of assigned channels on stage. Each submaster has a bump button located directly below the fader, which causes the fader to be raised to "full" while the button is depressed. Both rise and decay times may be programmed into the bump buttons.

## DISPLAY FUNCTIONS KEYPAD

This keypad provides the means for bringing up the desired display on the RECORD monitor for previewing cues, fader status, channel/dimmer assignments, and other functions.

## STAGE

Displays the levels of the channels on stage. These levels may be recorded into cues.

## BLIND

Used to record, preview, or modify cues without affecting the stage.

## FADER

Displays the contents of submasters and the status of manual and auto faders. Used to record information into submasters.

## MANUAL

Displays the levels of channels on stage when a manual console is hooked up in parallel with the E.L.C.. These levels may be recorded into cues.

## CHANNELSCAN

Displays the levels of a selected channel in blocks of 50 cues. Levels may be modified and recorded into memory.

## SOFTPATCH

Used to assign dimmers to channels.

## PRINT

Causes the contents of the CHANNEL DISPLAY monitor to be sent to the printer.

Depressing the key on the DISPLAY keypad corresponding to any one of the above will bring that display onto the CHANNEL DISPLAY monitor.

## CHANNEL FUNCTIONS, CUE FUNCTIONS, NUMERIC KEYPADS

The keys in the CHANNEL section are used when recording channel levels into cues and submasters. The keys in the CUE section provide for special commands and timing information. The NUMERIC section is used with both CHANNEL & CUE sections for data entry and also contains the ENTER key. All commands are ended with an ENTER. When necessary prompting information is required it will be displayed on the CHANNEL DISPLAY monitor.

- SELECT CUE- In STAGE mode; selects the next cue for execution or, selects the cue number when recording.  
In BLIND mode; selects a cue to preview or, selects a cue number when recording.
- CLEAR CUE- Clears the contents of a cue or submaster.
- DUP (licate)- Duplicates the contents of cues and submasters.
- SEQ (uence)- Auto-loads cues to be run sequentially. This is an alternate action key, push ON, push OFF.
- SUBROUTINE- Opens the SUBROUTINE FUNCTIONS keypad for programming of subroutine cues.
- FADE TYPE- Allows a cue to be designated any of the following:  
AUTO-CROSSFADE (AUTO-X)- All channel levels in cue A are replaced by channel levels in cue B when cue B is crossfaded.  
AUTO-PLUSFADE (AUTO-P)- Only the channel levels in cue B which are non-zero replace those in cue A when cue B is plusfaded.  
AUTO-MINUSFADE (AUTO-M)- Any channels which are non-zero in cue B are faded to zero when cue B is minus-faded.  
MANUAL- Indicates that a cue should be loaded on a manual fader. If a cue has a manual assignment and is loaded into a timed fader, a crossfade will be executed.
- RISE TIME- The programmed time in which all up-fading channels in a cue will be faded on an automatic timed fader. Times from 0.1 to 59.9 seconds/tenths or 001:00 to 991:59 minutes/seconds may be entered.
- DECAY TIME- The programmed time in which all down-fading channels in a cue will be faded on an automatic timed fader. Times from 0.1 to 59.9 seconds/tenths or 001:00 to 991:59 minutes/seconds may be entered.
- WRITE BY CHAN (nel)- allows selected channels to be altered to a level selected by the LEVEL BAR or the AT keys. Groups of channels may be selected using the AND and THRU keys. All selected channels appear on the CHANNEL DISPLAY monitor in reverse video, and will be set to the same level, regardless of their current levels.
- WRITE BY CUE- Allows a previously recorded cue to be used as a base

for a new cue. When the cue to write by is selected on the keypad, all non-zero channels in that cue become selected on the CHANNEL DISPLAY monitor in reverse video. By using the AT key or the LEVEL BAR, the channels are altered proportionally. When the desired levels are reached, pressing the ENTER key will deselect the channels.

NOTE: Any levels written directly on stage, by using the WRITE BY CHANNEL and WRITE BY CUE functions, become "CAPTURED CHANNELS", which means that those channels will remain at those levels, regardless of the pile-on result, until cancelled by the RELEASE key. However, these channels are affected by the GRAND MASTER and the BLACKOUT key.

AT- Allows the desired level to be entered digitally from the keypad. No changes are visible on the stage until the ENTER key is pressed.

AT FULL- Automatically enters a level of 100% from the keypad. When ENTER is pressed, all selected channels are set 100% ( FF ).

ENTER- Used in conjunction with other keys to enter data into the console. All commands end with an ENTER.

CLEAR ENTRY- Zeros the contents of the display windows so new or correct information may be entered.

RELEASE- Clears the stage of all captured channels.

LEVEL BAR- Touching the LEVEL BAR causes all selected channels to be set to the LEVEL BAR value, and can be further altered by running a finger up or down the LEVEL BAR. These levels go out to the stage immediately. When the desired level is reached, pressing ENTER will deselect all channels.

#### SUBROUTINE FUNCTIONS KEYPAD

This keypad is used in programming subroutine cues. The following functions are available:

CUE SELECT- Specifies a memory cue to be faded. Cue number, fade type, intensity, rise and decay times may be entered.

DELAY- Pause, during execution, before the next line is to begin.

LOOP- Execution jumps to line 1, then proceeds through the sequence of cues.

REVERSE- Execution goes backward to line 1, then proceeds through the sequence of cues.

UP ARROW- Moves the line cursor (\*) up one line.

DOWN ARROW- Moves the line cursor (\*) down one line.

( ENTER )- Moves the item cursor (box) one item to the right.

CLEAR SYSTEM- Clears the contents of memory, resets softpatch to turn-on status, and clears all output faders.

FROM TAPE- Loads prerecorded cues and patch from tape storage to memory.  
TO TAPE- Loads cues and patch from memory to tape storage.  
RECORD- Records cues into the console's memory.  
BLACKOUT- Zeros all levels on stage. The levels will remain on the CHANNEL DISPLAY monitor, and may be altered during the blackout. The altered levels will go out on the stage when the BLACKOUT key is pressed again.

GRAND MASTER- Proportionally alters all non-zero channels. When taken to 0, the CHANNEL DISPLAY monitor shows all channels at a 0 level. If the GRAND MASTER is off of 100% when recording a cue from STAGE, it will affect the level of channels recorded into the cue.

SOFTPATCH - Pressing the SOFTPATCH key changes the CHANNEL DISPLAY monitor to show channel/dimmer assignments.

CLEARING THE PATCH - patches all 224 dimmers to channel 0.

1 THRU 224  
\* ENTER  
0  
\* ENTER

ASSIGNING DIMMERS - patches selected dimmers into the specified channel.

Dimmer # (AND, THRU)  
\* ENTER  
Channel #  
\* ENTER

Repeat this routine until all desired channels are patched.

NOTE: 1. A dimmer may not be patched to more than one (1) channel.  
2. Pressing the SOFTPATCH key repeatedly will cause the CHANNEL DISPLAY monitor to page thru the channel listing, returning to channel 1 after channel 96.

CHANNEL SCAN - Pressing the CHANNEL SCAN key causes the CHANNEL DISPLAY monitor to show a selected channel its levels in assigned cues.

SELECTING A CHANNEL

\* CLEAR ENTRY  
Channel #

MODIFYING A CUE - DIGITALLY

\* SELECT CUE  
Cue # ( AND, THRU )  
\* AT  
Intensity  
\* ENTER

Repeat as necessary until all desired cues are modified. The cues must now be re-recorded.

\* RECORD  
\* ENTER

#### MODIFYING A CUE - LEVEL PAD

\* SELECT CUE  
Cue # ( AND, THRU )  
Touch LEVEL PAD at desired intensity  
\* ENTER

Repeat as necessary until all desired cues are modified. The cues must now be re-recorded.

\* RECORD  
\* ENTER

NOTE: All cues selected using AND and THRU must be set to the same levels, they are not changed proportionally.

#### DUPLICATING FROM A CUE

\* BLIND  
\* SELECT CUE  
Cue # (This sets up the new cue for duplication)  
\* DUPLICATE  
1 (Duplicate from an existing cue)  
\* ENTER  
Cue # (The number of the cue to duplicate from)  
\* ENTER  
Cue # (The number of the cue to duplicate to)  
\* ENTER

NOTE: 1. Duplicating from a cue may be done in BLIND mode only.  
2. A cue may only be duplicated into an existing cue, therefore it is necessary to set up a cue # to record into.  
3. It is not necessary to press the RECORD key to duplicate a cue from cue, this is accomplished automatically by the duplication routine.

#### DUPLICATING FROM A SUBMASTER

\* STAGE or \* BLIND  
\* DUPLICATE  
2 (Duplicate from a submaster)  
\* ENTER  
Submaster # (The submaster number to duplicate from)  
\* ENTER  
Cue # (The number of the cue to duplicate to)  
\* ENTER

NOTE: 1. Duplicating from a submaster may be done in either STAGE or BLIND modes.  
2. It is not necessary to set up a cue in advance to duplicate from a submaster.  
3. It is not necessary to press the RECORD key to duplicate a cue from a submaster, this is accomplished automatically by the duplication routine.

#### SUBMASTERS

## SELECTING A SUBMASTER

- \* FADER
- \* CLEAR ENTRY
- Fader # ( 1-24 )

## RECORDING CHANNELS INTO A SUBMASTER

- \* WRITE BY CHANNEL
- Channel # ( AND, THRU )
- \* AT -----or-----Touch LEVEL PAD at desired intensity
- Intensity \* ENTER
- \* ENTER

Repeat until all desired channels are entered in to the submaster.  
At this time RISE & DECAY times may be programmed for the bump buttons.

- \* RISE TIME
- Time value
- \* ENTER
  
- \* DECAY TIME
- Time value
- \* ENTER

NOTE: If RISE and DECAY times are not specified, they will both default to 0 seconds.

- \* RECORD
- \* ENTER

## RECORDING A CUE INTO A SUBMASTER

- \* WRITE BY CUE
- Cue #
- \* AT -----or-----Touch LEVEL PAD at desired intensity
- Intensity \* ENTER
- \* ENTER

At this time RISE & DECAY times may be programmed for the bump buttons.

- \* RISE TIME
- Time value
- \* ENTER
  
- \* DECAY TIME
- Time value
- \* ENTER

NOTE: If RISE and DECAY times are not specified, they will default to 0 seconds each.

- \* RECORD
- \* ENTER

## CLEARING THE CONTENTS OF A SUBMASTER

- \* FADER
- \* CLEAR ENTRY
- Fader #
- \* CLEAR CUE ( "NOT RECORDED" will flash & contents will be zeroed )
- \* RECORD ( There is'nt a screen prompt for this step! BEWARE! )
- \* ENTER



RECORDING AND MODIFYING CUES IN BLIND - Pressing the BLIND key causes the CHANNEL DISPLAY monitor to show the channel status in selected cues.

RECORDING A CUE -  
monitor to show channel status in selected cues.

Cue # ( The number of the cue to be created )  
\* WRITE BY CHANNEL  
Channel # ( AND, THRU )  
\* AT -----or----- Touch LEVEL BAR at desired intensity.  
Intensity \* ENTER  
\* ENTER

Repeat as necessary until all selected channels are at desired levels.  
At this time RISE & DECAY times may be entered.

\* RISE TIME  
Time value  
\* ENTER

\* DECAY TIME  
Time value  
\* ENTER

NOTE: 1. If RISE and DECAY times are not specified, they will default to the values of the preceding cue.  
2. If this is the first cue being recorded, the RISE and DECAY times will default to 5 seconds each.

MODIFYING CHANNELS IN AN EXISTING CUE

\* BLIND  
Cue # ( The cue to be modified )  
\* WRITE BY CHANNEL  
Channel #  
\* AT -----or----- Touch LEVEL PAD at desired intensity.  
Intensity \* ENTER  
\* ENTER

Repeat until all desired channels are modified.

\* RECORD  
\* ENTER

MODIFYING TIMES IN AN EXISTING CUE

\* BLIND  
Cue # ( The cue to be modified )  
  
\* RISE TIME  
Time value  
\* ENTER  
\* DECAY TIME  
Time value  
\* ENTER

\* RECORD  
\* ENTER

DELETING A CUE

\* BLIND  
Cue # ( The cue to be deleted )  
\* CLEAR CUE  
\* RECORD

NOTE: 1. The CHANNEL DISPLAY monitor will advance to the next recorded cue.

RECORDING A CUE IN STAGE MODE - Pressing the STAGE key causes the CHANNEL DISPLAY monitor to show the active channel status.

\* STAGE  
Channel # ( AND, THRU )  
\* AT -----or----- Touch LEVEL PAD at desired intensity  
Intensity \* ENTER  
\* ENTER

Repeat as necessary until all selected channels are at desired levels. At this point RISE & DECAY times may be entered.

\* RISE TIME  
Time value  
\* ENTER

\* DECAY TIME  
Time value  
\* ENTER

NOTE: 1. If RISE and DECAY times are not specified, they will default to those of the preceeding cue.  
2. If this is the first cue to be recorded, the RISE & DECAY times will default to 5 seconds each.

\* SELECT CUE  
Cue # ( The cue number that you wish this stage picture to be )

\* RECORD  
\* ENTER

NOTE: 1. All channels recorded in the cue are now "CAPTURED CHANNELS", and will remain at these levels until the RELEASE key is pressed, zeroing the output of all channels.  
2. If this cue is going to be used as a base for the next cue, channels may now be called up and modified as in recording a cue. The new cue number should be selected before pressing the RECORD key.

STAGE      BLIND      FADER      MANUAL      CHANNEL SCAN      SOFT PATCH      PRINT

DISPLAY FUNCTIONS

CLEAR SYSTEM      FROM TAPE

RECORD      TO TAPE

CUE FUNCTIONS

SELECT

CUE

CHANNEL FUNCTIONS

WRITE BY

CHAN      CUE

CLEAR CUE      SUB ROUTINE

DUP      FADE TYPE

SEQ      RISE TIME

DECAY TIME

7      8      9

4      5      6

1      2      3

0      .

-      +

THRU      AT

AND      AT FULL

ENTER      CLEAR ENTRY

RELEASE

LEVEL

100

90

80

70

60

50

40

30

20

10

0

SUBROUTINE FUNCTIONS

DELETE LINE

MENU

REVERSE

LOOP

DELAY

CUE SELECT

↑      ↓

BLACK OUT

10

9

8

7

6

5

4

3

2

1

0

GRAND MASTER

4 9 5 7

10- 9- 8- 7- 6- 5- 4- 3- 2- 1- 0-

1 2 3 4 5 6 7 8 9 10 11 12

10- 9- 8- 7- 6- 5- 4- 3- 2- 1- 0-

13 14 15 16 17 18 19 20 21 22 23 24

SUBMASTERS

CROSS FADERS

X 10- 9- 8- 7- 6- 5- 4- 3- 2- 1- 0-

Y 10- 9- 8- 7- 6- 5- 4- 3- 2- 1- 0-

CLEAR LOAD CLEAR LOAD

AUTO FADERS

A 100 90 80 70 60 50 40 30 20 10 0

B 100 90 80 70 60 50 40 30 20 10 0

C 100 90 80 70 60 50 40 30 20 10 0

D 100 90 80 70 60 50 40 30 20 10 0

CLEAR MINUS FADE CLEAR MINUS FADE

GO HOLD GO HOLD

## INTRODUCTION

These instructions are intended to be used as a beginner's guide to the lighting board, and are in no way complete. In general, the message that appears on the CRT after a button press indicates what buttons should be pressed to achieve a certain result. A mode can usually be aborted by pressing another button. Note that the CLEAR SYSTEM, TO TAPE, and FROM TAPE buttons can do the most damage if used indiscriminately.

### I. DISPLAY MODES

#### STAGE-

Shows the actual levels going out to the stage.

The GRAND MASTER pot may be used to proportionally raise or lower all non-zero channels.

The BLACKOUT button may be used to zero all levels on stage as long as the BLACKOUT button is on, although the levels will remain on the CRT display. Levels may be altered during a blackout, and will go out to the stage when the BLACKOUT button is turned off.

Any levels written directly on stage, by using the WRITE BY CHANNEL or WRITE BY CUE functions, become "CAPTURED CHANNELS", which means that those channels will remain at those levels, regardless of the pile-on result, until cancelled by the RELEASE button. However, these channels are affected by the GRAND MASTER pot and the BLACKOUT button.

#### BLIND-

Displays levels recorded in one of 200 cues, and allows blind editing in each cue.

The SELECT CUE button allows a cue number to be selected for viewing and editing. Any number from 0.9 to 999.9 may be entered from the keypad digits. Pressing the + or - buttons while in SELECT CUE mode will step through all the recorded cues.

Pressing the SUBROUTINE button changes the format of the display to allow editing of multi-part cues.

#### FADER-

Selecting fader # 1-24 displays one of 24 submasters, and allows editing of each submaster.

Faders # 25-27 dynamically displays the levels which are currently on the split-dipless crossfaders X and Y, the AB automatic timed fader, and CD automatic timed fader, respectively. Any subroutine loaded into a timed fader causes the display to change to the subroutine format.

#### MANUAL-

Readback mode displays the channel levels from the manual backup lighting board. All dimmer outputs from the computer console are blacked out while in MANUAL mode.

Pressing the RECORD button while in manual mode will record the readback levels into the cue which is currently selected on the SELECT CUE display.

#### CHANNELSCAN-

Each page of the channelscan displays the recorded level of a specific channel in up to 50 cues. Pressing the CHANNELSCAN button again will page through all recorded cues.

The channel number to scan may be selected upon entering CHANNELSCAN mode, or after a channelscan RECORD has been done.

Levels may be modified in a cue or group of cues. This is done by pressing the SELECT CUE button, and entering the cues to be changed (e.g. Cues 1 THRU 5.5), then selecting the desired level. The RECORD button is necessary to record the new levels into the cues.

#### SOFTPATCH-

Displays the assignment of 224 dimmers to 96 channels. Unless modified, the softpatch defaults to a sequential assignment of dimmers. Pressing the SOFTPATCH button again will page through all 96 channels.

Dimmers may be deleted from the softpatch by entering a zero (0) instead of the channel number.

Pressing the RECORD button is not necessary in this mode.

## II. RECORDING CUES

#### STAGE-

A cue may be assembled on the stage and then recorded into a selected memory cue. The channel levels will appear on the stage during the process. Any levels on the stage when the RECORD button is pressed will be recorded into the cue, whether they result from submasters, faders, or captured channels. If this is not desirable, the manual pots should be put at zero, and the faders cleared. Captured channels should be released before starting.

The WRITE BY CHANNEL button allows selected channels to be altered to a level selected by the level bar or by the AT buttons. Groups of channels may be selected at once using the AND and THRU buttons. All selected channels appear on the CRT in reverse video, and will be set to the same level, regardless of their current levels.

Touching the LEVEL BAR causes all selected channels to be set to the level bar value, and can be further altered by running the LEVEL BAR up and down. These levels go out to the stage immediately. When the desired level is reached, pressing ENTER will deselect all channels.

Pressing the AT button allows the desired level to be entered digitally on the keypad. No changes are visible on the stage until the ENTER button is pressed.

Pressing the AT FULL button automatically enters a "100" on the

keypad, and when ENTER is pressed, all selected channels are set to 100%.

The WRITE BY CUE button allows a previously recorded cue to serve as the base of a new cue. When the cue to write by is selected on the keypad, all non-zero channels in that cue become selected on the stage display in reverse video. By using the AT buttons or the LEVEL BAR, as in write by channel mode, the channels are proportionally altered, so that the color balance of the original cue is maintained. When the desired levels are reached, pressing ENTER will deselect the channels.

The rise time of a cue is the programmed time in which the cue will be faded in on the automatic timed faders. When the RISE TIME button is pressed, the time can be entered on the keypad. 0.1 to 59.9 seconds/tenths or 001:00 to 991:59 minutes/seconds may be entered.

The DECAY TIME button is used in the same way as the RISE TIME button except the decay time controls the time in which a cue is faded out on the automatic timed fader.

Pressing the FADE TYPE button allows a cue to be designated as a crossfade (all channel levels in cue A are replaced by channel levels in cue B when B is crossfaded), plusfade (only the channels in B which are non-zero replace those channels in A when cue B is plusfaded), minusfade (any channels which are non-zero in B are faded to zero when b is minusfaded), or manual, which indicates that a cue should be loaded on a manual fader. If a cue has a manual assignment and is loaded into a timed fader, a crossfade will be done.

When the cue is completed, the RECORD button followed by the ENTER button causes the information to be recorded into the cue currently selected on the CUE SELECT display. When the recording is completed, the RELEASE button will clear the stage of all captured channels.

#### BLIND-

Composing a cue in blind is the same as composing one in stage mode except that the channel levels do not appear on stage.

Subroutine cues may only be written in blind mode. A subroutine may have up to 24 lines, and it takes the place of two memory cues, so that the CUES LEFT display decreases by two when a new subroutine is recorded. The display may be scrolled by pressing the UP CURSOR and DOWN CURSOR buttons.

The lines which may be entered in a subroutine include:

CUE SELECT- specifies a memory cue to be faded.  
DELAY- pause during execution before next line is to begin.  
LOOP- execution goes back to line 1.  
REVERSE- execution goes backwards to line 1, then proceeds.

These commands are menu driven (message indicates what must be entered on the keypad), and the ENTER button must be pressed. To modify a line, move the cursor ("\*") to the line, and, if necessary, press ENTER to move the side-to-side cursor (box) to the entry which

needs modification. Then re-enter the correct information. Press RECORD when the subroutine is completed.

### III. RECORDING SUBMASTERS

Submasters must be recorded from FADER mode. Channel levels are entered with the WRITE BY CHANNEL or the WRITE BY CUE buttons as in the STAGE mode. However, FADER mode is a blind display until the RECORD button is pressed. Then, the levels, based on the position of the submaster pot, goes into the pile-on result. Whenever there are non-zero channel levels recorded in a submaster, the submaster bump button LED is lit.

The submaster bump buttons cause the submaster to be raised to "full" in a programmed amount of time, as long as the bump button is depressed. When the button is released the submaster returns to its pot position in another programmed time. The submaster RISE TIME button allows selection of the former time, and the DECAY TIME allows selection of the latter. When these buttons are pressed, times from 0.1 to 59.9 seconds/tenths, or 001:00 to 021:00 minutes/seconds may be entered. If no times are entered, they default to 5 seconds each.

### IV. EXECUTING CUES

The SEQ (Sequence) button determines the order of execution of the cues. When it is turned on, the cue which is currently selected on the CUE SELECT display becomes the NEXT CUE, as indicated on the lower left-hand corner of the right CRT. When a cue is loaded onto the stage, the NEXT CUE advances to the next recorded cue in the cue list.

In STAGE display mode, if the SEQ button is on, pressing the CUE SELECT button and selecting any recorded cue causes this cue to become the NEXT CUE, and the sequence continues from that point in the cue list.

If the SEQ button is off, the cue which is currently selected on the CUE SELECT display will be loaded. In this mode, cues may be executed in any order, or repeated, as necessary.

To load a cue into the split-dipless crossfader, press the LOAD X or LOAD Y button. The levels are then adjusted with the manual pots.

To load a cue into a timed fader, press the AB GO or the CD GO button and the fade will proceed as previously programmed. The rise time can be speeded up by running the A (or C) fader up, and the decay time can be speeded up by running the B (or D) fader down. Fade progress can be stopped by holding a finger on the lit portion of the fader (A or C for rise, B or D for decay). Fade progress can be completed slowly by slowly moving a finger into the unlit portion of the bar graph.

A fade, both rise and decay parts, can be halted by pressing the AB HOLD or CD HOLD buttons, which will blink to indicate that the fade is halted. Pressing the GO button will continue the fade, and



pressing the HOLD button again will cancel the fade, leaving the levels as they were when the fade was halted.

When a fade is completed, the bar graph pattern will return to its normal display and no changes may be made.

A subroutine is loaded and halted in the same way as a timed fade, except the bar graph controls are different. The A (or C) fader becomes a master over the entire subroutine, so that the intensity on stage can be modified, regardless of which line is providing the levels. The B (or D) fader adjusts the rate of the subroutine. The bar graph can be set at: STOP, HALF-SPEED, NORMAL, DOUBLE SPEED, or INSTANTANEOUS. The default rate is NORMAL.

Pressing the MINUS AB (or MINUS CD) button causes all channel levels in the fader to be faded to zero in the period of time specified by the decay time.

Any fader may be cleared by pressing the CLEAR button associated with that fader. All channel levels caused by that fader will be zeroed.

## V. OTHER FUNCTIONS

### CLEAR ENTRY-

Unless otherwise specified by CRT message, this button will zero the keypad.

### CLEAR CUE-

May be used in BLIND or FADER mode. This button press clears all levels on the CRT. No changes are made in the recorded cues or the submasters until the RECORD button is pressed.

### DUP-

Cues may be duplicated, or a submaster may be duplicated into a cue by pressing the DUP button. The ENTER button is required when specifying the cue or submaster numbers.

### TO TAPE-

Pressing the TO TAPE button causes the tape directory to be read and displayed. The show number to be recorded must be entered on the keypad, and ENTER pressed. Any information already on the tape for that show number will be re-recorded. All fades are cancelled when a tape routine is initiated.

### FROM TAPE-

Pressing the FROM TAPE button also reads and displays the directory, to allow a show number to be selected. Attempting to load an unrecorded show cannot be done and will give a tape error message. All information on the computer console will be lost when a FROM TAPE is initiated, and all fades are cancelled.

### CLEAR SYSTEM-

Pressing this button will restore the computer console to its power-up condition. All cues and submasters are erased, the soft-patch returns to its default assignments, and the stage is black.

## PRINT-

The PRINT button causes the contents of the right-hand CRT to be printed. In STAGE or MANUAL mode only one page is printed. In CHANNELSCAN or SOFTPATCH mode all pages are printed. In BLIND or SUBMASTER mode one page is printed, unless a last cue or submaster is specified, and ENTER is pressed. Changing modes while a PRINT is in progress will cancel the print.

## VI. EXAMPLES

### 1. RECORDING A CUE

```
STAGE or BLIND
SELECT CUE
1
WRITE BY CHANNEL
1 THRU 10
AT
50
ENTER
WRITE BY CHANNEL
11 AND 13 THRU 20
AT FULL
ENTER
RECORD
ENTER
```

Now CUE 1 is recorded, and contains channels 1-10 at 50% and channels 11 & 13-20 at 100%. The rise and decay times default to the previously entered times, and the fade type defaults to crassfade.

### 2. RECORDING A SUBMASTER

```
FADER
2
WRITE BY CUE
1
LEVEL BAR TO 50%
ENTER
RECORD
ENTER
```

Now SUBMASTER 2 is recorded, and contains channels 1-10 at 25%, and channels 11 & 13-20 at 50% (50% of the levels recorded in CUE 1).

### 3. RECORDING A SUBROUTINE

```
BLIND
SUBROUTINE

CUE SELECT
1 (crossfade)
ENTER
1 (cue 1)
ENTER
75 (fade to 75%)
```

```
ENTER
10 (rise time)
ENTER
10 (decay time)
ENTER
```

```
DELAY
15
ENTER
```

```
CUE SELECT
1 (crossfade)
ENTER
1 (cue 1)
ENTER
25 (fade to 25%)
ENTER
10 (rise time)
ENTER
10 (decay time)
ENTER
```

```
DELAY
13
ENTER
```

```
LOOP
3
ENTER
```

```
RECORD
ENTER
```

The effect of this subroutine will be:

- Crossfade to CUE 1 at 75% in 10 seconds
- Delay 5 seconds
- Crossfade to CUE 1 at 25% in 10 seconds
- Delay 3 seconds
- Repeat this pattern 3 times

#### 4. MODIFYING CHANNELS IN CHANNELSCAN

```
CHANNELSCAN
5
SELECT CUE

1 THRU 5
AT
25
ENTER
RECORD
ENTER
```

Now channel 5 in cues 1-5 will be at 25%.

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DISPLAY FUNCTIONS

CLEAR SYSTEM      FROM TAPE

RECORD      TO TAPE

CUE FUNCTIONS

SELECT

CUE

CLEAR CUE      SUB ROUTINE      FADE TYPE      RISE TIME      DECAY TIME

DUP      SEQ

CHANNEL FUNCTIONS

WRITE BY

CHAN      CUE

THRU      AT

AND      AT FULL

ENTER

CLEAR ENTRY      RELEASE

7      8      9

4      5      6

1      2      3

0      .

-      +

LEVEL

100 — 90 — 80 — 70 — 60 — 50 — 40 — 30 — 20 — 10 — 0

SUBROUTINE FUNCTIONS

DELETE LINE      MENU      REVERSE      LOOP      DELAY      CUE SELECT

↑      ↓

BLACK OUT

10 — 9 — 8 — 7 — 6 — 5 — 4 — 3 — 2 — 1 — 0 — GRAND MASTER

49575

**CROSS FADERS**

**X**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**Y**

0— 1— 2— 3— 4— 5— 6— 7— 8— 9— 10—

**AUTO FADERS**

**A**

100 90 80 70 60 50 40 30 20 10 0

**B**

100 90 80 70 60 50 40 30 20 10 0

**C**

100 90 80 70 60 50 40 30 20 10 0

**D**

100 90 80 70 60 50 40 30 20 10 0

**1**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**2**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**3**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**4**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**5**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**6**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**7**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**8**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**9**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**10**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**11**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**12**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**SUBMASTERS**

**13**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**14**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**15**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**16**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**17**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**18**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**19**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**20**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**21**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**22**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**23**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—

**24**

10— 9— 8— 7— 6— 5— 4— 3— 2— 1— 0—