Lightboard™ M

Operations Manual

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Strand Lighting

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Chapter 1

Introduction and Assistance

This manual provides information on the operating procedures for LightBoard M systems with software versions 7.0 and above. Some commands shown in this manual may not be available on software versions prior to 7.0.

Manual Organization

This manual contains 9 chapters sections as shown below, plus an index.

Introduction (chapter 1) - tells you about the organization of this manual and the definitions and conventions used. It also tells you how to get technical help if necessary.

Operational Features (chapter 2) - gives an overview of the operational features of LightBoard M.

Hardware Description (chapter 3) - gives and overview of the hardware and how it works together.

Console Layout (chapter 4) - shows you the main elements of the console, and what they do.

Installation (chapter 5) - tells you about the installation requirements for the console and its peripherals. This chapter shows pinouts for externally accessible connectors, cable types and lengths, and (where applicable) setup information.

Basic Trouble-shooting (chapter 6) - tessl you how to begin trouble-shooting if you have problems with the system. Since actual internal repair of system components is beyond the scope of this manual, this chapter shows only the basic steps you can take without having to replace parts, and before you call Strand Lighting.

Periodic Maintenance (chapter 7) - lists the steps which should be taken to keep the system running at its best.

Reference (chapter 8) - shows the commands and actions possible with the LightBoard M control console. This chapter is organized alphabetically by display name for easy reference, and describes the function of every key.

Tutorial (chapter 9) - is a step by step learning session to familiarize you with the operation of LightBoard M.

Definitions

This manual uses the following definitions to avoid confusion:

Circuit Connection device and wiring for powering a lighting fixture from a dimmer.

Dimmer Device controlling power to a lighting fixture. Two lights on the same dimmer cannot be separately controlled.

Channel Device controlling a dimmer or group of dimmers. Historically, there is a physical controller (such as a slider) for each channel. On most current control systems, channels are numbers accessed by a numeric keypad. Each channel can control multiple dimmers.

Patch Historically, the process of physically connecting circuits to dimmers. Now usually refers to electronic assignment of dimmers to channels. "Patch" does not refer to assignment of channels to cues or submasters.

Preset A pre-defined setup of intensities for a set of channels, stored in memory for later replay.

Memory Storage location for preset information.

Cue The process of recalling a preset from its memory location and putting the result on stage.

Preset, Memory, and Cue are often used interchangeably.

Submaster A controller (usually a linear slider controller) which allows manual control of cues and/or channels.

Independent In LightBoard M, channels set by the scroller or keypad in Stage Mode remain independent on stage at their last level until the operator restores them to fader/submaster control. Restore independent channels by matching the channel level with the scroller or keypad, or by using a special restore command. Mode Display shows independent channel numbers in red video.

Level Source A Fader or controller which contributes to the channel level on stage. In LightBoard M, level sources are Faders A, B, X, FX1, and FX2, the submasters, and channels on independent. For channels not on independent, channel level is the highest reading from sources. For channels on independent, channel level is the level set with scroller or keyboard.

Fade A gradual change in stage levels from one set of intensities ("look") to another.

Up-fade The part of a fade involving only channels which are increasing in level.

Down-fade The part of a fade involving only channels which are decreasing in level.

Crossfade A fade which contains both an up-fade and a down-fade. Also may refer to any fade where the levels of one cue are replaced by the levels of another cue.

Bump An instantaneous change in stage levels from one set of intensities ("look") to another.

Conventions

LightBoard M shows channels status information by the color used to display channel information.

In the *Stage* display, colors show the level source:

- Yellow channels take their level information from Fader X.
- Green channels take their level information from Fader A/B.
- Cyan channels take their level information from Submasters or Bump Buttons.
- Magenta channels take their level information from Fader FX1 or FX2.
- Red channels are Independent channels.

In the *Preview* display, colors show the relationship of the current channel level to the last cue level:

- Yellow channel levels are higher than the last cue.
- Green channel levels are lower than the last cue.
- Cyan channels are unchanged from the last cue.

In the *Submaster* display, colors show the submaster level source:

- Yellow 0 shows submasters with channel assignments only.
- Green # shows channels assigned by cue
- Yellow # shows channels modified after assignment by cue.

LightBoard M shows up to 96 channels on the screen at one time. If there are more channels in the system you can use NEXT or LAST.

The following additional conventions are used in this manual.

CUE shows the actual push-button labelled "CUE."

shows a rocker switch. The black side of the rocker switch shows the portion which has been pushed down (e.g. the SOLO/BUMP/OFF switch is pushed to "SOLO").

FADER A/B (small caps bold text) refers to a named control such as a fader.

> *Throughout this text,* **FADER A/B** *refers to the combined fader. Where fader handle movement is shown,* **FADER A/B** *refers to movement of both handles together.* **FADER A** *or* **FADER B** *refers to the respective half of* **FADER A/B**, *and to movement of only one fader handle.*

[channel list] (text in square brackets) refers to something you must enter as a series of keystrokes - in this case on the numeric keyboard. The following are used in command line definitions:

[#] = A number entered on the Numeric Keypad
[channel list] = A channel or list of channels entered on the Numeric Keypad.
[dimmer list] = A dimmer or list of dimmers entered on the Numeric Keypad

GM - FULL shows actual text appearing on screen. This is shown as reverse video (white lettering on black) for clarity on the printed page, regardless of the actual video status on screen.

ON (all capital text) shows the status of a function or switch, as in "Turn the switch ON."

Live (normal text with first letter capitalized) shows the name of a function or mode of operation as in "Live mode" or "Group function."

Stage (italic text with first letter capitalized) shows named items in which the name appears on screen, as in "*Patch* display."

Names of chapters are also shown in italics for reference.

Technical Assistance

LightBoard M control consoles require a minimum of maintenance and servicing. The console includes a diagnostic routine to simplify field trouble-shooting of any problems which may arise.

Problems

If equipment fails to operate properly upon installation, or under normal load and temperature conditions, and basic trouble-shooting procedures are not effective, please contact Strand Lighting Field Service at the office serving your area. Strand Lighting will issue a Return Goods Authorization before the return of any defective materials. This allows tracking of returned equipment, and speeds its return to you.

Technical Questions

For technical questions regarding setup, operation, or maintenance of this equipment, please contact the Strand Lighting Field Service office serving your area.

Parts Purchases

For purchase of spare parts or documentation, please contact the Strand Lighting office serving your area.

Comments and Suggestions

For comments regarding equipment functions and/or possible improvements, or for comments on this manual, please call or write to the Marketing Manager at the Strand Lighting office serving your area.

Addresses

Addresses for all of the Strand Lighting offices are shown on the reverse side of the manual title sheet.

Chapter 2

Operational Features

This chapter presents the basic operational concepts you will need to know to operate the LightBoard M control console. The following two chapters present a detailed description of the system layout, with a description of each push-button, and a screen by screen description of the basic commands available. If you need more detail on any of the commands, please consult the *Reference* chapter (chapter 8). If you need a short, step by step tutorial on LightBoard M operation, please see the *Tutorial* chapter (chapter 9). LightBoard M has the following operational characteristics.

- Menu driven access to all setup functions.
- Four independent Patch Tables.
- Proportional Patching.
- Special effects software with channel or memory chases.
- Up to 200 memories (cues plus effects).
- Decimal point cue numbers let you insert cues between whole cue numbers.
- Split Crossfader (FADER A/B) and Electronic "Replacement" Fader (FADER X).
- Two Special Effects Faders.
- Grand Master for overall control of lighting levels and easy blackout fades.
- 24 or 48 overlapping local submasters.
- Eight remote submasters and 8 remote Function Keys.
- Submaster and channel bump buttons.
- Drives up to 768 dimmers on up to 144 control channels.

- You can use USITT AMX192 (CD80) output protocol and D54 (Strand Europe) or USITT DMX512 output protocol at the same time.
- All three protocol types are standard on the console.

Command Line

LightBoard M commands are keystroke sequences completed by [*]. The Command Line shows all keystrokes.

You can edit command line contents by using [*] to back up to the location of the error and retype the rest of the command line before pressing [*] if you have made a mistake.

Control lists let you select multiple channels or dimmers in a command line if required (e.g., [1] [THRU] [5] [AND] [6] [@] [5] [0] [*])

Macros

Macros let you set up sequences of keystrokes for later recall. Macros are recorded using the [MACRO] key, and can be recalled by selecting the macro number ([MACRO] **[macro number]**) and pressing [*] or by activating the appropriate remote closure.

Display Format

LightBoard M shows up to 96 channels on the screen at one time. If there are more channels in the system you can use [NEXT] or [LAST]. Channels status information is shown by the color used to display the channel information.

In the *Stage* display, colors show the level source:

- Yellow channels take their level information from Fader X.
- Green channels take their level information from Fader A/B.
- Cyan channels take their level information from Submasters or Bump Buttons.
- Magenta channels take their level information from FADER FX1 or FX2.
- Red channels are Independent channels.

In the *Preview* display, colors show the relationship of the current channel level to the last cue level:

- Yellow channel levels are higher than the last cue.
- Green channel levels are lower than the last cue.
- Cyan channels are unchanged from the last cue.

In the *Submaster* display, colors show the submaster level source:

- Yellow 0 shows submasters with channel assignments only.
- Green # shows channels assigned by cue
- Yellow # shows channels modified after assignment by cue.

Bump Buttons

LightBoard M has Bump buttons for all of its submasters and all of its channels.

The function of the bump button is set using the Bump Control. Bump buttons can be OFF (pressing the button has no effect), BUMP (pressing the bump button brings the associated submaster or channel to the presetBump Level, or SOLO (pressing the bump button shuts OFF all other channels or submasters.

If you have selected SOLO, pressing a Submaster Bump button will shut all other Submasters OFF but will not affect the channels. Pressing a Channel bump button will shut all other channels OFF but will not affect Submasters.

Submaster Controls

Submaster sliders let you fade selected Submasters on or off stage manually as required. Each Submaster can be assigned specific channels or cues, or can be assigned cues which are subsequently modified fo rthe Submaster.

The last 8 Submasters can be remotely controlled if required.

Fader Controls

LightBoard M has four separate fader controls which act as pile-on faders relative to each other. In addition, a Grand Master lets you fade the entire lighting picture ON or OFF manually.

FADER A/B lets you fade between cues or pile cues on top of each other. You can control fade speed manually or automatically.

FADER X lets you perform another replacement fade while a fade is in progress on FADER A/B. This is a replacement fader, and operates automatically once you press GO.

FADER FX1 and FADER FX2 are effects faders which let you fade effects in or out manually. You can set the maximum and minimum levels for dimmers involved in each effect.

Special Effects

The special effects commands in LightBoard M let you set up effects containing up to 96 steps. Channels or cues (but not both within the same effect) can be assigned to effect steps. There are 9 effect types in LightBoard M:

- Forward Channel Chase
- Reverse Channel Chase
- Bounce Channel Chase
- Forward Channel Chase, with Build
- Reverse Channel Chase, with Build
- Bounce Channel Chase, with Build
- Forward Memory Chase
- Reverse Memory Chase
- Bounce Memory Chase

Disk Library Storage

The 3.5" disk drive stores and retrieves system configuration information and show elements. Control of these functions is in the Setup display. `4 - Load Memory from Disk` loads data from the disk into memory. `5 - Save Memory to Disk` loads data from memory onto disk. `6 - Format Disk` formats the disk so you can use it for data storage.

LightBoard M uses hard-shelled micro floppy disks for library storage and backup. It can format any industry standard 3.5" High Density disk (2.0Mb unformatted or 1.44Mb formatted capacity).

Chapter 3

Hardware Description

LightBoard M uses solid-state memory for rapid storage and retrieval of up to 200 memories (cues+effects=200). Data is accessible at any time in either Stage (Live, or active) or Cue (Preview, or blind) Mode for playback or modification. The system is micro-processor based, and programmed specifically for processing and control of performance lighting.

A CRT monitor (either color or monochrome) provides visual monitoring of status information. A special purpose keyboard, and submaster and channel controllers provide operator interface to the console. An optional Remote Focus provides additional control flexibility.

Basic Elements

- Color Monitor.
- 3.5" 720KB (1MB unformatted) floppy disk drive.
- Menu driven access to all setup functions.
- Four independent Patch Tables.
- Proportional Patching.
- Split Crossfader (FADER A/B) and Electronic "Replacement" Fader (FADER X).
- Special effects software with channel or memory chases.
- Two Special Effects Faders.
- 24 or 48 overlapping local submasters.
- Eight remote submasters and 8 remote Function Keys.
- Submaster and channel bump buttons.
- Drives up to 768 dimmers on up to 144 control channels.
- USITT AMX192 (CD80) output protocol.
- USITT DMX512 output protocol.
- D54 (Strand Europe) output protocol.
- Printer connector and internal hardware standard.
- Printer optional.
- Hand held Remote Focus ("Remote Control," or "Riggers Remote") optional.
- Remote monochrome video monitor optional.

Electrical

- 120 VAC @ .6A 50/60Hz -or- 220 VAC @ .3A 50/60Hz. Power supply must be factory modified for 220VAC and/or 50Hz units.
- Good console earth ground is important.
- Cue Memory retention for 3 days after power failure.

Mechanical

- Compact tabletop unit with all major components in a common console.
- Separate Monitor sits behind or beside console.
- All Input/Output connectors are on rear of console.

Environment

- 40°C maximum ambient temperature, 5% to 80% humidity (non-condensing).
- Standard computer anti-static precautions should be taken.
- Auxiliary
- Auxiliary functions can be accommodated in blank panels on the console. Blank panel must be on second tier in two tier consoles. Consult Strand Lighting Engineering for details.
- 37 pin "D" type connector is installed on rear of auxiliary module.

Cable Lengths

- DMX 512 Dimmer Cable = Belden 9829 or equal 1500 feet maximum.
- AMX192 Dimmer Cable = Belden 9156 or equal 1500 feet maximum.
- D54 Dimmer cable = RG-59U or equal 1000 meters maximum.
- Remote Submaster Cable= Belden 8723 or equal 1000 feet maximum.
- Remote Function Key Cable= Belden 8723 or equal 1000 feet maximum.
- Remote control Cable = Belden 8723 or equal No branching runs 1500 feet maximum.
- External Monochrome Video = RG-59/U or equal No branching runs 1000 feet maximum.
- Extensions are not allowed on color video. Use only cable supplied with monitor.

Printer (optional)

- Okidata 182 with super high speed serial interface or equivalent. Printer must have its own internal data buffer.
- 25 foot cable supplied with printers purchased from Strand Lighting.
- Protocol: EIA RS-232C, 9600 baud, 8 bit with 2 stop bits, no parity, busy indicated by MARK level on SSD. Consult Strand Lighting Field Service for additional details.
- Internal console printer electronics, rear panel connector, and printer control software are standard.

Hand Held Remote (optional)

An optional Hand Held Remote (also called "Remote Focus" or "Rigger's Remote") can be used to control most of the console functions that do not require manual fader control. It is a compact hand held terminal which has its own liquid crystal display.

- Wired remote control at up to 1500 feet.
- 14 character alphanumeric display.
- 92 character memory.
- Controls all console functions except potentiometers.
- Protocol: EIA RS-232C, 300 baud, with 1 start bit (logic zero), 7 data and 1 parity bit, and 2 stop bits.

Chapter 4

Console Layout

The LightBoard M control console is a self contained desktop unit which allows remote control of several types of multiplexed dimmers. The control panel is designed specificaly for performance lighting control, with controls grouped together logically for easy operation.

Console Layout

All of the lighting controls for LightBoard M are in a single desktop housing, which contains the a disk drive, the playback controls, two keypads, and Submaster and Channel modules. Consoles can be single tiered if there are no channel modules. Consoles with channel modules are all double tier consoles.

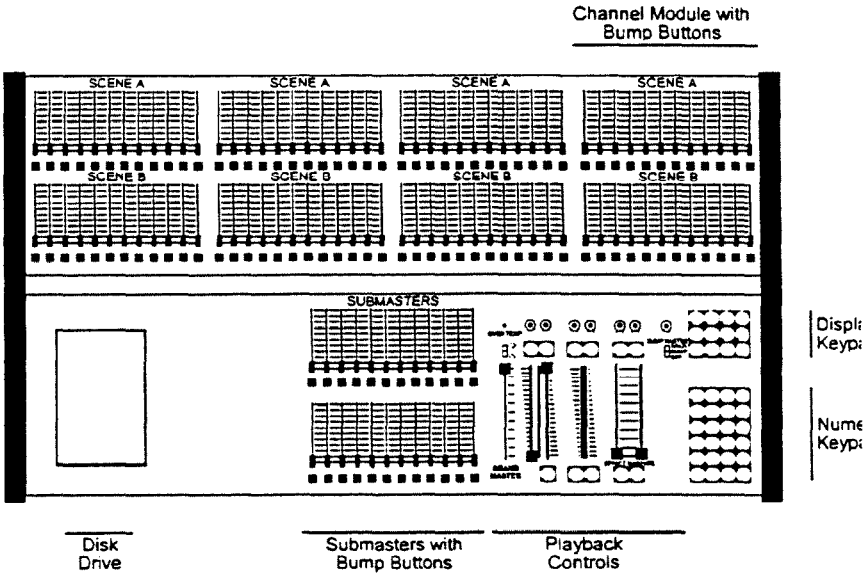


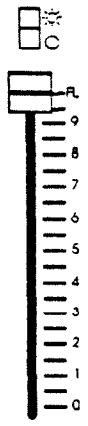
Figure 1. LightBoard M Console layout

Disk Drive

The 3.5" disk drive on a LightBoard M control console accepts industry standard 720Kb hard shelled floppy disks to let you back up or archive show information and retrieve it as necessary.

Grand Master Control

Tha master control consists of a Blackout Switch and a grand master fader. Both controls act as masters over all console output.



GRAND MASTER

Blackout Switch

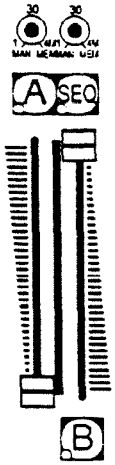
The Blackout Switch is a master switch over all console output (including independent channels). Push top of rocker switch to turn channels ON at maximum levels. Push bottom of rocker switch to turn channels OFF.

Grand Master Fader

The Grand Master fader is a proportional master over all console output (including independent channels). Channel output is at maximum level when slider is at "FULL" and fades proportionally between FULL and ZERO as slider moves towards the operator.

Fader A/B

FADER A/B lets you crossfade or pile-on cues or manual channels, with separate time controllers for each fader handle.



Fade Time Controls

The FADE TIME CONTROLLER above each fader lets you adjust the fade rate of cues loaded on the fader. The 7 o'clock position ("0") causes the fade to follow the fader handle regardless of recorded values. The 5 o'clock position ("MEM") causes the fade to follow recorded levels. Settings between these extremes cause the fade to execute at the rate displayed on the monitor. No fade will ever execute faster than the movement of the fader handle.

[A] loads a cue specified by Command keys onto FADER A. The [A] LED is ON when this fader contains a cue. When FADER A is controlling "SCENE A" (the upper row of channel controllers) the [A] LED is off.

[SEQ] enables/disables cue sequencing on FADER A/B. Sequencing for this fader is ON when the [SEQ] LED is ON.

[B] loads a cue specified by Command keys onto FADER B. The [B] LED is ON when Fader B contains a cue. When Fader B is controlling "SCENE B" (the lower row of channel controllers), [B] LED is off.

Fader A

Controls the overall level of "SCENE A" controller output, or a cue loaded on FADER A. Channels are at required intensities when the fader is at its upper limit and OFF when the fader is at its lower limit. Fade rates of increasing channel levels and decreasing channel levels may be separately controlled through memory, but not separately over-ridden with the FADER A TIME CONTROL.

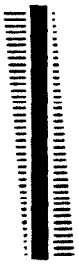
LED Bar Graph

The LED BAR GRAPH shows FADER A/B status.

Fader B Controls the overall level of "SCENE B" controller output, or a cue loaded on FADER B. Channels are at required intensities when the fader is at its upper limit and OFF when the fader is at its lower limit. Fade rates of increasing channel levels and decreasing channel levels may be separately controlled through memory, but not separately over-ridden with the FADER B TIME CONTROL.

Fader X FADER X is an electronic fader which allows fading from levels in one cue to levels in another cue. Fade rates of increasing channel levels (up-fade) and decreasing channel levels (down-fade) may be separately controlled through memory, and separately over-ridden with the FADER X time controls.

FadeTime Controls The **Up-Fade Time Control** (on the left above FADER X) controls the fade rate of the up-fade for cues loaded on FADER X. The 7 o'clock position ("0") causes an instantaneous completion. The 5 o'clock position ("MEM") causes the fade to follow recorded levels. Settings between these extremes cause the fade to execute at the rate displayed on the Monitor.



The **Down-Fade Time Control** (on the right above FADER X) controls the fade rate of the down-fade for cues loaded on FADER X.

X Loads a cue specified by Command keys onto FADER X. The X LED is ON when FADER X contains a cue.

SEQ enables/disables FADER X sequencing. Sequencing is ON when SEQ LED is ON and OFF when the LED is OFF.

LED Bar Graph follows FADER X progress. There are separate indicators for the up-fade and down-fade.

GO starts a crossfade on FADER X. GO LED lights when a cue is in progress.

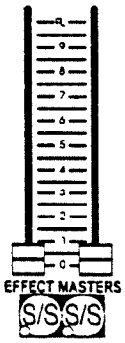
STOP stops a crossfade on FADER X. Push again to fade back to previous cue. The time to back into the previous cue is the same as the time elapses into the cue when you stopped the cue. Stopping a cue turns the STOP LED ON. Re-starting the cue turns the STOP LED OFF. You may back up through the entire CueSheet using this button. After the second time you push STOP, the LED goes OFF and additional pushes bump the system back one cue each.

Effects Control

FADER FX1 and FADER FX2 let you control recorded special effects.

Step Time Controls

The STEP TIME CONTROLLER above each effects fader lets you adjust the step time of effects loaded on the fader. The 7 o'clock position ("MAN") lets you manually step through effects. The 5 o'clock position ("MEM") causes the effect to step at recorded intervals. Settings between these extremes cause the effect to step at the rate shown on the monitor.



FX1 loads an effects memory specified by Command keys onto FADER FX1. FX1 LED is ON when the fader contains an effect.

Fader FX1

Controls stage levels of channels in the effect loaded on FADER FX1. Channels are at FULL required levels when the fader handle is at its upper limit, and OFF when the fader handle is at its lower limit.

S/S stops or starts the effect loaded on the fader directly above it. The S/S LED is ON when FX memory is active.

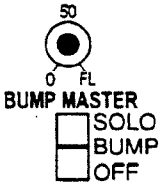
FX2 loads an effects memory specified by Command keys onto FADER FX2. FX2 LED is ON when fader contains an effect.

Fader FX2

Controls stage levels of channels in the effect loaded on FADER FX2. Channels are at FULL required levels when the fader handle is at its upper limit, and OFF when the fader handle is at its lower limit.

Bump Control

The bump function in LightBoard M gives you bump control over all submasters, and over all channels which are not on Independent (i.e., selected on the keypad and displayed in red on the Monitor).



Bump Level Control

The Bump Level control sets the level to which channels or submasters will bump. The Monitor displays this setting.

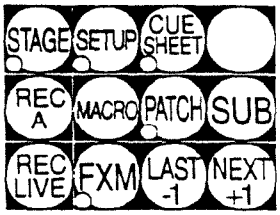
Bump Mode Control

The Bump Mode control sets the operational mode of all bump buttons.

- When set to SOLO, bump buttons force their associated channel or submaster to the Bump Level Controller setting, and all other channels or submasters OFF.
- When set to BUMP, bump buttons force their associated channels or submasters to Bump Level Controller setting.

Function Keys

The Function Keypad selects the operation mode and changes screen layout. Some of these keys are direct action, and some require additional keystrokes.



STAGE selects the *Stage* (live) display which shows the status of dimmers on stage. The STAGE LED is ON when you are in this display.

SETUP selects the *Setup* menu. The SETUP LED is ON when you are in this display.

CUE SHEET selects the *Cue Sheet* display. The CUE SHEET LED is ON when you are in this display.

REC A lets you record channel levels from the upper bank of manual controllers.

MACRO lets you access the eight macros. When when you specify a macro number (MACRO [#] ★) the pre-recorded commands for that number will automatically play back. You can record macros via the *Setup* menu.

PATCH lets you select a *Patch* table. To select the active patch table, press ★. To select a specific patch table press PATCH [#] ★. The PATCH LED lights while you are in a *Patch* table.

SUB selects the *Submaster Assignment* display or an individual *Submaster* display. To show the *Submaster Assignment* display press ★. To select a specific submaster press SUB [#] ★. The SUB LED lights while you are in a *Submaster* display or in the *Submaster Assignment* display.

REC LIVE lets you record the current stage levels to a cue.

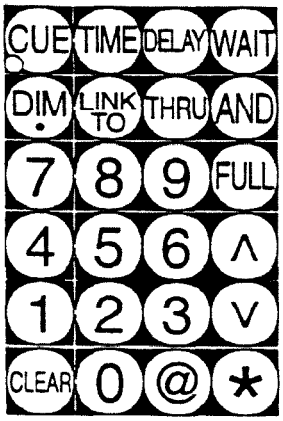
FXM lets you select an *Effects* display. To select an *Effects* display press FXM [#] ★. The FXM LED lights while you are in an *Effects* display.

LAST -1 lets you forward page through displays with multiple pages, or selects the next dimmer when you are in dimmer test mode.

NEXT +1 lets you reverse page through displays with multiple pages, or selects the last dimmer when you are in dimmer test mode.

Command Keys

The Command Keypad lets you select various functions and input numeric data into the system as required.



CUE — Lets you access cue memory stores for initial record action, later modification, and loading to faders. Lets you preview cue data without light levels appearing on stage. The CUE LED lights when the system is in a *Preview* display.

TIME — lets you add or change fade times for cues.

DELAY — lets you add or change delay times for cues.

WAIT — lets you add or change wait times for cues. This lets you make cue sequences if necessary.

DIM — Lets you address selected dimmer directly rather than through the control channel. You can use this function to check individual dimmers or bring up individual dimmers for focusing if necessary. While entering times this key acts as a decimal point.

LINK TO — links a specified cue to any other cue for automatic non- sequential playback.

THRU — lets you enter a range of channels and dimmers. Most lists let you use THRU and AND in the same list.

AND — lets you enter a random combination of channels or dimmers (as in 1 AND 5 AND 8). Most lists let you use THRU and AND in the same list.

0 through 9 — let you input numerical values.

CLEAR — Acts as a backspace key while a command is still incomplete, or clears the entire command line if the command has been completed.

@ — lets you assign levels to channels and dimmers, and patch dimmers to channels.

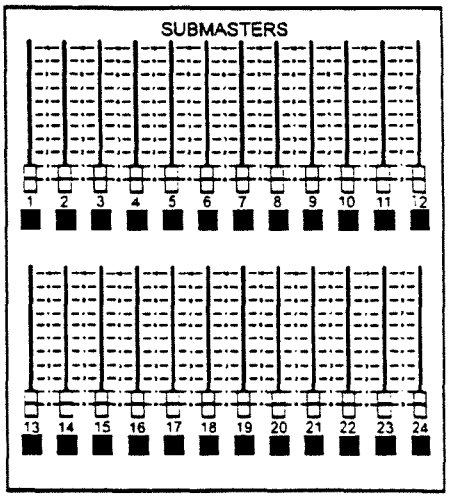
FULL — sets levels at FULL (100% or FL) when setting channel and dimmer levels.

^ and v — lets you raise and lower channel levels proportionaly. These buttons together are called the SCROLLER.

* — is similar to a return or enter key on most computer keyboards. This button completes many commands. Some commands require a second * to confirm. This key is called the EXECUTE key.

Submaster Controllers

Submaster controllers let you set up groups of channels or recorded cues you wish to control together. You can use the Bump Buttons to bump the associated submaster to FULL if required.

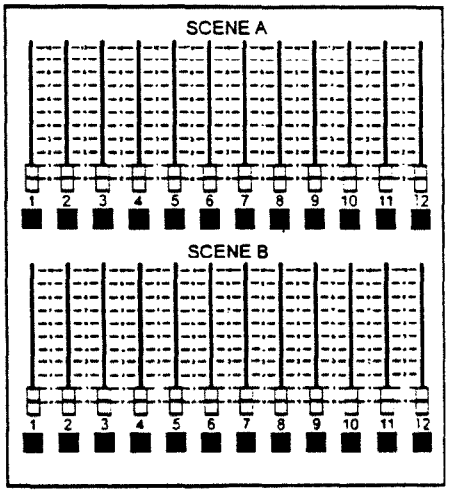


LightBoard M can have 1 or 2 Submaster Modules, each with 24 submaster controllers. 8 remote inputs (submasters 25-32 or 49-56) let you control selected channels remotely. Channels assigned to submasters are at maximum levels when the submaster is at its upper limit ("10"), and OFF when the submaster is at its lower limit ("0").

The Submaster Bump Buttons associated with each submaster controller let you "bump" the submaster ON. LEDs in bump buttons show submasters which are ON at any level above 5%. If the Bump Master is set to "BUMP" then ON for these buttons means that pushing the bump button forces the associated submaster to the level set on the Bump Level Control. If the Bump Master is set to "SOLO" then ON for these buttons means that all other submasters are forced to OFF. If the Bump Master is OFF the bump buttons have no effect.

Channel Controllers

The Channel Controllers let you control individual channels manually rather than by using the keypad to select and bring up dimmers or play back cues. LightBoard M can have up to 12 channel modules (144 manual channels). The number of channels in memory is independent of the number of channel controllers, and is set in the Setup Menu.



The channel controllers let you take manual control of a channel through **FADER A/B** if the fader has no cue assignment, unless that channel is under independent control. The channel is at the maximum required level when the controller is at its upper limit ("10"), and OFF when controller is at its lower limit. The upper row of controllers is "SCENE A." The lower row of controllers is "SCENE B."

The Channel Bump Buttons associated with each channel let you "bump" the channel ON. LEDs in the bump buttons show channels which are ON at any level above 5%. If the Bump Master is set to "BUMP" then ON for these buttons means that pushing the bump button forces the associated channel to the level set on the Bump Level Control. If the Bump Master is set to "SOLO" then ON for these buttons means that all other channels are forced to OFF. If the Bump Master is OFF the bump buttons have no effect.

Monitor

The Monitor shows system status information for the operator.

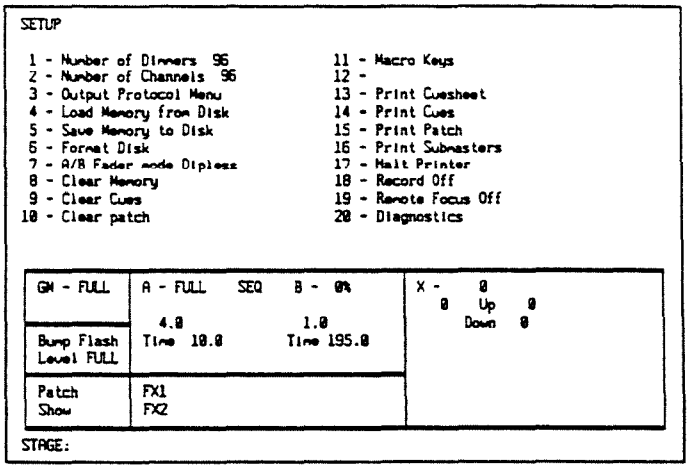


Figure 2. LightBoard M Monitor

The LightBoard M monitor is divided into two major sections. The upper part shows differing information depending on which display you are currently in. The lower portion shows cue and mastering information, and does not change. The lower half of the display is roughly divided into the following areas:

- The *Grand Master* display shows the current status of the Grand Master in % (FULL=100%).
- The *Bump* display shows the current bump mode and bump level.
- The *Patch Table* display shows the current patch table number.
- The *Record Lockout* display shows the current record lockout status.
- The *Fader A/B* display shows cue loading and fade status of **FADER A/B**.
- The *Effect Fader* display Shows effects loading and run status of **FADER FX1** and **FADER FX2**.
- The *Fader X* Display shows cues loading and the fade status of **FADER X**.
- The Command Line shows the current command line.

Chapter 5

Installation

Preparing for Installation

Before installing your LightBoard M, you should carefully consider the environment in which the equipment is to be installed, the power feeding the equipment, and the required conduit and/or cable runs. You should also consult the User's Manual for the type of dimmer being used in your system before finalizing installation plans.

Environmental Considerations

To maximize equipment life and minimize the chance of failures, the following environmental requirements should be met:

- Ambient Temperature Extremes: 20°C to 40°C ambient
- Recommended Operating Temperature: 18 to 25°C
- Relative Humidity: 10-85% non-condensing
- General Conditions: Office level cleanliness

Power

Leave the console connected to its primary power source (120VAC, 60Hz, 15A, or 240VAC service for 240VAC consoles), unless maintenance is being done or the console is not in use for extended periods of time.

The power source must have a good earth ground connection.

Primary power should be exclusively for the console and not used for other devices such as power tools, motors, transformers, or dimmers.

Connecting to Dimmers

LightBoard M will control dimmers which conform to the USITT AMX192 or DMX512 dimmer signal specification, or to the Strand Europe D54 specification. The system can control D54 and DMX512 dimmers **or** AMX192 and DMX512 dimmers. It cannot drive AMX192 dimmers and D54 dimmers at the same time.

AMX192 Control Wiring

The three types of connections provided in Strand Lighting equipment for the AMX192 signal are the XLR style connector, the TA4/TY4 Series Mini-SwitchCraft connector, and terminal blocks. Unless otherwise specified, dimmer cabinets use terminal block connections and consoles use XLR style connectors (see table 1 for pin assignments).

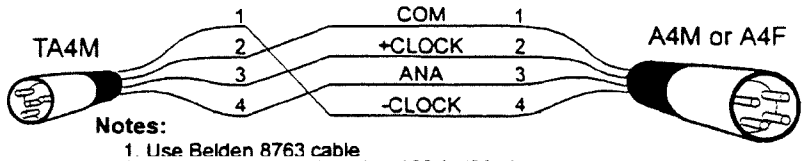
Table 1. AMX192 Control Outputs

Cable:	Belden 9156 or equal. May use Belden 8723 for adapters under 100 feet (30m) long.
Max Length:	1000 feet (300m). must be Daisy chained - no branching runs.
Connector:	Terminal block in dimmer rack. "XLR" style connector, or SwitchCraft TA4/TY4 series connector in control equipment.

XLR Pin #	TA4/TY4 Pin #	Terminal Pin #	Signal	Comments	Belden 8723	Belden 9156
4	1	AMX CLK-	CLOCK -	Clock Complement	Green	Black
2	3	AMX CLK+	CLOCK +	Clock True	White	White
1	2	AMX COM	COMMON	Analog Common	Black	Black
3	4	AMX AMUX	ANALOG	Multiplexed Analog	Red	Red

CLOCK+ and CLOCK- are one twisted pair. Analog and Common are one twisted pair.

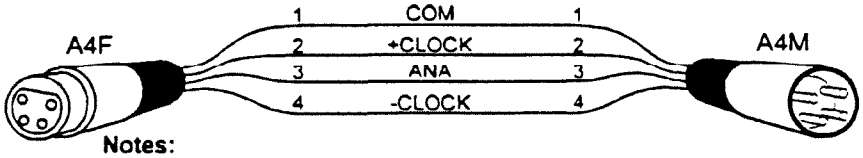
Interconnection between equipment with different plug types requires an adapter cable in which the plugs are not connected pin to pin (see figure 3).



Notes:
1. Use Belden 8763 cable
2. Maximum adapter length = 100 ft. (30m)
3. Sex of "XLR" style connector varies with application

Figure 3. XLR to TA4 Series Adapter

AMX192 adapters (under 100 ft) using TA4/TY4 connectors are made with Belden #8723 cable (2 pairs of shielded 24 AWG wire). All other runs are made with Belden #9156 (2 pairs of unshielded 18 gauge wire).



Notes:
1. Use Belden 9156 cable
2. Maximum extension length = 1000 ft. (300m) including all adapters

Figure 4. AMX192 Extension Cable

DMX512 Dimmer Control Wiring

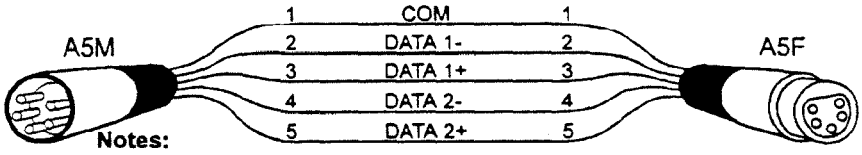
The two types of connections provided in Strand Lighting equipment for DMX512 dimmer control signals are the XLR style connector and terminal blocks. Unless otherwise specified, dimmer cabinets use terminal block connections and consoles use XLR style connectors (see table 2).

Table 2. DMX512 Control Outputs

Cable:	Belden 9829 or equal.
Max Length:	Standard RS485 electrical characteristics apply, including line driver and receiver characteristics, line loading, and multi-drop configurations.
Connector:	Terminal Block in Premiere cabinet. Terminal block in dimmer rack.

XLR Pin #	Terminal Label	DMX Signal	Comments	Pairs	Wire Color
1	D-GND	COMMON	Dimmer Common (shield)		shield
2	DATA- OUT	DATA 1-	Dimmer Drive Complement	pair 1	black
3	DATA+ OUT	DATA 1+	Dimmer Drive True		red
4	Not used	DATA 2-	Optional #2 Data Link Complement	pair 2	black
5	Not used	DATA 2+	Optional #2 Data Link True		white

DATA 1- and DATA 1+ are one twisted pair. Common is tied to the cable shield.



Notes:
1. Use a cable approved for RS485
2. For electrical characteristics, including driver and receiver selection, line loading, and multi-drop configurations, see RS485 specification.

Figure 5. DMX512 Dimmer Control Extension Cable

Connecting a Printer

The printer supplied by Strand Lighting for LightBoard M is an Okidata ML182 with the super high speed serial interface installed. This interface is necessary for the on-board buffer, and not for its extra speed.

Printer Cable

The printer cable uses a standard male 25-pin "D" subminiature connector on both ends.

Table 3. Console Output to Printer

Cable:	Multi-conductor jacketed (no shield).
Max Length:	50 feet
Connector:	"D" subminiature 9-pin female.
Signal Type:	EIA RS232, 9600 baud, 8 bit with 1 stop bit, no parity, busy indicated by XON/XOFF.

Pin #	Signal	Comments
1	COM	Serial Common
2	RS232 RX	RS232 Receive
3	RS232 TX	RS232 Transmit

Table 4. Printer Serial Input

Cable:	Multi-conductor jacketed (no shield).
Max Length:	50 feet
Connector:	"D" subminiature 25-pin female.
Signal Type:	EIA RS232, 9600 baud, 8 bit with 1 stop bit, no parity, busy indicated by XON/XOFF.

Pin #	Signal	Comments
2	TRANS DATA	RS232 Transmit
3	RCV DATA	RS232 Receive
7	COM	Serial Common

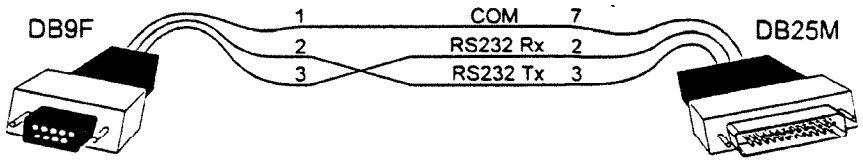


Figure 6. Printer Control Cable

Printer Setup

Set up an Okidata 182 with super high speed serial interface for use with LightBoard M by removing the switch access cover on the upper rear of the printer and setting the circuit board and serial interface switches as shown below.

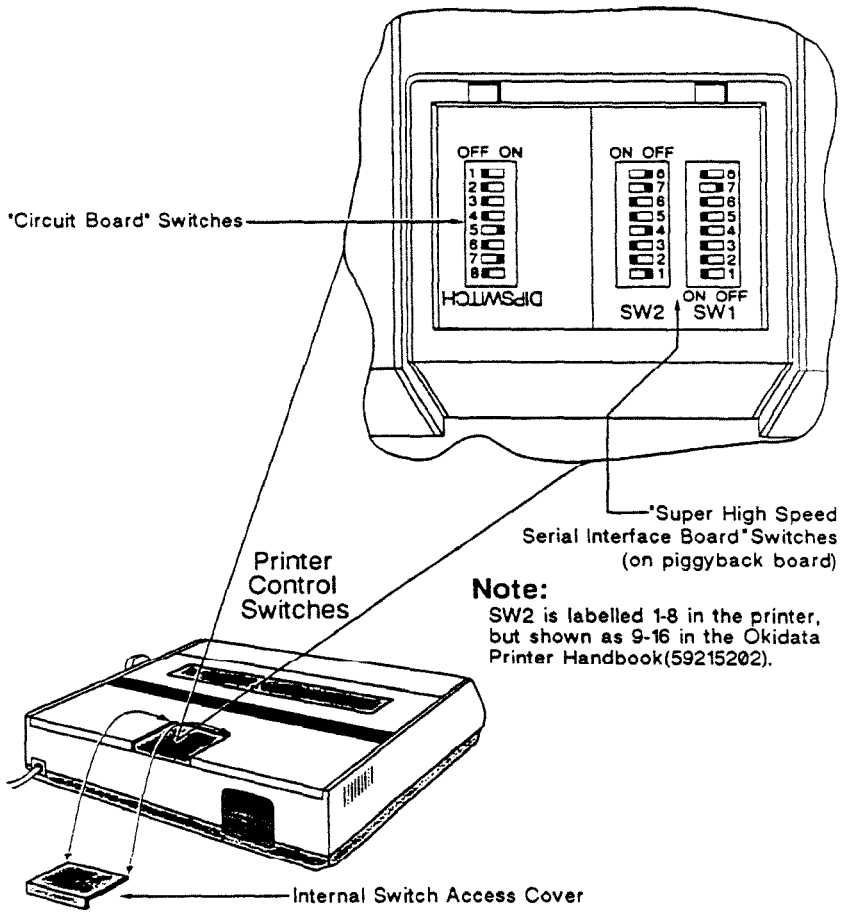


Figure 7. Okidata 182 Switch Configuration

Connecting the Hand Held Remote

The Hand Held has a pigtail with an "XLR" style 5-pin female connector. The console has a 9-pin male "D" subminiature connector. For most of the run you can use standard 5-pin "XLR" style extension cables. An adapter is required as the first component of the control cable chain. The wiring for this adapter is shown below. Since this cable also reverses two of the pins in the connector, it can only be used once in the chain.

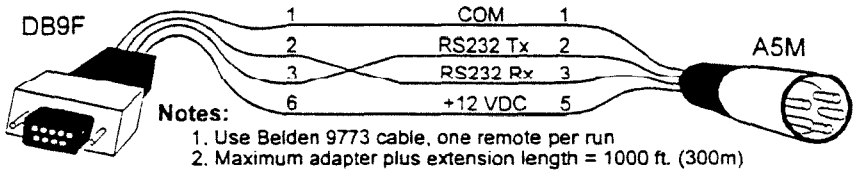


Figure 8. Hand Held Remote Adapter

Since the Hand Held Remote comes with only a short cable attached, you will probably need an extension cable between the Hand Held Remote and a connector box or between the Hand Held remote and the adapter cable. This cable has a 5-pin "XLR" style connector at each end and is wired pin to pin.

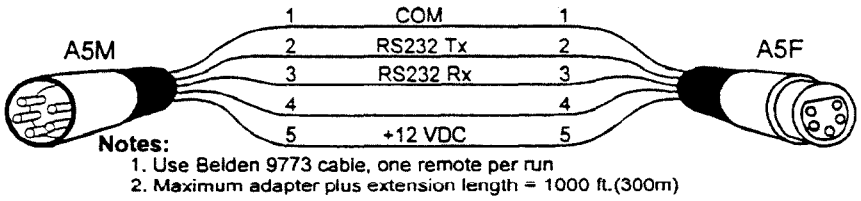


Figure 9. Hand Held Remote Extension

Connecting Remote Subs and Remote Macro Keys

LightBoard M has a "Remote In" connector which you can use to connect remote submaster potentiometers and remote Macro Keys (up to eight each). Table 5 shows the pinout for this connector.

Table 5. Remote In Connector Pinout

Cable:	Multi-conductor jacketed (no shield) Belden 8723 or Alpha 1181/40 for extension cables & #18AWG wire in all conduit runs.
Max Length:	500 feet without remote power supply. Please consult Strand Lighting about any runs longer than 500 feet.
Connector:	"D" subminiature 37-pin male

Pin #	Signal	Comments
1	Switch 5	Switch 5 voltage return
2	Switch 6	Switch 6 voltage return
3	Switch 7	Switch 7 voltage return
4	Switch 8	Switch 8 voltage return
5	Switch Volt Ref (V_{ISO})	Reference voltage for switches
6	Switch Volt Ref (V_{ISO})	Reference voltage for switches
7	N/C	
8	Subs Volt Ref (V_{ANA})	Reference voltage for submasters
9	Subs Volt Ref (V_{ANA})	Reference voltage for submasters
10	Sub 8	Submaster 8 level return
11	Sub 7	Submaster 7 level return
12	Sub 6	Submaster 6 level return
13	Sub 5	Submaster 5 level return
14	Sub 4	Submaster 4 level return
15	Sub 3	Submaster 3 level return
16	Sub 2	Submaster 2 level return
17	Sub 1	Submaster 1 level return
18	N/C	
19	N/C	
20	Switch 4	Switch 4 voltage return
21	Switch 3	Switch 3 voltage return
22	Switch 2	Switch 2 voltage return
23	Switch 1	Switch 1 voltage return
24	Switch Common	Common for switches only
25	Switch Common	Common for switches only
26	N/C	
27	Subs Volt Ref (V_{ANA})	Reference voltage for submasters
28	Subs Volt Ref (V_{ANA})	Reference voltage for submasters
29	Sub Common	Common for Submasters
30	Sub Common	Common for Submasters
31	Sub Common	Common for Submasters
32	Sub Common	Common for Submasters
33	Sub Common	Common for Submasters
34	Sub Common	Common for Submasters
35	Sub Common	Common for Submasters
36	Sub Common	Common for Submasters
37	N/C	

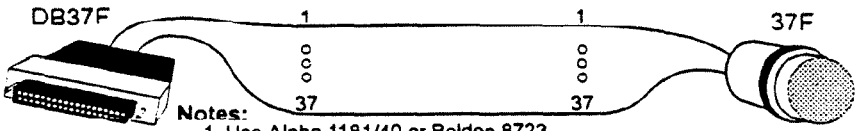


Figure 10. Remote Input Adapter

This page is reserved for a block diagram.

Chapter 6

Basic Trouble-shooting

This chapter provides basic trouble-shooting procedures for LightBoard M. It does not provide comprehensive maintenance data, but allows the user to solve simple problems which may occur, and helps to provide Strand Lighting with initial data when these procedures are not effective.

For best system operation, do a routine check and cleaning once each year unless the operating environment is unusually harsh or dirty. Service and maintenance operations other than this cleaning are seldom required. In case of problems, and in order to save time and aggravation, follow the procedures outlined here before calling Strand Lighting. Observe what happens at each step. These steps answer the first questions a Strand Lighting Service Representative will ask. The person doing the tests should call Strand Lighting in order to minimize translation errors and other misunderstandings.

Each section of this chapter describes a possible failure mode and actions to be taken. If all actions fail, please call the appropriate Strand Lighting office.

System Setup

System Setup must be correct for your dimming system, or dimmer addressing will suffer. Once properly set, do not change the number of dimmers, multiplexing ON/OFF and 6k/12k assignments. Post system setup assignments nearby for easy reference. Always check the Setup Menu first in any dimmer malfunction or addressing problem.

Basic Failure Types

There are several modes of computer failure. Strand Lighting has experts who can help identify and correct any type of failure which you may see. Regardless of suspected failure type, call Strand Lighting Field Service if the following procedures do not work. They will evaluate failure type and involve the necessary personnel.

Operator Error

Since this is the simplest type of failure to check for always check operating procedures before any other trouble-shooting. If you have questions not answered in this manual, call Strand Lighting Field Service.

Memory "Glitch"

This is different from a "bug." A "glitch" is caused by electrical or electromagnetic events, and changes the system memory or information on a disk. Symptoms may not surface at the time the "glitch" is introduced, but may be drastic enough to halt the system when they do. In failures where operator error is ruled out, assume this failure mode first, and clear the system following instructions under "System Halt."

Hard Failure

This term describes the case of an actual component failure in the system. Depending on symptoms and the equipment in your possession, such failures may be diagnosed over the telephone and appropriate spare parts sent to you. Problems are often resolved without a Field Engineer on site, thus saving both time and expense. Even if a Field Engineer on site becomes necessary, this type of failure is usually handled by a simple component or printed circuit board swapout, involving very little actual on-site repair time.

System Halt

Lights do not respond, and the keyboard does not respond. Lights go OFF or float to FULL depending on failure mode. If keyboard and video respond, see under *Dimmer Addressing Problems* in this chapter. If system halted during a disk transfer, see under *Disk Transfer Problems* in this chapter. Otherwise do the following tests. Do not continue with tests once console is functioning properly. If lights float to FULL, failure is probably on the I/O module or in the transmission line. If console still does not function after tests are complete, call Strand Lighting Field Service. This should be done by the person doing the tests.

Soft Reset

Lift the shield from the Soft Reset button on the rear of the console. Push the button and release immediately. This restarts the processors, but does not clear memory. It may be necessary to repeat this procedure several times in rapid succession.

Hard Reset

If you have not done this procedure before, consult Strand Lighting Field Service before proceeding.

Turn console OFF. Unplug console from power. Remove upper left hand corner module from console. Unplug one or both plugs from the MAXCAP PCB. Leave these unplugged while doing a "clear reset." Wait 2 minutes. Apply AC power. If console is functioning, unplug AC power, replug the MAXCAP PCB connections, put console back together, and apply AC power. This reset clears all memory locations to zero.

If the console fails after reconnecting the MAXCAP connections, the MAXCAPs are probably defective. Repeat the procedure without connecting these plugs, and call Strand Lighting Field Service.

Intermittent Halt

If the console can be reset, but will shut off periodically (more than once every few months), there may be power problems in the building or in the console. In such cases, do the following tests.

1. If a power conditioner is in use, plug the console it directly into the wall to see if the conditioner has failed.
2. If the power conditioner seems to be functioning, a console power supply may be out of adjustment. Consult Strand Lighting Field Service for adjustment procedures.
3. If the above check out, you may have to investigate incoming power to the building. Consult Strand Lighting Field Service to determine if this is necessary.

Memory Corruption

For purposes of this manual, memory corruption is any problem with memory which does not cause a system halt. This is one form of Memory Glitch as defined under "Basic Failure Types." Memory corruption can take many forms. When in doubt, consult Strand Lighting Field Service.

Source

Memory corruption can occur from several sources. Some of these are:

1. A voltage spike which was not entirely eliminated by the power line conditioner or other input power conditioning device. Such spikes can result from close lighting strikes, from the power company itself, or from within your own building (i.e., air conditioning system turning on).
2. Voltage spikes caused by a faulty power conditioning device. These are electronically controlled and can fail. Usually the effects of such failures are more drastic than simple memory corruption (i.e., system halts).
3. A partial or full brownout, after which the return of power can be "dirty." There is sometimes enough "Trash" on line when power is restored to cause problems.
4. Transfer of bad data from a corrupted disk. Disks can be corrupted in several ways. Once a disk is corrupted, clearing the memory eliminates the problem only until memory is reloaded from the bad disk. Find an uncorrupted backup disk, or re-enter data by hand (See section on "Disk Drive Problems").

Determination of Extent

If memory is corrupted, determine if the problem is on your show disk. The following procedures will help.

1. Copy the contents of memory to a disk. This disk is corrupted, but may be valuable as a reference, or as a backup.
2. Clear memory by doing a "hard reset" (See section on "System Halt").
3. Try to duplicate the observed problem starting with a blank console. This shows if the problem is in the console itself. If the problem persists during this step, call Strand Lighting Field Service. If you cannot duplicate the problem, proceed to step 4.
4. Load data from a show disk (not the one which was made above). If the problem re-occurs, it is on the disk. It will be necessary to find a way to work around the problem, find an older, uncorrupted disk to use for updating show data, or reprogram starting from a cleared console.
5. Once you have established an uncorrupted memory, make sure that appropriate disks and backups are re-recorded with uncorrupted data. Re-format disks before using them for new data.

Disk Drive Problems

Halt on Read

Attempting to transfer data into memory causes system halt.

1. Turn system off then on again to reset. This normally clears a halt caused by disk problems. If not, follow instructions under "System Halt."
2. Try one of your backup disks. If this causes the same problem, save both disks and obtain one on which data can be changed.
3. Format the disk from step 2. This erases all previous data on the disk.
4. If disk will not format, obtain another disk. Try at least 3 disks before giving up at this step.
5. Write several simple cues into memory. 6) Attempt to record cues written in step 5 to disk. If formatting succeeded, this should also work.
7. Attempt to load memory from the new disk. If successful, try the disk from step 1 again. If console halts, disk is bad.

Halt on Record

Attempting to record a disk causes system halt.

Use the procedure above to make certain that the problem is not a bad disk. Always test for disk failure before suspecting hardware. Although unusual, it is possible for several disks to be corrupted at once.

Halt on all transfers

Disk will not transfer either direction. Message comes back "ERROR" (red LED on disk drive lights up for a while, then goes out).

Check for corrupted disk as above. If all disks seem defective, check cable between Command PCB (on bottom of console pan) and disk drive. If this seems good but problems persist, call Strand Lighting Field Service.

Cannot format disk

If one disk will not format, the disk is probably bad. If multiple disks will not format, check connections to disk drive. If these steps do not correct the problem, call Strand Lighting.

Video Problems

Non-Functioning CRT

1. Make certain that CRTs have power.
2. Check brightness controls.

Monochrome CRT has a double image or "fuzzy" image

1. If a remote CRT is in use the remote CRT cable is probably plugged into the back of the console, but with the remote monitor disconnected or improperly terminated. When you disconnect the remote monitor, you must also disconnect the cable at the console, or the cable must be properly terminated. If the remote monitor is connected, make certain that all CRTs are properly terminated.
2. Use of "Y" connectors in a video hookup is not proper procedure. If there is more than one monitor on the monochrome system, consult Strand Lighting or your local TV station for proper video hook-up procedure.

Monochrome CRT in console dims if remote CRT is plugged in

Remote CRT is incorrectly terminated or there is a short circuit in the video distribution.

Dimmer Addressing Problems

Some or all dimmers float to full

1. In CD80 dimmers systems, make certain that the proper number of dimmers are assigned in the Configuration Menu, and that 6KW and 12KW dimmers are properly assigned in Patch.

   If these are not correct, improper dimmer addressing will result. Each incorrect 6K/12K dimmer assignment shifts dimmer output by one number.

2. If only a few dimmers are involved, make certain that the problem is not in the dimmer rack.

3. If an entire console output or more (a multiple of 96 dimmers) is involved, swap output cables to see whether the problem is in the console or dimmer rack (i.e., if all dimmers on control cable #1 are affected, swap cable #1 and cable #2 at the console outputs). If the same dimmer rack(s) is(are) affected, the problem is in the rack(s). If different dimmers are now affected, the output is faulty.

   Be careful. Once you swap outputs, dimmer numbering will shift. If you have questions about how dimmer numbers will shift, consult Strand Lighting Field Service.

Console will not control correct dimmers

1. Check for correct patch assignment.

2. In CD80 dimmer systems, make certain that the proper number of dimmers are assigned in the Configuration Menu, and that 6KW and 12KW dimmers are properly assigned in Patch.

   If these are not correct, improper dimmer addressing will result. Each incorrect 6K/12K dimmer assignment shifts dimmer output by one number.

Control of dimmers is shifted

When a dimmer is brought up, a different dimmer comes up instead, and is shifted by a fixed amount.

In CD80 dimmer systems, make certain that the proper number of dimmers are assigned in the Configuration Menu, and that 6KW and 12KW dimmers are properly assigned in Patch.

If these are not correct, improper dimmer addressing will result. Each incorrect 6K/12K dimmer assignment shifts dimmer output by one number.

Some dimmers cannot be controlled, or act as non-dims

1. Check "Patch" to ascertain that all patches are correct.
2. Make sure that a Submaster is not holding dimmers ON.

If these check, the problem is probably in the dimmer rack.

Certain dimmers will not go up to full

Check "Patch" to make certain they are not proportionally patched to a lower level. If patch is correct, check the dimmer rack for problems.

Chapter 7

Periodic Maintenance

Periodic Maintenance should be done every six (6) to twelve (12) months, depending on the environmental conditions. Although a detailed discussion of this procedure is beyond the scope of this manual, basic checklists are provided to show what is involved. Users wishing to do these procedures on their own should consult Strand Lighting Field Service.

Basic Periodic Maintenance consists of the following steps:

1. Clean console
2. Clean all mechanical connections
3. Re-install all removed components, and power up.
4. Check and adjust power supplies
5. Check and adjust A.C. Fail circuit
6. Check and adjust all mechanical controls
7. Clean disk drive
8. Check and adjust CRT if necessary
9. Check and adjust all console outputs
10. Check backup system
11. Re-lamp illuminated push-buttons and worklights where applicable.

Equipment necessary to do the above, but not provided by Strand Lighting, includes:

1. Compressed air (must be oil and moisture free).
2. Soft paint brush
3. Digital volt-ohm-meter
4. Oscilloscope
5. Distilled water (20%) + denatured alcohol (80%).
6. Floppy disk drive head cleaning kit
7. Variac transformer to vary console input voltage.

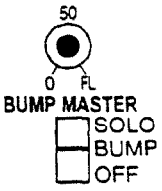
Chapter 8

Reference

This chapter is a alphabetical listing of controls and functions for the LightBoard M. It includes the following sections.

Bump Master

The bump function in LightBoard M gives you bump control over all submasters, and over all channels which are not on Independent (i.e., selected with the Command keys and displayed in red on the Monitor).



Bump Level Control

The Bump Level control sets the level to which channels or submasters will bump. The Monitor displays this setting.

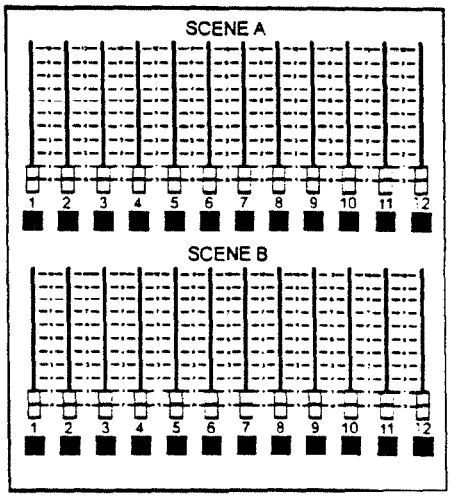
Bump Mode Control

The Bump Mode control sets the operational mode of all bump buttons.

- When set to SOLO, bump buttons force their associated channel or submaster to the Bump Level Controller setting, and all other channels or submasters OFF.
- When set to BUMP, bump buttons force their associated channels or submasters to Bump Level Controller setting.

Channel Controllers

The Channel Controllers let you control individual channels manually rather than by using the Command keys to select and bring up dimmers or play back cues. LightBoard M can have up to 12 channel modules (144 manual channels). The number of channels in memory is independent of the number of channel controllers, and is set in the Setup Menu.

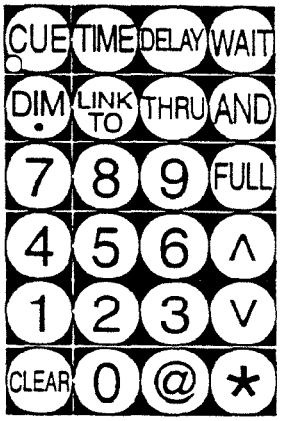


The channel controllers let you take manual control of a channel through FADER A/B if the fader has no cue assignment, unless that channel is under independent control. The channel is at the maximum required level when the controller is at its upper limit ("10"), and OFF when controller is at its lower limit. The upper row of controllers is "SCENE A." The lower row of controllers is "SCENE B."

The Channel Bump Buttons associated with each channel let you "bump" the channel ON. LEDs in the bump buttons show channels which are ON at any level above 5%. If the Bump Master is set to "BUMP" then ON for these buttons means that pushing the bump button forces the associated channel to the level set on the Bump Level Control. If the Bump Master is set to "SOLO" then ON for these buttons means that all other channels are forced to OFF. If the Bump Master is OFF the bump buttons have no effect.

Command Keys

The Command keys lets you select various functions and input numeric data into the system as required.



CUE Lets you access cue memory stores for initial record action, later modification, and loading to faders. Lets you preview cue data without light levels appearing on stage. The CUE LED lights when the system is in a Preview display.

TIME lets you add or change fade times for cues.

DELAY lets you add or change delay times for cues.

WAIT lets you add or change wait times for cues. This lets you make cue sequences if necessary.

DIM Lets you address selected dimmer directly rather than through the control channel. You can use this function to check individual dimmers or bring up individual dimmers for focusing if necessary. While entering times this key acts as a decimal point.

LINK TO links a specified cue to any other cue for automatic non- sequential playback.

THRU lets you enter a range of channels and dimmers. Most lists let you use THRU and AND in the same list.

AND lets you enter a random combination of channels or dimmers (as in 1 AND 5 AND 8). Most lists let you use THRU and AND in the same list.

0 through 9 let you input numerical values.

CLEAR Acts as a backspace key while a command is still incomplete, or clears the entire command line if the command has been completed.

@ lets you assign levels to channels and dimmers, and patch dimmers to channels.

FULL sets levels at FULL (100% or FL) when setting channel and dimmer levels.

^ and v lets you raise and lower channel levels proportionaly. These buttons together are the "Scroller."

* is similar to a return or enter key on most computer keyboards. This button completes many commands. Some commands require a second * to confirm.

Command Line

LightBoard M commands are keystroke-sequences completed by [*] (execute), by the logical end of command (as with channel level entries), or by the press of a direct action button such as [A] (FADER A assignment button). The Command Line displays all keystrokes. Before command completion you can use [CLEAR] to back through the command sequence and change an entry.

The system ignores entries which do not fit the Command Line syntax. An invalid selection from the menu results in a display showing >>>INVALID OPTION<<<. An invalid value entry (such as channel 98) results in a display showing >>>INVALID NUMBER<<<. If a command changes data in memory, the Command Line shows >>>PLEASE CONFIRM<<<. To complete the action, press [*] again.

You can use [AND] and [THRU] to formulate the lists required by many commands. You can usually use a combination of these two keys in the same command line.

Commands too long for the Command Line space scroll "off screen" to the left.

When you press a number ([0] through [9]) before a command button, CHANNEL appears on the Command Line in Stage, Preview, and Submaster modes, and DIMMER appears in Patch mode.

All times you enter on the Command Line are in seconds.

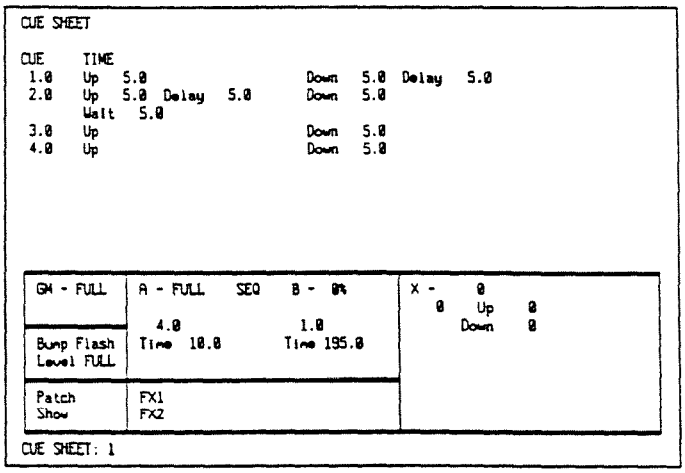
Cue Sheet Display

The *Cue Sheet* display lets you see all of your cues on a single listing. This display shows only the cue information, not channel information.

Press

[CUE SHEET]

to see the *Cue Sheet* display.



Move Around the Display

[NEXT -1] moves the display up one cue at a time.

[LAST -1] moves the display down one cue at a time.

[CUE] [#] [CUE SHEET] shows the specified cue at the top of the cue sheet.

Assign or Change Cue Attributes

You can modify cue attributes (Time, Delay, Wait, and Link) while you are in the *Stage*, *Preview*, or *Cue Sheet* display. You can change all attributes at the same time by stringing the commands together before pressing [*].

[CUE] [#] [TIME] [time] [*]

Modifies the fade time of the selected cue. Dimmers going up and dimmers going down will fade at the same rate.

[CUE] [#] [TIME] [up time] [AND] [down time] [*]

Modifies the fade time of the selected cue. Dimmers going up and dimmers going down will fade at different rates.

[CUE] [#] [DELAY] [time] [*]

Adds a delay time to all dimmers fading up and all dimmers fading down in the selected cue.

[CUE] [#] [DELAY] [AND] [time] [*]

Adds a delay time to all dimmers fading down in the selected cue.

CUE [#] DELAY [time] AND *

Adds a delay time to all dimmers fading up in the selected cue.

CUE [#] WAIT [time] *

Adds a wait time to the selected cue. This is the time from the start of the cue until the start of the next cue. To start the next cue when this cue ends, assign the same fade and wait times.

CUE [#] LINK TO [#] *

Links the first cue listed to the second cue. This will cause the automatic sequencing to take the linked cue next after the current cue rather than the next highest cue number.

Delete Cue Attributes

You can delete cue attributes (Time, Delay, Wait) while you are in the *Stage*, *Preview*, or *Cue Sheet* display.

CUE [#] TIME *

Deletes the fade time from the selected cue. This sets the fade time to ZERO seconds.

CUE [#] DELAY *

Deletes the delay time or times from the selected cue.

CUE [#] WAIT *

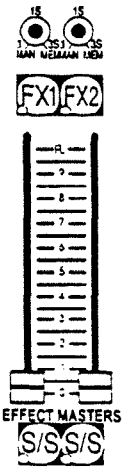
Deletes the wait time from the selected cue.

CUE [#] LINK TO *

Deletes the link from the selected cue.

Effects Faders

FADER FX1 and FADER FX2 let you control recorded special effects.



Step Time Controls

The STEP TIME CONTROLLER above each effects fader lets you adjust the step time of effects loaded on the fader. The 7 o'clock position ("MAN") lets you manually step through effects. The 5 o'clock position ("MEM") causes the effect to step at recorded intervals. Settings between these extremes cause the effect to step at the rate shown on the monitor.

FX1 loads an effects memory specified by Command keys onto FADER FX1. FX1 LED is ON when the fader contains an effect.

Fader FX1

Controls stage levels of channels in the effect loaded on FADER FX1. Channels are at FULL required levels when the fader handle is at its upper limit, and OFF when the fader handle is at its lower limit.

S/S stops or starts the effect loaded on the fader directly above it. The S/S LED is ON when FX memory is active.

FX2 loads an effects memory specified by Command keys onto FADER FX2. FX2 LED is ON when fader contains an effect.

Fader FX2

Controls stage levels of channels in the effect loaded on FADER FX2. Channels are at FULL required levels when the fader handle is at its upper limit, and OFF when the fader handle is at its lower limit.

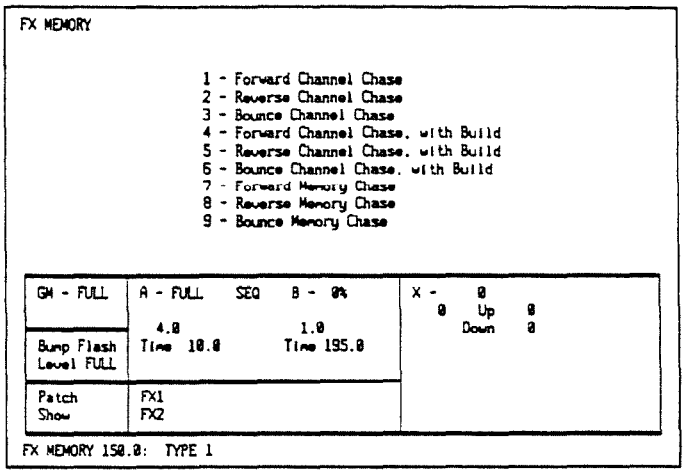
Effects Type Menu

The *Effects Type* menu lets you choose an effects type for the effect you are about to edit. You must always go through this menu to reach an *Effects* display. An effect can be either a memory (cue) effect or a channel effect.

Press

FXM [#] [*]

to see the *Effect Type* menu for the selected effect.



Select an Effect Type

There are 9 effect types defined for LightBoard M, of which the first six are channel chases (each step is a channel) and the last three are memory chases (each step is a cue). Once defined, a channel chase effect can be changed to any other type of channel chase effect, but not to a memory chase effect. Memory chase effects cannot be changed to channel chase effects. To change between the two types of effects you must delete the memory and re-define it.

1 - Forward Channel Chase

At chase start, all channels are OFF. Subsequent steps turn their assigned channels ON and previous step channels OFF.

2 - Reverse Channel Chase

Causes channel steps to execute in reverse numerical order.

3 - Bounce Channel Chase

First pass is a forward channel chase, and subsequent passes alternate between reverse and forward channel chases.

4 - Forward Channel Chase. with build

All channels are OFF at chase start. Each step turns its assigned channel ON, and does not turn previous step channel OFF. At end of chase, all lights are ON; they are all extinguished at the beginning of the next pass.

5 - Reverse Channel Chase. with build

Same as 4, except steps execute in reverse order.

6 - Bounce Channel Chase. with build

Starts with the first pass as a Forward Channel Chase with build, then alternates between reverse and forward channel chases with build.

7 - Forward Memory Chase

At chase start, all memories are OFF. Subsequent steps turn their assigned memory ON and previous step memory OFF.

8 - Reverse Memory Chase

Causes memory steps to execute in reverse order.

9 - Bounce Memory Chase

First pass is a forward memory chase, and subsequent passes alternate between reverse and forward memory chases.

Press [#] [*] to select the effect type and proceed to the *FX Memory* display for the selected effect (see page 55).

Fader A/B

FADER A/B lets you crossfade or pile-on cues or manual channels, with separate time controllers for each fader handle.

Fade Time Controls

The FADE TIME CONTROLLER above each fader lets you adjust the fade rate of cues loaded on the fader. The 7 o'clock position ("0") causes the fade to follow the fader handle regardless of recorded values. The 5 o'clock position ("MEM") causes the fade to follow recorded levels. Settings between these extremes cause the fade to execute at the rate displayed on the monitor. No fade will ever execute faster than the movement of the fader handle.

[A] loads a cue specified by Command keys onto FADER A. The [A] LED is ON when this fader contains a cue. When FADER A is controlling "SCENE A" (the upper row of channel controllers) the [A] LED is off.

[SEQ] enables/disables cue sequencing on FADER A/B. Sequencing for this fader is ON when the [SEQ] LED is ON.

[B] loads a cue specified by Command keys onto FADER B. The [B] LED is ON when Fader B contains a cue. When Fader B is controlling "SCENE B" (the lower row of channel controllers), [B] LED is off.

Fader A Controls the overall level of "SCENE A" controller output, or a cue loaded on FADER A. Channels are at required intensities when the fader is at its upper limit and OFF when the fader is at its lower limit. Fade rates of increasing channel levels and decreasing channel levels may be separately controlled through memory, but not separately over-ridden with the FADER A TIME CONTROL.

LED Bar Graph The LED BAR GRAPH shows FADER A/B status.

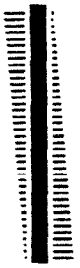
Fader B Controls the overall level of "SCENE B" controller output, or a cue loaded on FADER B. Channels are at required intensities when the fader is at its upper limit and OFF when the fader is at its lower limit. Fade rates of increasing channel levels and decreasing channel levels may be separately controlled through memory, but not separately over-ridden with the FADER B TIME CONTROL.

Fader X

FADER X is an electronic fader which allows fading from levels in one cue to levels in another cue. Fade rates of increasing channel levels (up-fade) and decreasing channel levels (down-fade) may be separately controlled through memory, and separately over-ridden with the FADER X time controls.

FadeTime Controls

The **Up-Fade Time Control** (on the left above FADER X) controls the fade rate of the up-fade for cues loaded on FADER X. The 7 o'clock position ("0") causes an instantaneous completion. The 5 o'clock position ("MEM") causes the fade to follow recorded levels. Settings between these extremes cause the fade to execute at the rate displayed on the Monitor.



The **Down-Fade Time Control** (on the right above FADER X) controls the fade rate of the down-fade for cues loaded on FADER X.

X Loads a cue specified by Command keys onto FADER X. The X LED is ON when FADER X contains a cue.

SEQ enables/disables FADER X sequencing. Sequencing is ON when SEQ LED is ON and OFF when the LED is OFF.

LED Bar Graph

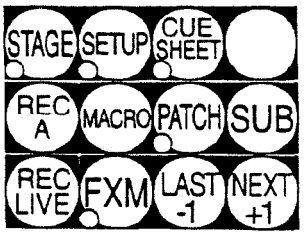
follows FADER X progress. There are separate indicators for the up-fade and down-fade.

GO starts a crossfade on FADER X. GO LED lights when a cue is in progress.

STOP stops a crossfade on FADER X. Push again to fade back to previous cue. The time to back into the previous cue is the same as the time elapses into the cue when you stopped the cue. Stopping a cue turns the STOP LED ON. Re-starting the cue turns the STOP LED OFF. You may back up through the entire CueSheet using this button. After the second time you push STOP, the LED goes OFF and additional pushes bump the system back one cue each.

Function Keys

Function keys let you select the operation mode and change screen layout. Some of these keys are direct action, and some require additional keystrokes.



STAGE selects the *Stage* (live) display which shows the status of dimmers on stage. The STAGE LED is ON when you are in the Stage display.

SETUP selects the *Setup* menu. The SETUP LED is ON when you are in the Stage display.

CUE SHEET selects the *Cue Sheet* display. The CUE SHEET LED is ON when you are in the Stage display.

REC A lets you record channel levels from the upper bank of manual controllers.

MACRO lets you access the eight macros. When when you specify a macro number (MACRO [#] [*]) the pre-recorded commands for that number will automatically play back. You can record macros via the *Setup* menu.

PATCH lets you select a *Patch* table. To select the active patch table, press [*]. To select a specific patch table press PATCH [#] [*]. The PATCH LED lights while you are in a *Patch* table.

SUB selects the *Submaster Assignment* display or an individual *Submaster* display. To show the *Submaster Assignment* display press [*]. To select a specific submaster press SUB [#] [*]. The SUB LED lights while you are in a *Submaster* display or in the *Submaster Assignment* display.

REC LIVE lets you record the current stage levels to a cue.

FXM lets you select an Effects display. To select an Effect display press FXM [#] [*]. The FXM LED lights while you are in an *Effects* display.

NEXT +1 lets you forward page through displays with multiple pages, or selects the next dimmer when you are in dimmer test mode.

LAST -1 lets you reverse page through displays with multiple pages, or selects the last dimmer when you are in dimmer test mode.

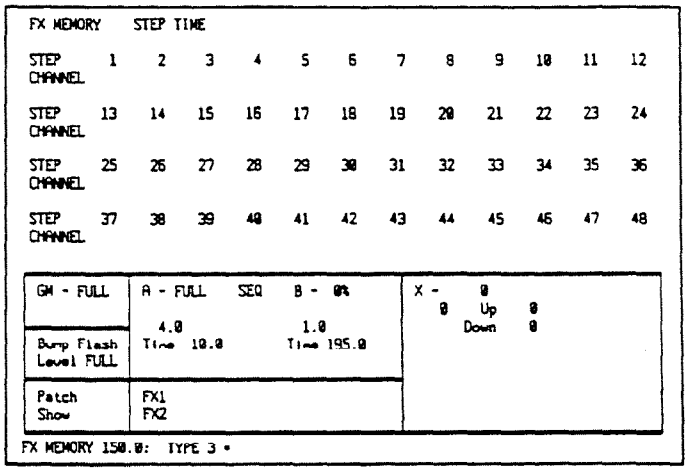
FX Memory Display

The *FX Memory* display lets you assign cues or channels to effects memories. In order to get into this display you must first open the *Effects Type* menu and choose an effect type (see page 50). An effect can be either a memory (cue) effect or a channel effect.

Press

[#]*

from the *Effects Type* display to choose the effect type and see the *Effect* display for the selected effect.



If you choose a memory (cue) effect rather than a channel effect the lines labelled CHANNEL would be labelled MEMORY. Otherwise working with channel effects and memory effects is the same.

Move Around the Display

NEXT +1 pages forward through steps, 48 steps at a time.

LAST -1 pages backward through steps, 48 steps at a time.

Assign Effect Steps

[channel or cue #]@[step #]*

Sets the channel or cue number assigned to the specified step. The type of effect determines how the system interprets the first number you enter in the statement.

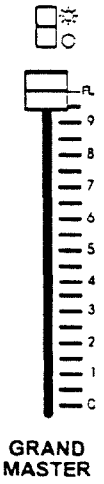
Assign Step Time

TIME **[time]***

Sets the step time for the effect. Step times can be set from 0.1 to 999.9 seconds.

Grand Master Control

Tha master control consists of a Blackout Switch and a grand master fader. Both controls act as masters over all console output.



Blackout Switch

The Blackout Switch is a master switch over all console output (including independent channels). Push top of rocker switch to turn channels ON at maximum levels. Push bottom of rocker switch to turn channels OFF.

Grand Master Fader

The Grand Master fader is a proportional master over all console output (including independent channels). Channel output is at maximum level when slider is at "FULL" and fades proportionally between FULL and ZERO as slider moves towards the operator.

Hand Held Remote (optional)

An optional Hand Held Remote (also called "Remote Focus" or "Rigger's Remote") can be used to control most of the console functions that do not require manual fader control. It is a compact hand held terminal which has its own liquid crystal display.

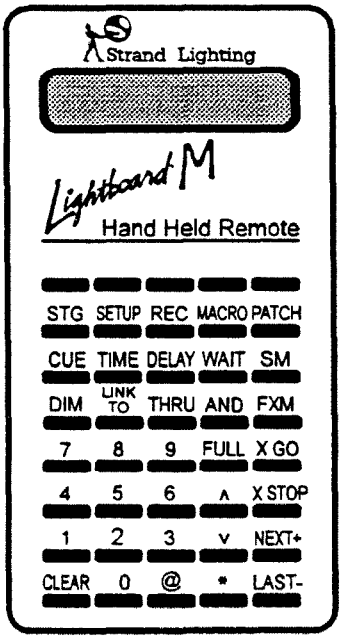


Figure 11. Hand Held Remote Control

Operation of all functions except x_go is the same as on the control console. Pressing x_go will play back the next pending cue. Pressing cue [#] x_go will play back the specified cue.

The Hand Held Remote is active only when turned ON in the Setup menu. Always turn the Hand Held Remote OFF in the Setup menu when it is unplugged. Otherwise the system is looking for data from the Hand Held Remote and may interpret noise on the unterminated line as data.

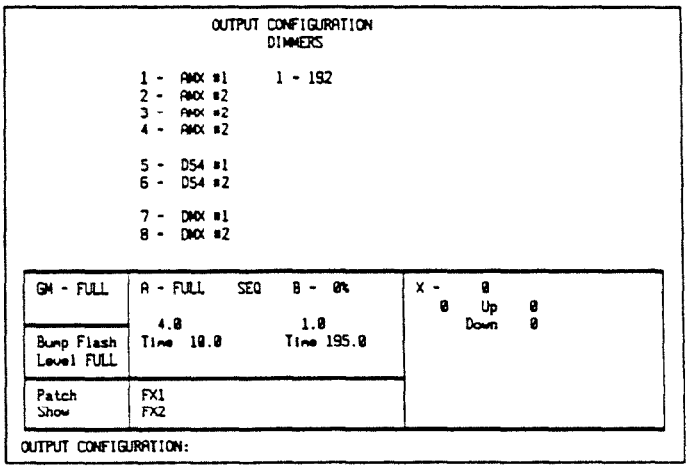
Output Protocol Menu

The *Output Protocol* menu lets you set set up the dimmer numbers that are to be controlled by each of the output signals. You can assign dimmers to AMX192 and DMX512 outputs **or** D54 and DMX512 outputs, but you cannot use both the AMX192 and D54 protocols at the same time.

Press

3 *

from the *Setup* display to see the *Output Protocol* menu.



1 through 8

Lets you select the output signal for which you wish to specify dimmers.

*

Clears the current dimmer assignment for the selected output.

[start dimmer #] THRU [end dimmer #] *

Assigns a range of dimmers to the selected control signal. You cannot use AND in this command.

Patch Display

The *Patch* display lets you assign dimmers to channels, assign dimmer type (2.4Kw or 6K/12K), and set maximum levels for each dimmer. You can only assign a dimmer to a single channel. However, there are four patch tables, each of which can have completely different patching and proportional level information. You access a patch display by specifying the patch table you wish to look at or modify. Specifying no patch table number displays the currently active patch table.

Press

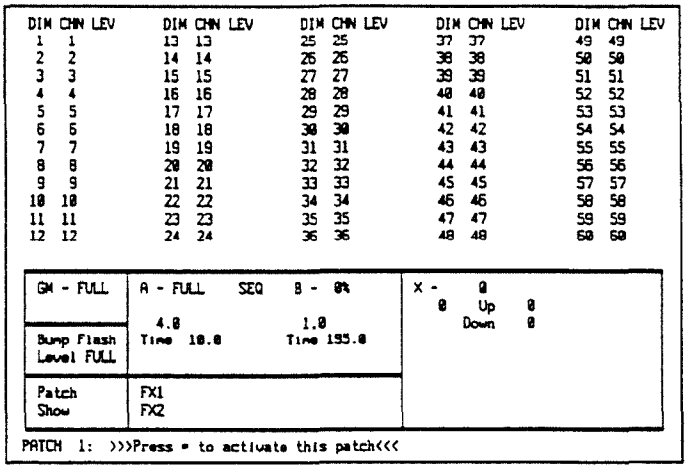
[PATCH] [*]

to see the current *Patch* display.

Press

[PATCH] [#] [*]

to see a specific *Patch* display.



Move Around the Display

[NEXT +1] pages forward through dimmers, 60 dimmers at a time.

[LAST -1] pages backward through dimmers, 60 dimmers at a time.

Modify Patch Tables

[PATCH] [#] [*]

Displays a particular patch table on screen without activating it. **>>>Press * to activate this patch<<<** appears on the command line if it is not the current patch. Starting any patch command will give you access to the patch table for editing without activating it.

[PATCH] [#] [*] [*]

Displays a particular patch table on screen and activates it. After the first [*], **>>>Press * to activate this patch<<<** appears on the command line if it is not the current patch. Press [*] a second time to get access for editing and activate the patch table.

Copy Patch Tables

[PATCH] [from #] [@] [PATCH] [to #] [*] [*]

Copies one patch table into another. >>>PLEASE CONFIRM<<< appears on the command line after you press [*] the first time. >>>COPIED<<< appears on the command line when the patch taple has been copied.

Dimmer Lists

Dimmer lists are an easy way to specify more than one dimmer at a time, and can be used as part of many commands in the Patch display. Dimmer lists can consist of a single dimmer number, and are shown as **[list]** below.

[dimmer] [AND] [dimmer]

Selects two dimmers for scroller control or assigning levels. You can select more than two dimmers by using [AND] repeatedly. You can use [AND] and [THRU] in the same command line.

[dimmer] [THRU] [dimmer]

Selects all dimmers between the two listed dimmers (inclusive) for scroller control or assigning levels. You can use [AND] and [THRU] in the same command line.

Patch Dimmers

[list] [@] [channel] [*]

Assigns the listed dimmers to the selected channel without specifying a maximum level.

The system does not show maximum levels of 100%.

[@] [#] [*]

Flags all of the dimmers assigned to the specified channel.

[@] [*]

Unlags all of the dimmers currently flagged for channel identification.

[list] [@] [*]

Unpatches the listed dimmers from their assigned channels.

Assign or Change Maximum Levels

Each dimmer can have a maximum level. This lets you adjust the relative levels of dimmers within a channel.

[list] @ [channel] @ [level]

Assigns the listed dimmers to the selected channel with a maximum level.

[list] @ @ [level]

Assigns a maximum level to the listed dimmers without changing their channel assignment.

[list] @ @ FULL

Returns the maximum level of the selected dimmers to 100% (clears the proportional patch).

Assign Dimmer Type

For CD80 systems and CD80 Packs you must tell the system which dimmers are 2.4Kw and which are 6.0Kw or 12.0Kw. This is necessary because there are two 2.4Kw dimmers per module, and only one 6.0Kw dimmer. If you do not make this assignment, you dimmers will not address properly.

> *All dimmers should remain set as 2.4Kw dimmers in systems using DMX512 dimmer protocol, in CD90 dimmer systems, in systems using demultiplexers to drive analog dimmers, and for CD80 digital Packs. If you have AMX192 protocol dimmers from manufacturers other than Strand Lighting, you should check the documentation with your dimmers to see if you need to set dimmer type here.*

[list] ★

Toggles the dimmer type from 2.4Kw to 6K/12K and back. 6K/12K assignments will track to all patch tables, regardless of the patch table in which they are made. 6K/12K assignments are shown with the specified dimmer number displayed with white characters on a red background (white on red).

★ ★

Sets all dimmers back to 2.4Kw assignment.
`CLEAR 6/12KW ASSIGNMENTS? • >>>PLEASE!CONFIRM<<<` appears after the first ★. Press ★ again to confirm the action, or CLEAR to abort the procedure.

Playback Controls

The *Playback* controls let you play back previously recorded cues. The following controls are considered a part of the Playback Controls:

- Grand Master
- FADER A/B
- FADER X
- FADER FX1 and FADER FX2
- Bump Master

Details about these controls are shown under each control name elsewhere in this chapter.

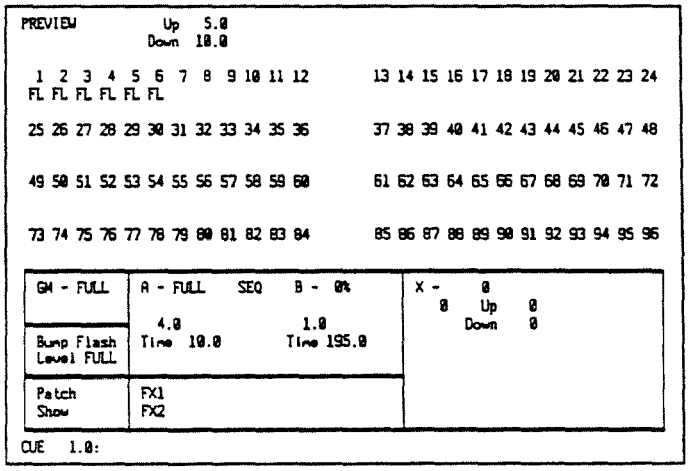
Preview Display

The *Preview* display lets you set channel output levels on stage. You access this display by specifying the cue you wish to look at or modify. You can use it to set light levels blind and then record these levels into cues.

Press

CUE [#] [*]

to see the *Preview* display.



- Yellow channel levels are higher than the last cue.
- Green channel levels are lower than the last cue.
- Cyan channels are unchanged from the last cue.

Move Around the Display

NEXT +1 pages forward through channels, 96 channels at a time.

LAST -1 pages backward through channels, 96 channels at a time.

Channel Lists

Channel lists are an easy way to specify more than one channel at a time, and can be used as part of many commands in the *Stage*, *Preview*, and *Submaster* displays. Channel lists can consist of a single channel number, and are shown as **[list]** below.

[channel] AND [channel]

Selects two channels for scroller control or assigning levels. You can select more than two channels by using AND repeatedly. You can use AND and THRU in the same command line. Channel lists composed in this manner are shown as **[list]** below.

[channel] THRU [channel]

Selects all channels between the two listed channels (inclusive) for scroller control or assigning levels. You can use AND and THRU in the same command line. Channel lists composed in this manner are shown as **[list]** below.

Set Channel Levels

Channel control commands work from the *Stage*, *Preview*, and *Submaster* displays to control or modify channel levels. When you are in the *Stage* display the results of these commands appear on stage and the system puts channels into Independent mode. When you are in a *Preview* or *Submaster* display these commands modify cues and submasters, and the system does not put channels into Independent mode. The second digit (0 - 9) after the channel number completes the command (no * needed). You can also use FULL to complete the command line and set selected channels to FULL.

[list] *

Puts the listed channels under Scroller control.

*

Puts all channels with a level greater than ZERO under Scroller control.

[list] @ [level]

Sets selected channel(s) to the specified level and puts them under Scroller control.

[list] @ FULL

Sets selected channel(s) to the specified level and puts them under Scroller control.

^ and v

Let you control the levels of all currently selected channels.

Record Cues Blind

All changes you make in channels levels while you are in a *Preview* display are automatically recorded. You can record cues from scratch by selecting a non-existant cue and setting the levels as required.

Modify Cues Blind

You can modify any previously recorded cue by calling it up in a *Preview* display and changing the channel levels. All changes you make while you are in a *Preview* display are automatically recorded.

Assign or Change Cue Attributes

You can modify cue attributes (Time, Delay, Wait, and Link) while you are in the *Stage*, *Preview*, or *Cue Sheet* display. You can change all attributes at the same time by stringing the commands together before pressing ★.

CUE [#] TIME [time] ★

Modifies the fade time of the selected cue. Dimmers going up and dimmers going down will fade at the same rate.

CUE [#] TIME [up time] AND [down time] ★

Modifies the fade time of the selected cue. Dimmers going up and dimmers going down will fade at different rates.

CUE [#] DELAY [time] ★

Adds a delay time to all dimmers fading up and all dimmers fading down in the selected cue.

CUE [#] DELAY AND [time] ★

Adds a delay time to all dimmers fading down in the selected cue.

CUE [#] DELAY [time] AND ★

Adds a delay time to all dimmers fading up in the selected cue.

CUE [#] WAIT [time] ★

Adds a wait time to the selected cue. This is the time from the start of the cue until the start of the next cue. To start the next cue when this cue ends, assign the same fade and wait times.

CUE [#] LINK TO [#] ★

Links the first cue listed to the second cue. This will cause the automatic sequencing to take the linked cue next after the current cue rather than the next highest cue number.

If you are already in the preview display for the "from" cue you do not need to enter **CUE [#]**.

Delete Cue Attributes

You can delete cue attributes (Time, Delay, Wait, and Link) while you are in the *Stage*, *Preview*, or *Cue Sheet* display.

CUE [#] TIME *

Deletes the fade time from the selected cue. This sets the fade time to ZERO seconds.

CUE [#] DELAY *

Deletes the delay time or times from the selected cue.

CUE [#] WAIT *

Deletes the wait time from the selected cue.

CUE [#] LINK TO *

Deletes the link from the selected cue.

Make Channels Track

When you are in a *Preview* display you can force the currently selected channels to track rather than to be recorded only in this cue.

* lets you access Track function if if you have just selected and/or changed the levels of channels. The command line will show >>>TRACK ?<<<. Press * again to force the currently selected channels to track.

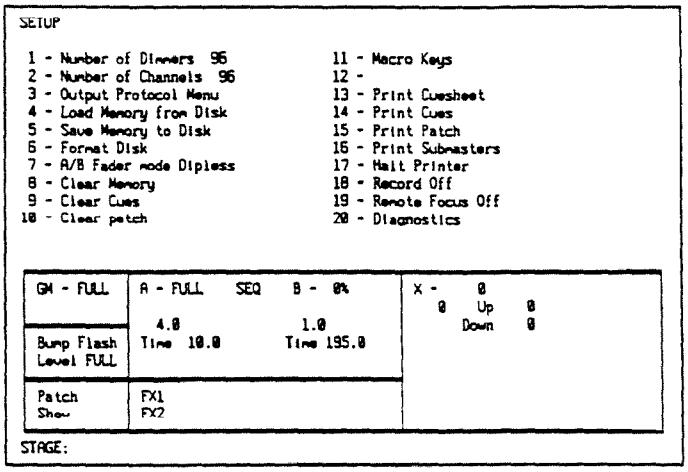
Setup Display

The *Setup* display lets you set system parameters and use the floppy disk drive.

Press

SETUP

to see the *Setup* display.



System Setup

The *Setup* display lets you tell the system how many dimmers and channels you have.

1 * [# of dimmers] *

Sets the number of dimmers in the system.

2 * [# of channels] *

Sets the number of channels in the system.

3 *

Gets you to the *Output Protocol* menu (see page 57).

1 8 * *

Turns the Record option ON/OFF (alternate action). When this is ON, all functions that can change memory are locked out.

1 9 * *

Turns the Hand Held Remote ON/OFF (alternate action). You should always turn the hand Held Remote OFF when it is unplugged.

2 0 *

Starts a memory diagnostic and displays the current version number.

Library Storage

You can use the floppy disk to store shows for backup or for archiving and later retrieval. You can store up to four shows on each 3.5" 720Kb hard shelled floppy disk.

4 *

Initiates a Load Memory request. The command line shows SETUP: 4 - LOAD MEMORY FROM DISK (1-4 ?).

[#] * *

Loads system memory from one of four shows on a pre-recorded disk. The system assumes show #1 if no number is entered. The system displays >>>LOADING MEMORY<<< during the memory load and >>>COMPLETE<<< when memory load is done.

5 *

Initiates a Save Memory request. The command line shows SETUP: 5 - SAVE MEMORY TO DISK (1-4 ?).

[#] * *

Saves system memory to one of four shows on a disk. The system assumes show #1 if no number is entered. The system displays >>>SAVING MEMORY<<< during the memory save and >>>COMPLETE<<< when memory save is done.

6 * *

Requests a disk format and check. You must format all new disks before first use. The command line shows >>>PLEASE CONFIRM<<< after the first *. Press CLEAR to cancel the request or * to format the disk. The system displays >>>FORMATTING<<< while formatting is in progress and >>>COMPLETE<<< when formatting is done.

Fader Algorithm

You can change the fader algorithm on FADER A/B to make it either a pile-on fader or a dipless crossfader. In dipless mode the algorithm is optimized for normal crossfades where the two handles are moved together. In pile-on mode, the algorithm is optimized for random motion of the two fader handles at different rates and in different directions.

7 * *

Changes the fader pile-on mode. The command line shows >>>PLEASE CONFIRM<<< after the first *. Press CLEAR to cancel the request or * to change the fader mode.

Clear Memory

The Clear Memory functions let you clear all or part of the system memory.

8 * *

Clears all console memory. The command line shows >>>PLEASE CONFIRM<<< after the first *. Press CLEAR to cancel request or * to clear all system memory. The command line shows >>>COMPLETE<<< when memory is cleared.

8 * *

Clears only the cues and cue sheet from memory. The command line shows >>>PLEASE CONFIRM<<< after the first *. Press CLEAR to cancel request or * to clear cues and the cue sheet. The command line shows >>>COMPLETE<<< when cues and the cue sheet are cleared.

1 0 *

Requests a patch table reset. The command line will show SETUP: 10 - CLEAR PATCH ?.

[list] * *

Resets the selected patch table or patch tables. You can use AND and THRU to formulate a list of patch tables. The command line shows >>>PLEASE CONFIRM<<< after the first *. Press CLEAR to cancel request or * to reset the selected patch tables. The command line shows >>>COMPLETE<<< when patch tables are cleared.

Macro Keys

You can record a sequence of keystrokes on any one of eight macro keys for later playback. This lets you easily recall sequences of keystrokes that you may use frequently.

1 1 *

Enters the Macro key definition mode.

[#] *

Starts the record action for the selected Macro key (1-8).

[macro keystrokes]

Once you are in macro recording mode and heve selected a macro number, the keystrokes until you press MACRO * again will be recorded in the macro.

MACRO *

Completes the record action for the selected Function Key.

Print Hard Copy

You can print all or part of the show information you have programmed, so that you can later refer to hard copy if required.

> *Do not try to use these commands unless a printer is hooked up and is on line.*

1 3 * [list] *

Prints a hard copy of the listed CueSheet segment. To print a hard copy of entire CueSheet, do not enter **[list]**.

1 4 * [list] *

Prints a hard copy of the Preview Display for the listed cues. To print a hard copy of all cues, do not enter **[list]**.

1 5 * [list] *

Prints a hard copy of the specified patch tables. To print a hard copy of all patch tables, do not enter **[list]**.

1 6 * [list] *

Prints data for the selected submasters. To print a hard copy of all submaster data, do not enter **[list]**.

1 7 *

Halts output from the console to the printer.

> *The printer will continue printing until its input buffer is exhausted or until you turn it OFF.*

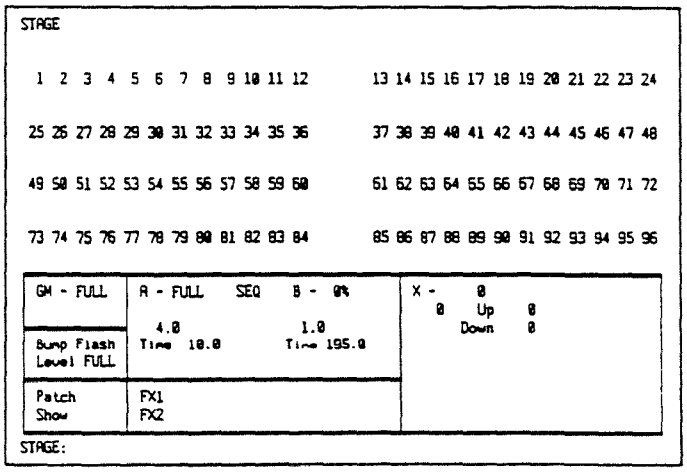
Stage Display

The *Stage* display lets you set channel output levels on stage. You can use it to set light levels on stage and to record these levels into cues.

Press

STAGE

to see the *Stage* Display.



- **Yellow** channels take their level information from **FADER X**.
- **Green** channels take their level information from Fader A/B.
- **Cyan** channels take their level information from Submasters or Bump Buttons.
- **Magenta** channels take their level information from **FADER FX1** or **FADER FX2**.
- **Red** channels are Independent channels.

Move Around the Display

NEXT +1 pages forward through channels, 96 channels at a time.

LAST -1 pages backward through channels, 96 channels at a time.

Channel Lists

Channel lists are an easy way to specify more than one channel at a time, and can be used as part of many commands in the *Stage*, *Preview*, and *Submaster* displays. Channel lists can consist of a single channel number, and are shown as **[list]** below.

[channel] AND [channel]

Selects two channels for scroller control or assigning levels. You can select more than two channels by using AND repeatedly. You can use AND and THRU in the same command line. Channel lists composed in this manner are shown as **[list]** below.

[channel] THRU [channel]

Selects all channels between the two listed channels (inclusive) for scroller control or assigning levels. You can use AND and THRU in the same command line. Channel lists composed in this manner are shown as **[list]** below.

Set Channel Levels

Channel control commands work from the *Stage*, *Preview*, and *Submaster* displays and control or modify channel levels. When you are in the *Stage* display the results of these commands appear on stage and the system puts channels into Independent mode. When you are in a *Preview* or *Submaster* display these commands modify cues and submasters, and the system does not put channels into Independent mode. The second digit (0 - 9) after the channel number completes the command (no * needed). You can also use FULL to complete the command line and set the selected channels to FULL.

[list] *

Puts the listed channels under Scroller control.

*

Puts all channels with a level greater than ZERO under Scroller control.

[list] @ [level]

Sets selected channel(s) to the specified level and puts them under Scroller control.

[list] @ FULL

Sets selected channel(s) to the specified level and puts them under Scroller control.

^ and v

Let you control the levels of all currently selected channels.

Restore Channels to Fader Control

You can restore channels from Independent mode to fader control by matching the current channel level with the Scroller or Command keys, or one of the following commands.

[list] @ * *

Restores listed independent channels to fader control.

AT - RESTORE ? appears on the command line after the first *. Press again to actually restore the dimmers. >>>RESTORED<<< appears on the command line to confirm that dimmers are restored to fader control.

@ * *

Restores all independent channels to fader control.

AT - RESTORE ? appears on the command line after the first *. Press again to actually restore the dimmers. >>>RESTORED<<< appears on the command line to confirm that dimmers are restored to fader control.

Check Dimmers

You can check dimmers individually and quickly if you are in the *Stage* display.

DIM [#] @ [level]

Sets a dimmer to a level, bypassing any channel information for that dimmer.

DIM [#] @ FULL

Sets a dimmer to FULL, bypassing any channel information for that dimmer.

NEXT +1

Sets the next dimmer to the same level as the current dimmer level and restores the current dimmer to its original channel level.

NEXT +1

Sets the last dimmer to the same level as the current dimmer level and restores the current dimmer to its original channel level.

Record Cues Live

You can record cues from stage levels with REC LIVE or from "SCENE A" controller levels with REC A. When using REC A the system ignores Fader A, Grand Master, and Blackout Switch positions.

REC LIVE [#] ★

Records stage levels into the selected cue number. For new cues the system assumes a manual fade. There is no prompt when you are recording a new cue.

REC A [#] ★

Records the levels currently on Fader a into the selected cue number. This command ignores the Fader A, Grand Master, and Blackout Switch positions. For new cues the system assumes a manual fade. There is no prompt when you are recording a new cue.

> *You can assign cue attributes to a cue as you are recording it by stringing the attribute commands into the record command line before you press ★. See* Assigning or Changing Cue Attributes *below.*

Modify Cues Live

To re-record a cue, follow the same procedure as for recording the same cue number. >>>DEFINED AS A CUE MEMORY - RERECORD?<<< or >>>DEFINED AS AN FX MEMORY - RERECORD?<<< will appear on the command line whenever there is an existing memory or Effects memory. Press ★ to confirm the cue overwrite or CLEAR to cancel the command.

Assign or Change Cue Attributes

You can modify cue attributes (Time, Delay, Wait, and Link) while you are in the *Stage*, *Preview*, or *Cue Sheet* display. You can change all attributes at the same time by stringing the commands together before pressing ★.

CUE [#] TIME [time] ★

Modifies the fade time of the selected cue. Dimmers going up and dimmers going down will fade at the same rate.

CUE [#] TIME [up time] AND [down time] ★

Modifies the fade time of the selected cue. Dimmers going up and dimmers going down will fade at different rates.

CUE [#] DELAY [time] ★

Adds a delay time to all dimmers fading up and all dimmers fading down in the selected cue.

CUE [#] DELAY AND [time] ★

Adds a delay time to all dimmers fading down in the selected cue.

CUE [#] DELAY [time] AND *

Adds a delay time to all dimmers fading up in the selected cue.

CUE [#] WAIT [time] *

Adds a wait time to the selected cue. This is the time from the start of the cue until the start of the next cue. To start the next cue when this cue ends, assign the same fade and wait times.

CUE [#] LINK TO [#] *

Links the first cue listed to the second cue. This will cause the automatic sequencing to take the linked cue next after the current cue rather than the next highest cue number.

Delete Cue Attributes

You can delete cue attributes (Time, Delay, Wait, and Link) while you are in the *Stage*, *Preview*, or *Cue Sheet* display.

CUE [#] TIME *

Deletes the fade time from the selected cue. This sets the fade time to ZERO seconds.

CUE [#] DELAY *

Deletes the delay time or times from the selected cue.

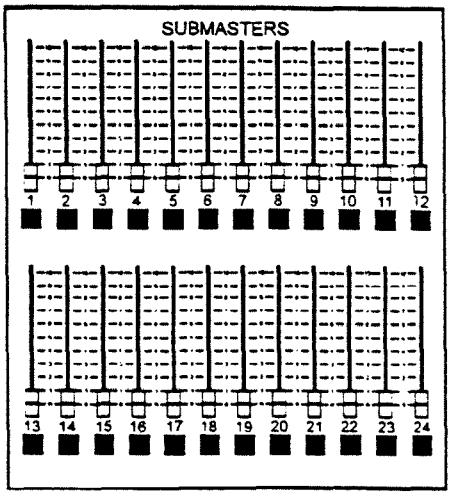
CUE [#] WAIT *

Deletes the wait time from the selected cue.

CUE [#] LINK TO *

Deletes the link from the selected cue.

Submaster Controllers



Submaster controllers let you set up groups of channels or recorded cues you wish to control together. You can use the Bump Buttons to bump the associated submaster to FULL if required.

LightBoard M can have 1 or 2 Submaster Modules, each with 24 submaster controllers. 8 remote inputs (submasters 25-32 or 49-56) let you control selected channels remotely. Channels assigned to submasters are at maximum levels when the submaster is at its upper limit ("10"), and OFF when the submaster is at its lower limit ("0").

The Submaster Bump Buttons associated with each submaster controller let you "bump" the submaster ON. LEDs in bump buttons show submasters which are ON at any level above 5%. If the Bump Master is set to "BUMP" then ON for these buttons means that pushing the bump button forces the associated submaster to the level set on the Bump Level Control. If the Bump Master is set to "SOLO" then ON for these buttons means that all other submasters are forced to OFF. If the Bump Master is OFF the bump buttons have no effect.

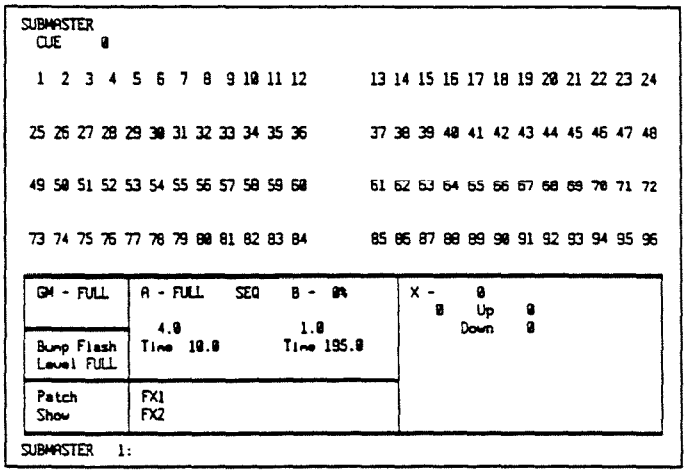
Submaster Display

The *Submaster* display lets you set channel levels for individual submasters. You access this display by specifying he submaster you wish to look at or modify.

Press

SUB [#] [*]

to see the *Submaster* Display.



- Yellow 0 shows submasters with channel assignments only.
- Green # shows channels assigned by cue
- Yellow # shows channels modified after assignment by cue.

Move Around the Display

NEXT +1 Selects the next highest individual *Submaster* display.

LAST -1 Selects the next lower individual *Submaster* display.

Channel Lists

Channel lists are an easy way to specify more than one channel at a time, and can be used as part of many commands in the *Stage*, *Preview*, and *Submaster* displays. Channel lists can consist of a single channel number, and are shown as **[list]** below.

[channel] AND [channel]

Selects two channels for scroller control or assigning levels. You can select more than two channels by using AND repeatedly. You can use AND and THRU in the same command line. Channel lists composed in this manner are shown as **[list]** below.

[channel] THRU [channel]

Selects all channels between the two listed channels (inclusive) for scroller control or assigning levels. You can use AND and THRU in the same command line. Channel lists composed in this manner are shown as **[list]** below.

Set Channel Levels

Channel control commands work from the *Stage*, *Preview*, and *Submaster* displays and control or modify channel levels. When you are in the *Stage* display the results of these commands appear on stage and the system puts channels into Independent mode. When you are in a *Preview* or *Submaster* display these commands modify cues and submasters, and the system does not put channels into Independent mode. The second digit ([0] through [9]) after the channel number completes the command (no [*] needed). You can also use [FULL] to complete the command line and set the selected channels to FULL.

[list] [*]

Puts the listed channels under Scroller control.

[*]

Puts all channels with a level greater than ZERO under Scroller control.

[list] [@] [level]

Sets selected channel(s) to the specified level and puts them under Scroller control.

[list] [@] [FULL]

Sets selected channel(s) to the specified level and puts them under Scroller control.

[^] and [v]

Let you control the levels of all currently selected channels.

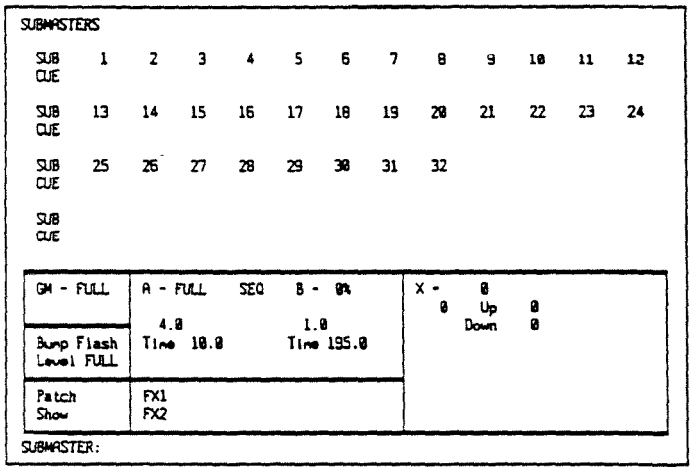
Submasters Display

The *Submasters* display lets you assign cues to submasters as required.

Press

SUB *

to see the *Submasters* Display.



- Yellow 0 shows submasters with channel assignments only.
- Green # shows channels assigned by cue
- Yellow # shows channels modified after assignment by cue.

Move Around the Display

NEXT +1 pages forward through submasters, 48 submasters at a time.

LAST -1 pages backward through submasters, 48 submasters at a time.

[sub #] @ [cue #] *

Selects a submaster and specifies a cue for assignment. The system displays >>>COMPLETE<<< when the submaster is loaded.

[sub list] @ [cue #] *

Specifies a submaster list and specifies a starting cue number for assignment. Cues (up to the number of submasters specified) will be assigned in numerical order until there are no more cues. The system displays >>>COMPLETE<<< when submasters are loaded. AND may not be used in this list.

[sub list] @ *

Selects a submaster list to be cleared of all information. The system displays >>>COMPLETE<<< when submasters are clear.

Chapter 9

Tutorial

LightBoard M is a compact and powerful lighting control console which lets you set levels manually and/or using a keypad depending on its configuration.

LightBoard M uses a proprietary user interface designed specifically for stage and studio lighting. Despite its power and sophistication, you should find it easy to learn and operate. This tutorial will help you to learn the basics, so that you can quickly operate lights, and record and play back cues.

Once you know the basics, you can easily use most of the functions without having to reference extensive or complicated instructions. This tutorial does not address every function available to you with this console. Complete details on all functions are found in the *Reference* chapter of this manual.

When learning the system, and later when operating it, remember one thing above all - **Relax and enjoy yourself**. Don't worry about making mistakes. Explore the commands as you go through this tutorial. Feel free to experiment. you cannot damage the console with erroneous commands.

Turn the Console On

Turn the console ON by turning the rocker switch on the rear of the console ON. This applies power to the console and to the two auxiliary connectors on the rear of the console (marked "Printer" and "Monitor").

Set Channel Levels

You can set light levels live using the Channel Controllers and FADER A/B, or using the keyboard and Scroller. Channels set using the keyboard and Scroller are independent. These levels override other channel input controls and fader outputs, and remain independent until you match them to the other source levels, or restore them. Channel levels are shown on the *Mode* display.

This demonstration assumes that the system has a clear memory. If not, follow instructions in the "Setup Menu" chapter to clear memory.

Use Channel Controllers

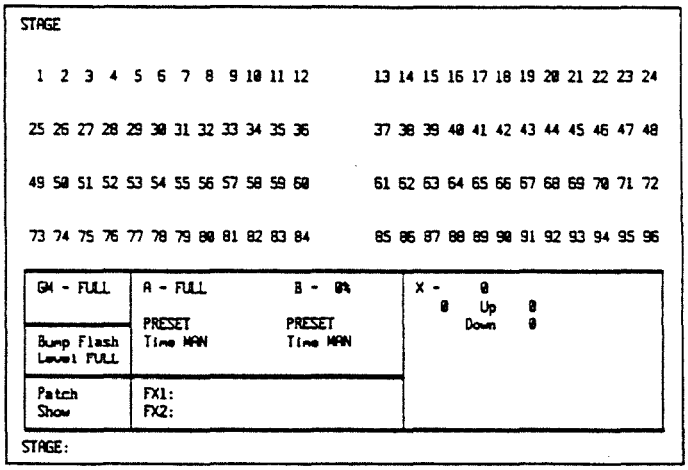
You can set channel levels using the manual controllers for FADER A ("SCENE A") or FADER B ("SCENE B")). This demonstration sets channel levels using "SCENE A".

For this demonstration, push the Blackout switch to ON and the Grand Master to its upper limit. Move FADER A/B to its upper limit. Turn FADER A and FADER B Time Controls to their 7 o'clock position ("0").

Press

STAGE

to see the *Stage* display.



Channel colors show the level source for each channel:

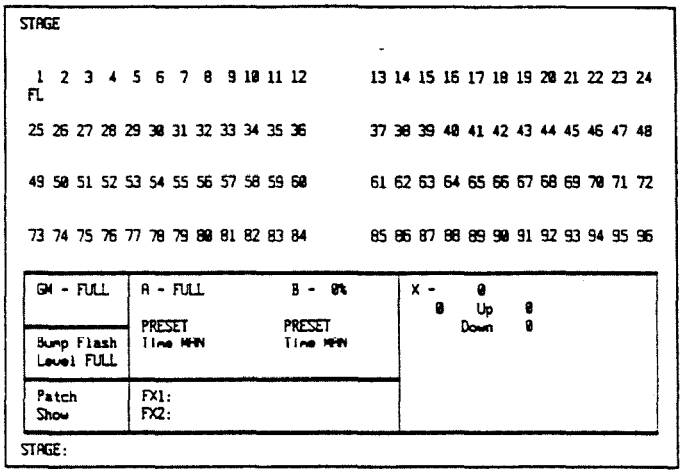
- **Yellow** channels take their level information from FADER X.
- **Green** channels take their level information from FADER A/B.
- **Cyan** channels take their level information from Submasters or Bump Buttons.
- **Magenta** channels take their level information from FADER FX1 or FADER FX2.
- **Red** channels are Independent channels.

> *It is not necessary to switch to the Stage display for this portion of the tutorial, since the manual controls are available from all displays. This was done so that you could easily see the results of your actions on the channels.*

For this demonstration, push the Blackout switch to ON and the Grand Master to its upper limit. Move FADER A/B to its upper limit. Turn FADER A and FADER B time controls ( ) to their 7 o'clock position ("0").

Move
the "SCENE A" channel 1 controller to 100%.

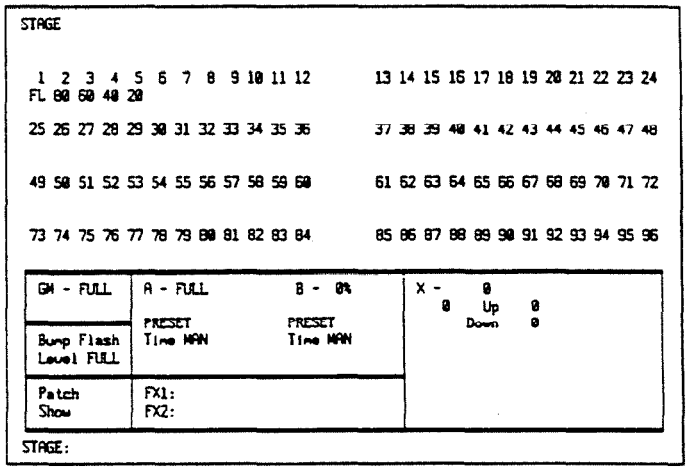
The channel level for channel 1 on the display follows controller movement. the channel level is green to show that its level source is FADER A/B



Adjust other "SCENE A" controllers as follows:

- Channel 2 = 80%
- Channel 3 = 60%
- Channel 4 = 40%
- Channel 5 = 20%

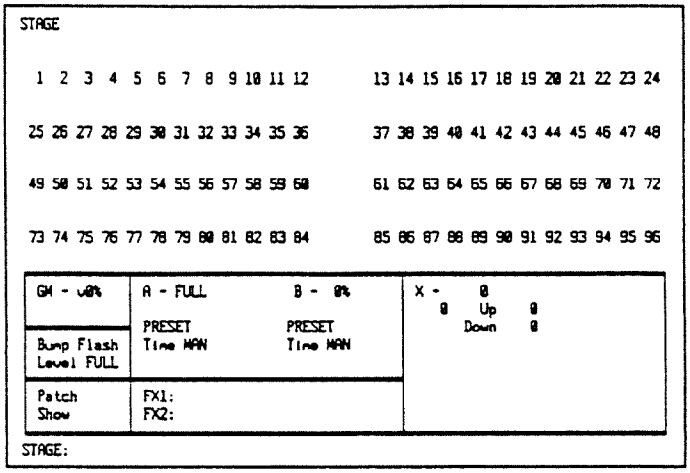
Channel levels for all of the channels will appear on your monitor.



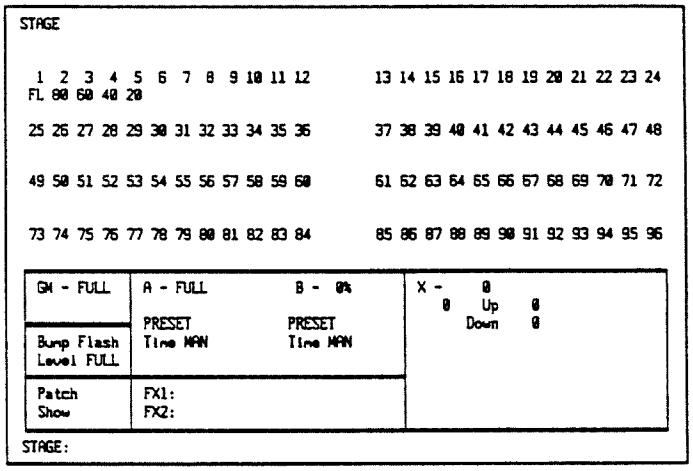
Use the Blackout Switch

You can use the Blackout switch ( ) to turn all lights OFF. This switch is on the output of the console and will turn all levels (including levels from Submasters) OFF.

Push the Blackout switch to OFF



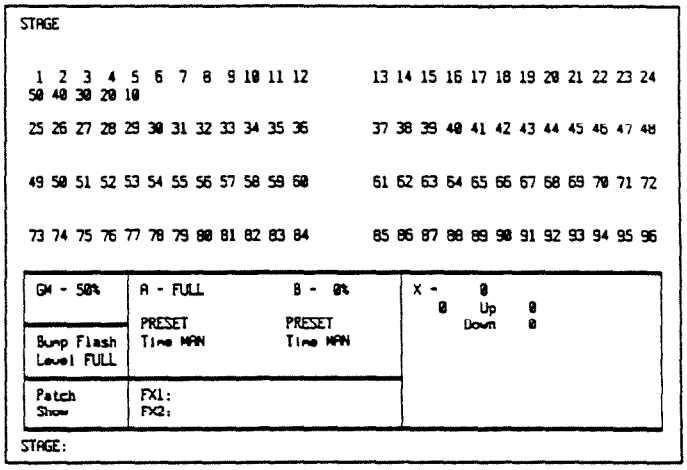
Push the Blackout switch to ON



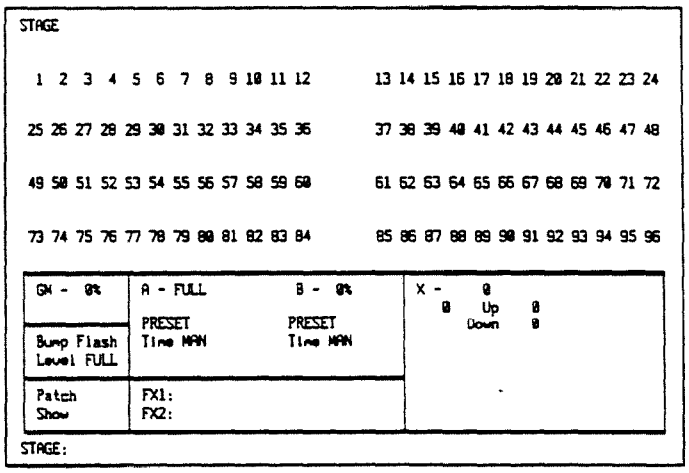
Use the Grand Master

You can also use the Grand Master to control the overall output lighting levels. If you use the Grand Master you will not be able to turn lights ON or OFF as quickly, but you will be able to fade lights out or reduce their overall level. Like the Blackout switch, this control affects all output including submasters.

Move the Grand Master to 50% ("5"). Lights on stage will fade to half of their set value.



Move the Grand Master to its lower limit ("0"). Lights on stage will fade to ZERO.

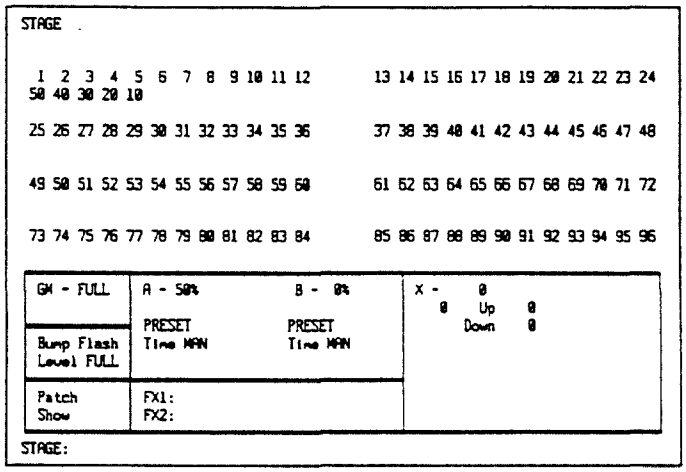


Move the Grand master to its upper limit ("10") to continue this tutorial.

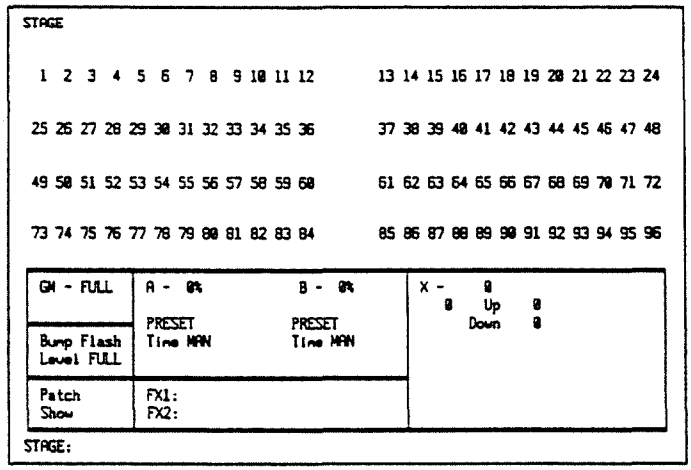
Set Channel Levels with Channel Controllers

You can use FADER A and "SCENE A" (or FADER B and "SCENE B") to control the overall level of lights set on channel controllers.

Move FADER A to 50% ("5"). Lights on stage will fade to half of their set value.



Move FADER A to is lower limit ("0"). Lights on stage will fade to ZERO.



Move FADER A to its upper limit ("10") to restore lighting levels to their set levels.

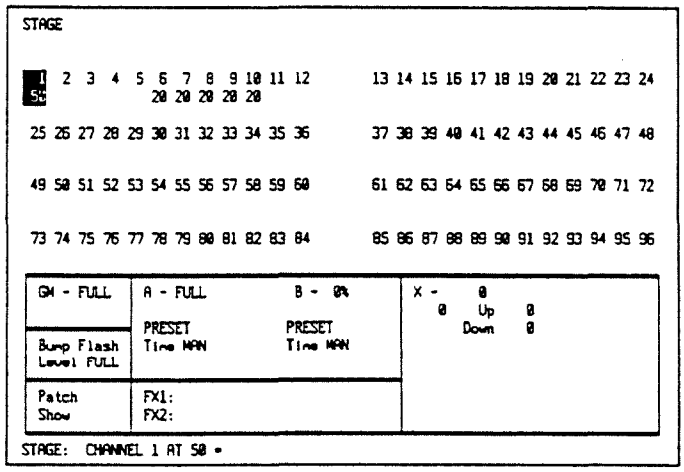
Move Move all "SCENE A" controllers to their lower limits ("0") to set all lights on stage to ZERO.

Set Channel Levels with the Keyboard

The system assigns any channel accessed by the Command Keypad in Stage mode to the Scroller (^ and v). Channels remain independent until you match levels with the current fader/submaster source level or restore independent channels to fader control.

Move
"SCENE A" channel 6 through 10 controllers to 20% to set up for this portion of this tutorial.

Press
1 @ 5 0
to bring channel 1 to 50% on stage.



The reverse video channel number shows that this channel is independent. Independent channels will not be affected by levels from other sources until you match levels with the current fader/submaster source level or restore independent channels to fader control.

The reverse video channel level shows that the dimmer is currently being controlled by the scroller.

Set Channel Levels with the Scroller

You can raise and lower channel levels using the scroller (^ and v) once you have made a channel selection.

Press ^ to raise the channel levels.

Press v to lower the channel levels.

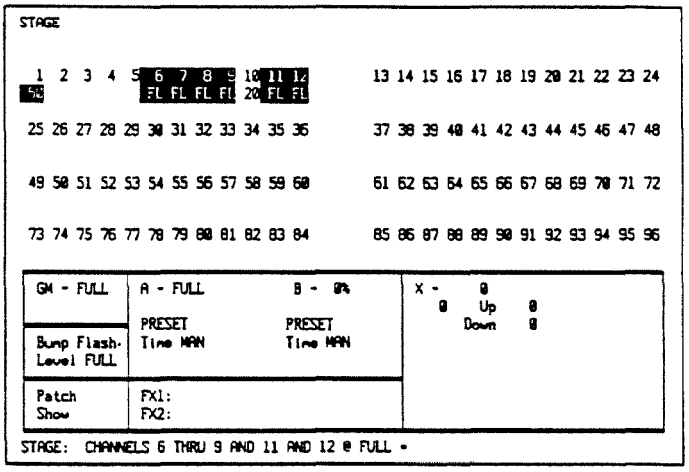
Set Multiple Channel Levels

To set multiple channels to the same level, specify the channels as a list using AND and THRU.

Press

6 THRU 9 AND 1 1
AND 1 2 @ FULL

to bring the selected channels on stage.



Set Levels for Selected Channels

If you already have channels selected on the scroller, you can easily change their level with the keypad or the scroller without reselecting them.

Press

∧ or ∨

to raise or lower the channel levels.

Press

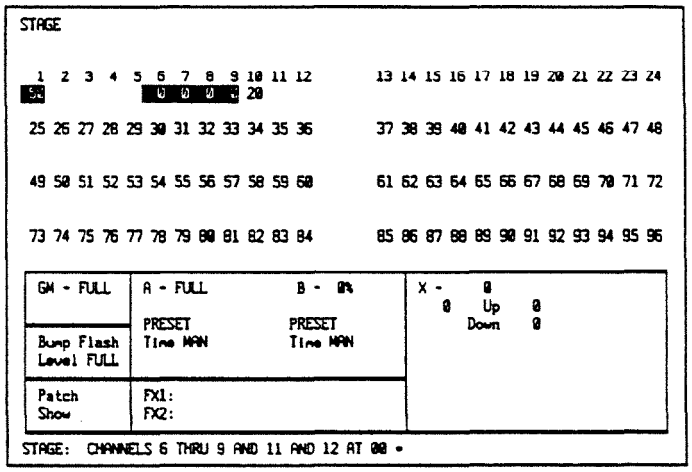
@ 5 0

to set the channels to 50%.

Press

@ 0 0

to set the channels to ZERO.



Channels 6 through 9 have levels from FADER A but are forced to ZERO in independent mode. Channels 11 and 12 are blank (ZERO level) because you matched their levels from other sources.

There is a difference between "0" as a level and no level. If there is no level shown the channel is not active (receiving no level instruction from any source). A red "00" under a channel number shows that it is receiving a level instruction from a source but that Independent mode is forcing the channel level to remain at ZERO.

Assign Channels to the Scroller

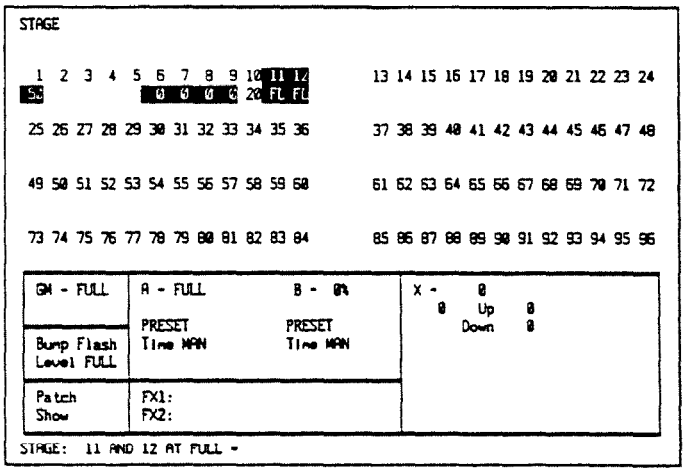
To assign specific channels to the scroller you type in the channel list and terminate it with or without specifying a level.

Press

1 1 AND 1 2 @ FULL *

to put channels 11 and 12 on the scroller at FULL.

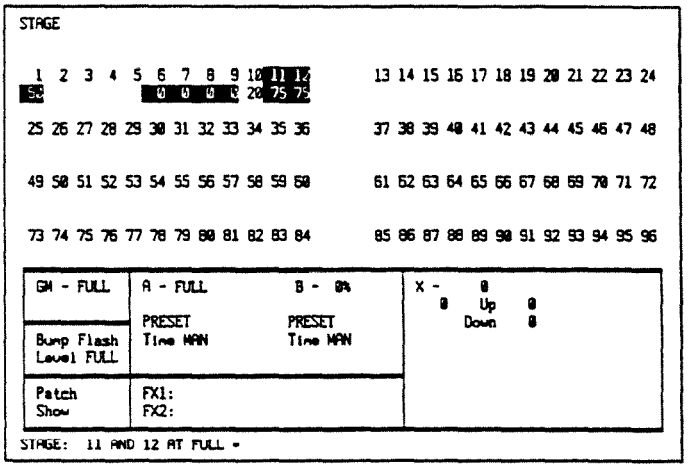
Channels 6 through 10 are released from the scroller but are still independent.



Press

V

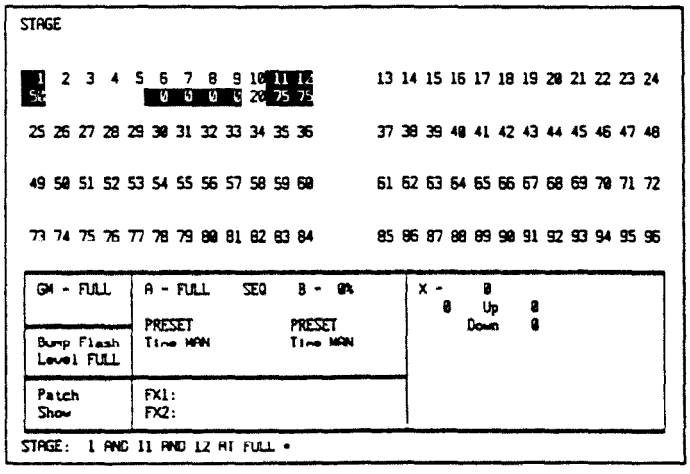
to move channels 11 and 12 to 75%.



Press

1 AND 1 1 AND 1 2 *

to put channels 1, 11 and 12 on the scroller without changing their levels.



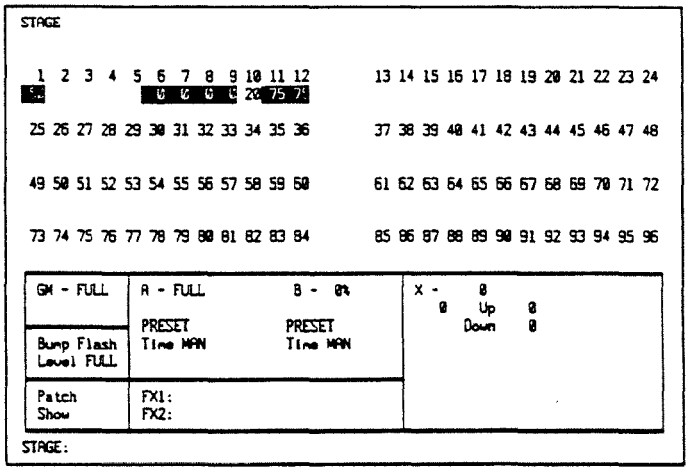
Clear Channels from Scroller Control

You can clear channels from SCROLLER control by pressing CLEAR. This does not release the channels from Independent mode.

Press

CLEAR

to clear all channels from Fader SCROLLER control



Assign Active Channels to the Scroller

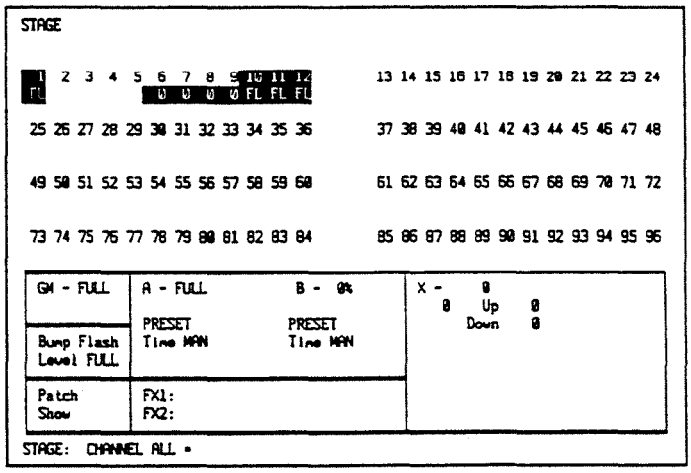
You can assign all non-ZERO active channels to the scroller with a single keystroke.

Press

*

to assign all non-ZERO active channels to SCROLLER control.

Even channel 10, which is active from the "Scene A" controllers, is assigned to the SCROLLER .



Raise channels to FULL using ^. Relative channel levels do not change. Channel levels reach FULL in the following sequence:

1. Channels 11 and 12
2. Channel 1
3. Channel 10

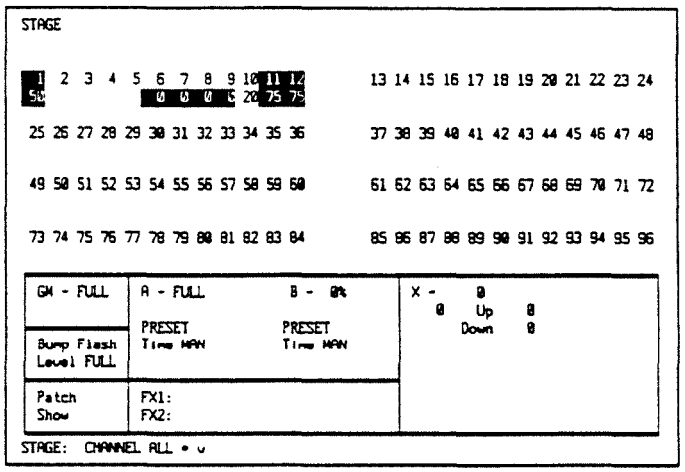
Release Channels from Independent

Channels are released from Independent mode automatically when their SCROLLER levels cross the level set by other sources, or can be released manually. You can release all channels or only selected channels from SCROLLER control.

Press

V

to lower the selected channels until channel 10 is at 20%.

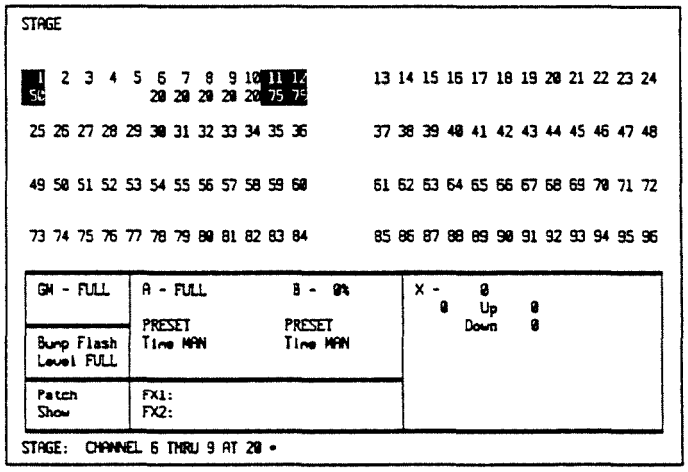


Channel 10 is released from Scroller and Independent mode when its level matches FADER A output (20%).

Press

6 THRU 9 @ 2 0

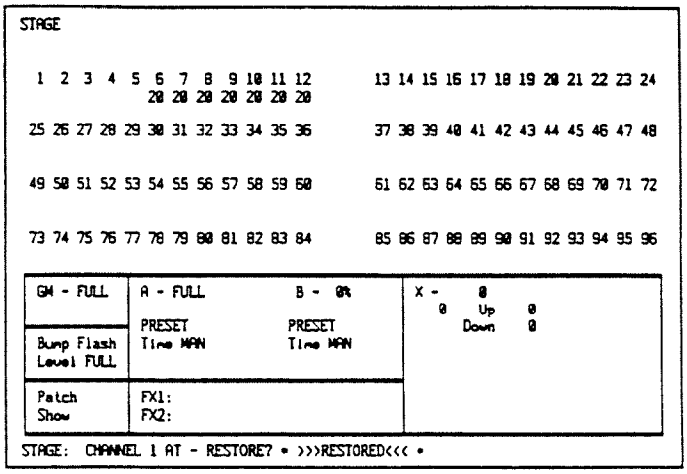
to release channels 6 through 9 from Independent mode.



Press

1 @ * *

to clear channel 1 from Independent mode.

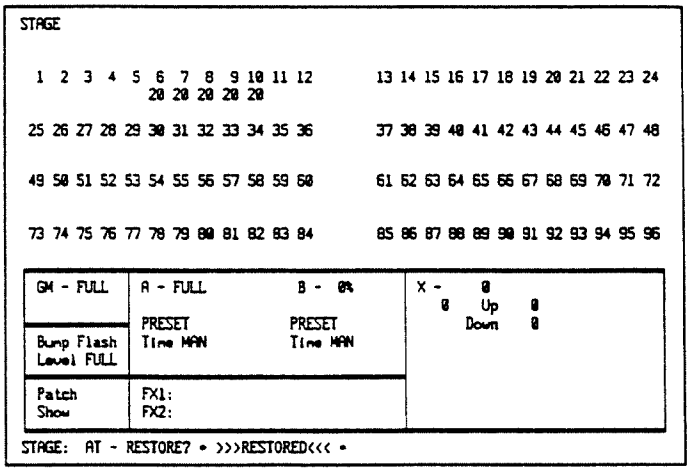


The system will ask RESTORE ? • >>>PLEASE CONFIRM<<< after the first * to make sure you want to do this. You can cancel the action by pressing CLEAR.

Press

CLEAR @ * *

to clear all remaining channels from Independent mode.



Bump Buttons

Channel Bump buttons have 3 modes of operation.

- If the Bump Control Switch is in the "BUMP" position, pushing a bump button takes the channel to the level set on the Bump Level Control.
- If the Bump Control Switch is "OFF," bump buttons have no effect.
- If the Bump Control Switch is in the "SOLO" position, pushing a bump button takes the channel to the level of the Bump Level Control and turns all other channels OFF, unless they are on Independent.

Record Cues

This section demonstrates channel level and fade time recording in Live (REC LIVE and REC A) and Blind (CUE and REC A) Modes. The Submasters section of this chapter (see page 149) demonstrates the use of submasters to form cues. The use of Delay and wait times, and link information in cues is demonstrated under Delays, Waits, and Cue Linking in this chapter (see page 123). The CueSheet lists recorded cues in numerical order. Cue 0 is a permanently recorded blackout.

This demonstration assumes the system has a clear memory. If not, follow instructions on page 160 to clear memory.

Make certain that the Blackout Switch is ON and the Grand Master is at 100%.

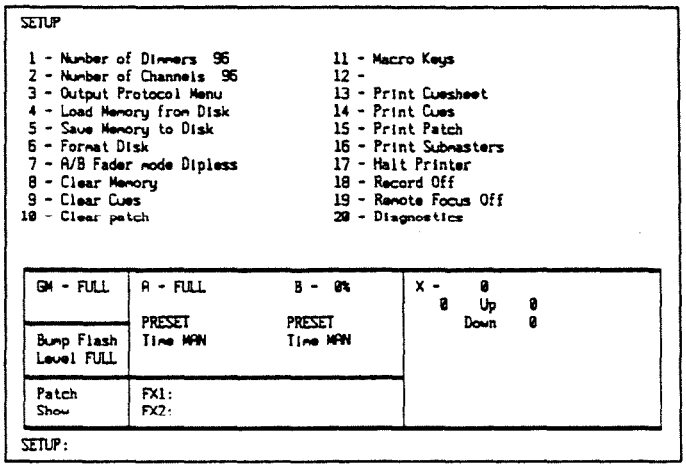
Enable Record Functions

In order to record cues, you must turn the "Record" entry in the *Setup* display (item #18) ON .

Press

SETUP

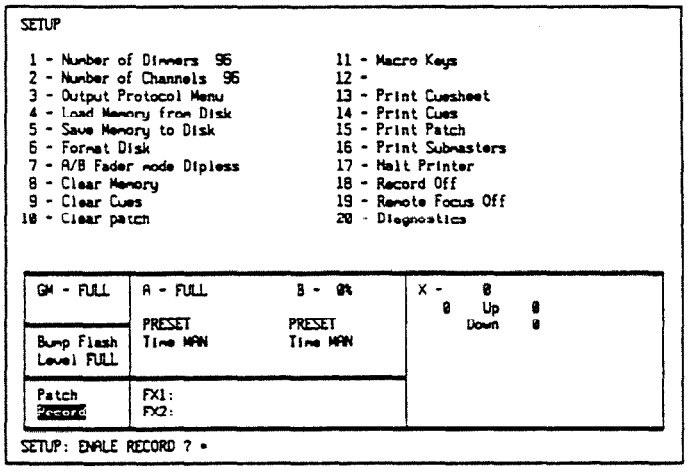
to see the *Setup* display.



Press

1 8 *

to enable recording.



After the first * the system asks ENABLE RECORD ? >>> PLEASE CONFIRM <<<.

Record Cues Live from Channel Controllers

You can bring channels on stage using the "Scene A" controllers and record the manually set levels by using [REC A].

Press

[CLEAR]

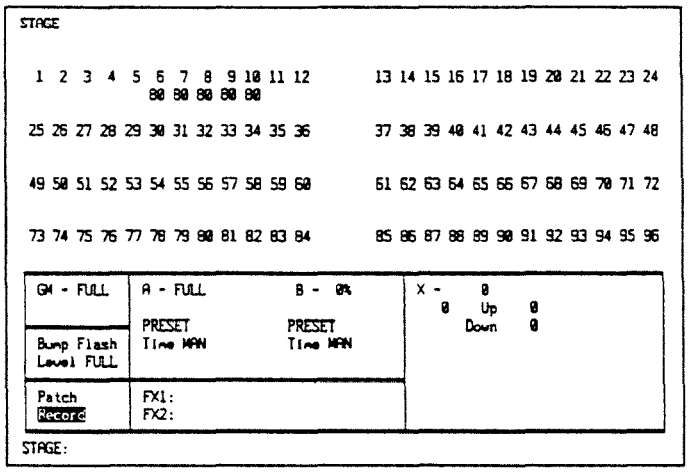
to clear the command line.

Set

"SCENE A" controllers 6 through 10 to FULL.

Set

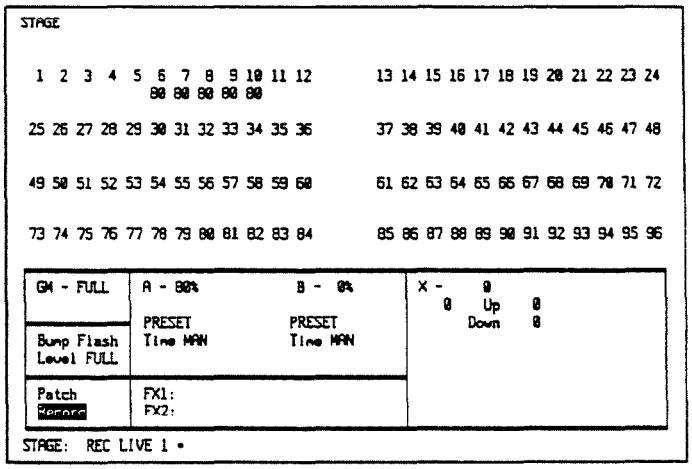
FADER A/B to 80%



Press

[REC LIVE] [1] [*]

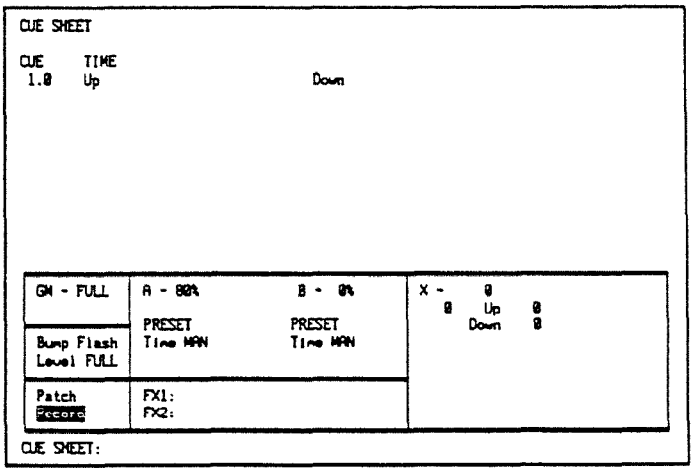
to record channels 6 through 10 in cue 1 at 80% (as they appear on stage).



Press

[CUE SHEET]

to see the *Cue Sheet* display with a cue 1 entry.



Record Cues Live from the Keyboard

You can also record a cue live after you have set the channels using the Command keypad.

Press

STAGE

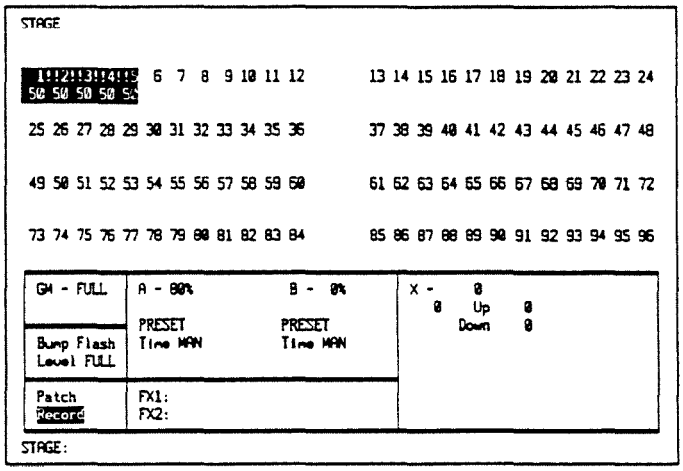
to return to the *Stage* display.

Set

"Scene A" controllers to ZERO.

Press

1 THRU 5 @ 5 0

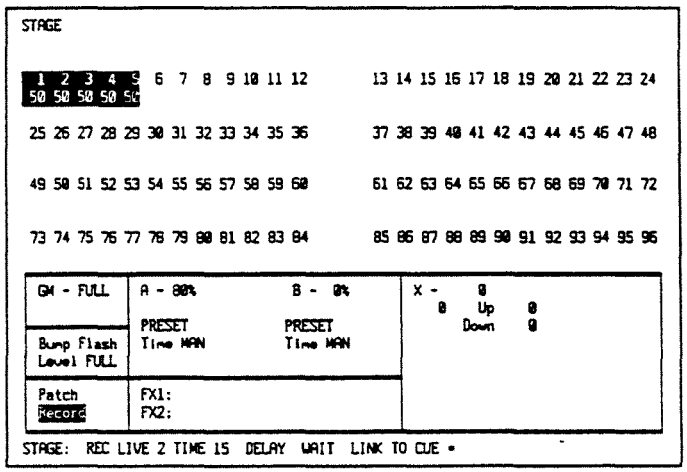


Channels are now on independent and under **SCROLLER** control.

Press

REC LIVE 2 TIME 1 5 *

to record the current stage levels into cue 2.



Cue 2 has an assigned time of 15 seconds. The maximum fade time allowed is 999.9 seconds.

The selected channels are still independent, but scroller control was cancelled when you stated the new command line.

Press

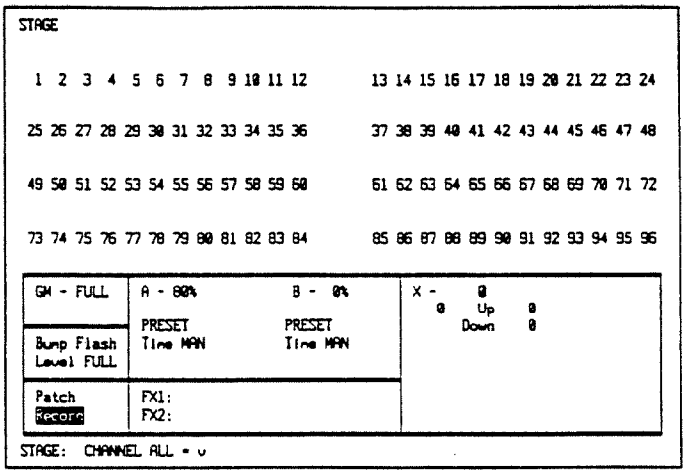
[*]

to get control of all channels.

Use

[V]

to scroll the channels to ZERO.



Channels scroll to ZERO and are released from independent, since there are no other level sources.

Record Cues with [REC A]

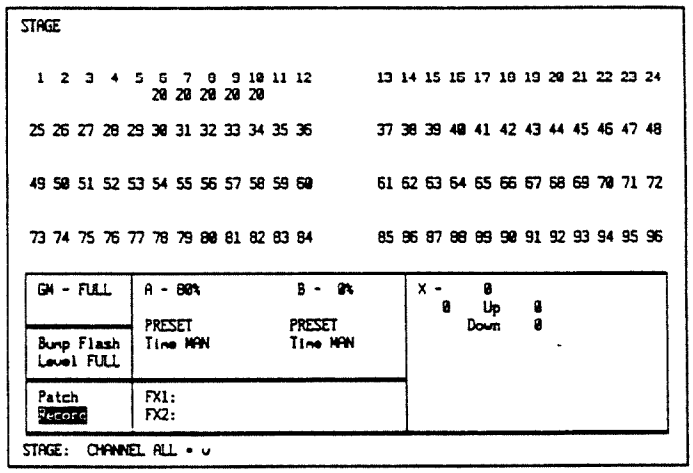
The procedure for recording from "SCENE A" is available only in Live Mode.

Set

FADER A to its upper Limit.

Set

"SCENE A" controllers 6 through 10 to 25% and controllers 11 and 12 to FULL.



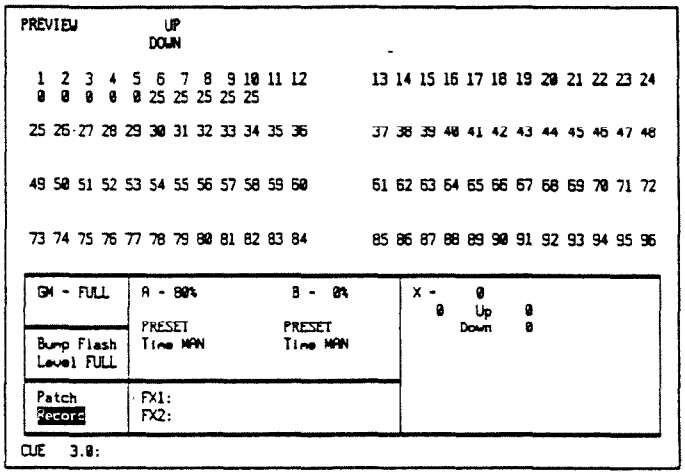
The channels only show up at 20% on stage because FADER A is at 80%.

Press [REC A] [3] [*] to record the "Scene A" levels as cue 3.

Press

CUE 3 *

to see the *Preview* display for cue 3.



Channels 1 through 5 show up with a level of ZERO (rahter than a blank) to show that they had levels in the previous cue.

Channels 6 through 10 are recorded at the "Scene A" controller levels (in this case 25%) rather than at the levels which appear on the *Stage* display.

Press

STAGE

to return to the *Stage* display.

Set

controllers 1 through 10 at 50% and controllers 11 and 12 at FULL

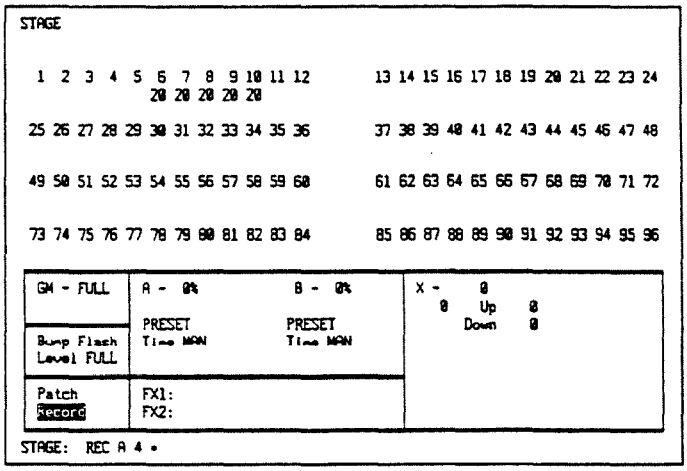
Set

FADER A to its lower limit.

Press

REC A 4 *

to record a cue 4.



This records "SCENE A" levels into cue 4. The position of FADER A has no effect on REC A.

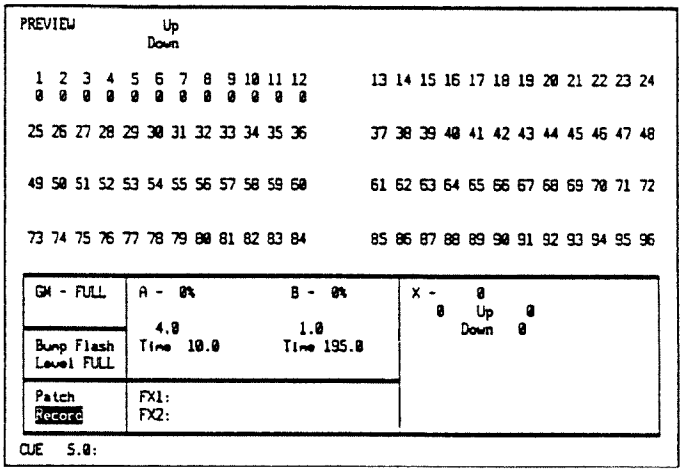
Record Cues Blind

You can record cues blind without any lights you assign to the cue appearing on stage. You must be in the *Preview* display to record cues blind.

Press

CUE 5 *

to see the *Preview* display for cue 5.



The channel levels are color coded so that you can easily tell how the channels moved from the previous cue.

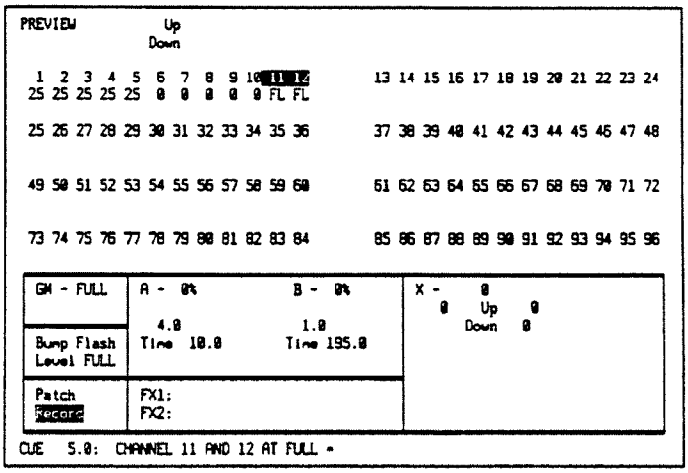
- Yellow channel levels are higher than the last cue.
- Green channel levels are lower than the last cue.
- Cyan channels are unchanged from the last cue.
- Channel levels of ZERO show that there were channel levels in the previous cue (cue 4).

Press

1 THRU 5 @ 2 5

1 1 AND 1 2 @ FULL

to record the selected channels in cue 5.



Caution

Any channel changes you make while you are in the Preview *display are automatically recorded.*

Channels 11 and 12 are on the scroller but are not changed to independent channels because you are in the Preview *display.*

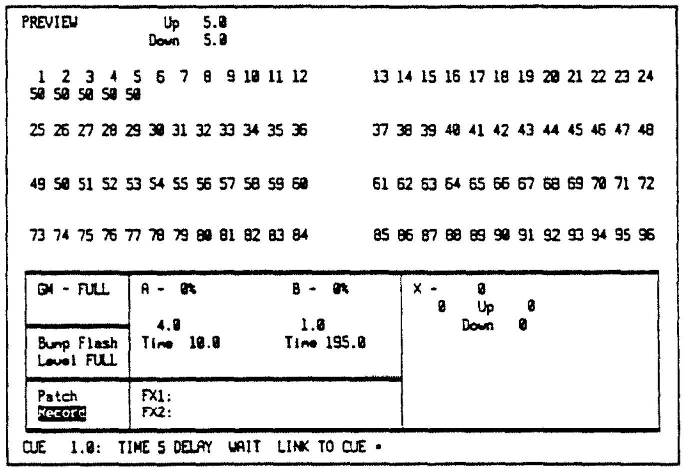
Set Fade Time Blind

To set a time for a cue while in a Preview display, you first need to switch to the appropriate preview display.

Press

[CUE] [1] [*] [TIME] [5] [*]

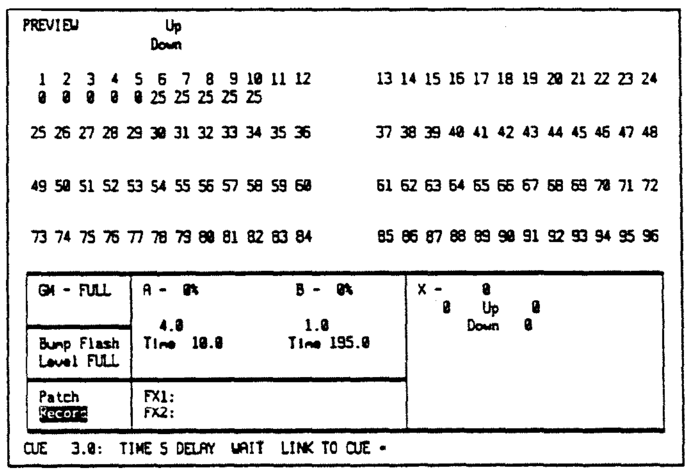
to set a fade time of 5 seconds for cue 1.



Press

[NEXT +1] [NEXT +1]

to see the cue 3 *Preview* display.

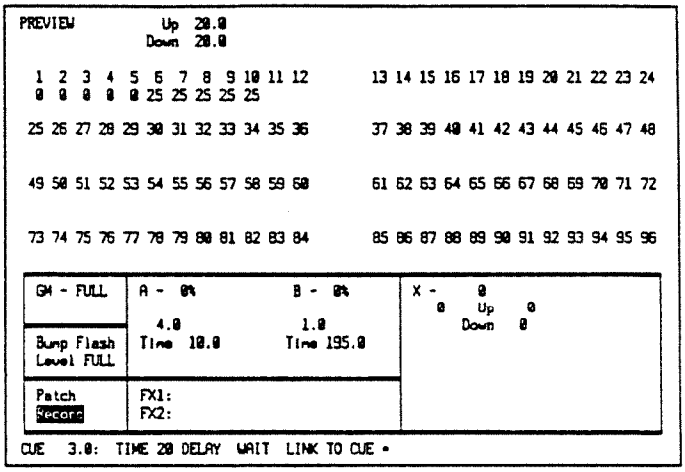


If you use [CUE] [3] [*] instead, the command line will be cleared. [LAST -1] and [NEXT +1] do not clear the previous command line.

Press

TIME 2 0 *

to record a fade time of 20 seconds for cue 3.



Set Fade Time Live

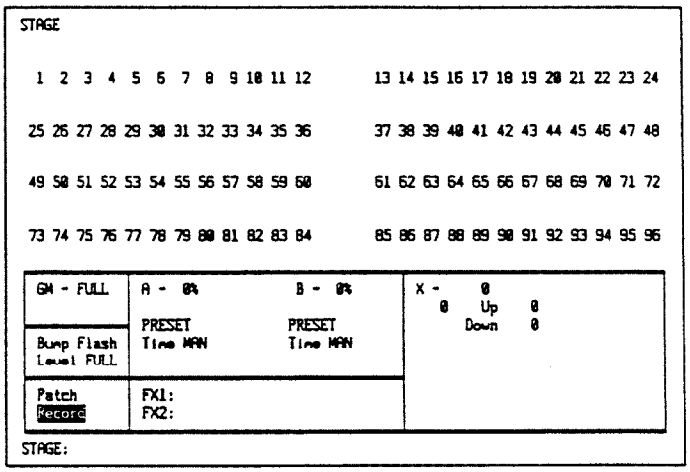
When you are in the Stage display you do not need to switch to a cue to record a time for it.

Press

STAGE

to return to the *Stage* display.

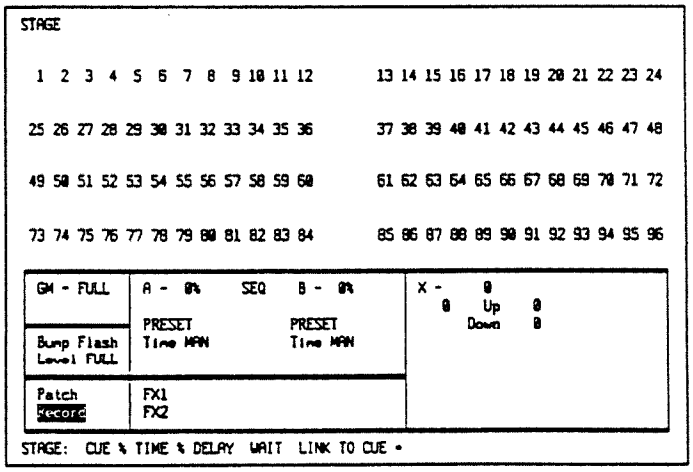
There are no lights on stage because **FADER A** is at its lower limit



Press

CUE 5 TIME 5 *

to change the fade time for cue 5 to 5 seconds.

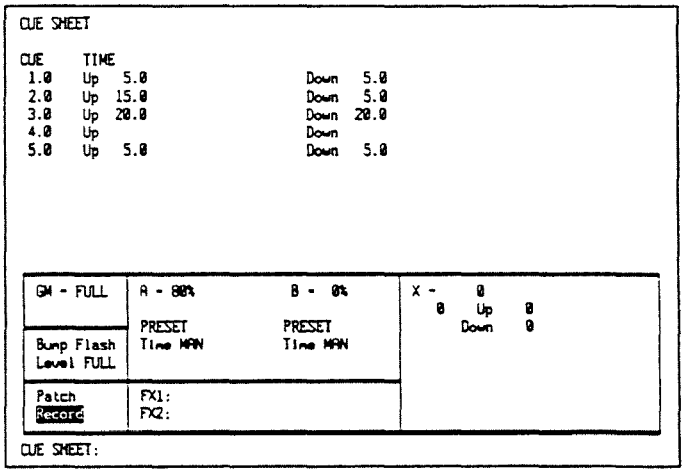


The stage display does not change (except for the command line) but the time in cue 5 is rerecorded. You can verify this if you wish by going to the *Cue Sheet* display.

Press

CUE SHEET

to see the cue sheet with the current cues



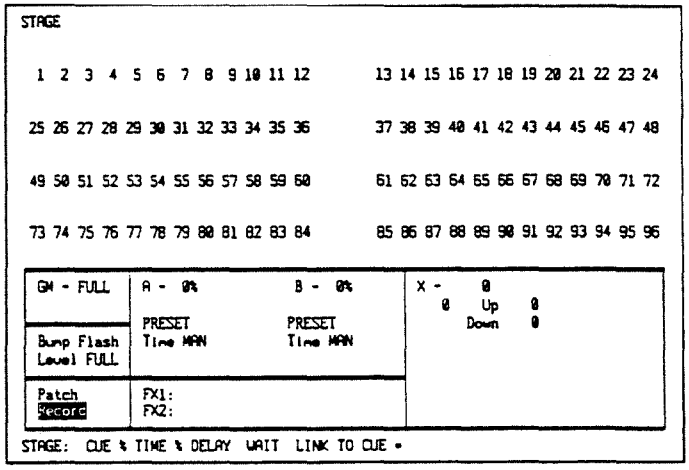
Record a Split Time Fade Live

Split time fade let you assign separate fade times for channels which are increasing in level (the up-fade) and channels which are decreasing in level (the down-fade). The up-fade time is always specified first.

Press

STAGE

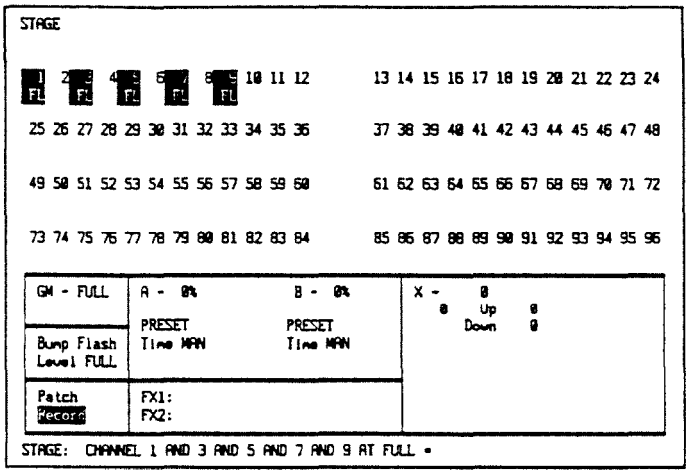
to get back to the *Stage* display.



Press

1 AND 3 AND 5 AND 7 AND 9 @ FULL

to bring the selected odd channels to FULL on stage.

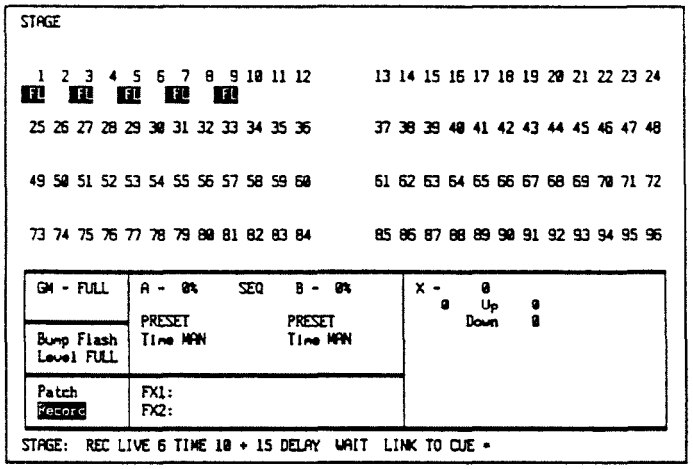


Press

REC LIVE 6 TIME 1 0 AND 1 5 *

to record a new cue 6 with a split fade time.

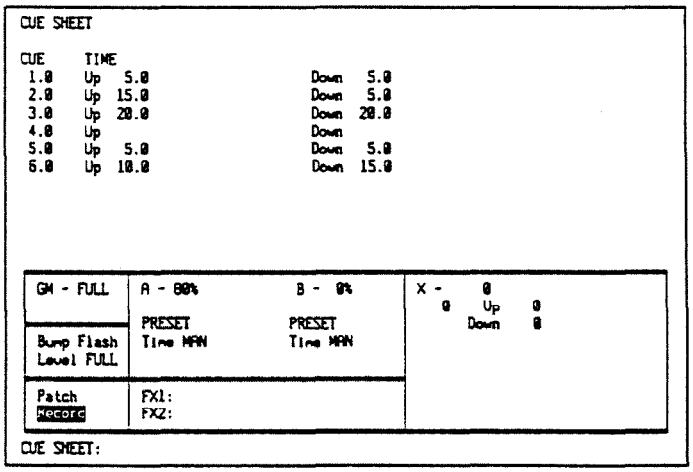
This leaves the channels in Independent mode but not under SCROLLER control.



Press

CUE SHEET

to see the cue sheet with the current cues



Record a Split Time Fade Blind

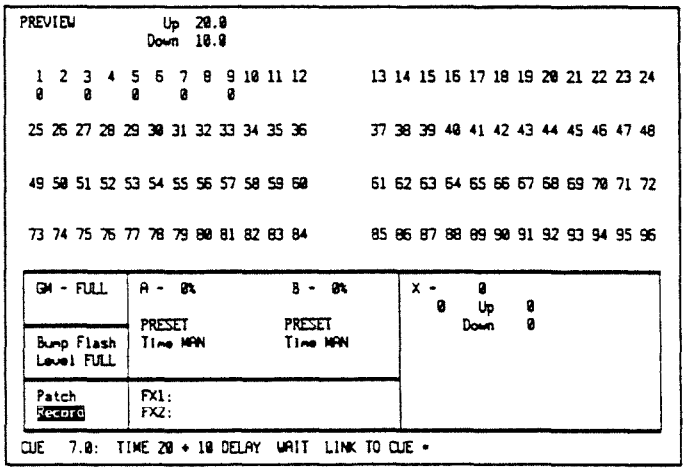
You can record fades with split times blind (the levels do not show on stage) once you are in the required Preview display.

Press

CUE 7 *

TIME 2 0 AND 1 0 *

to open a cue 7 with a split fade time.

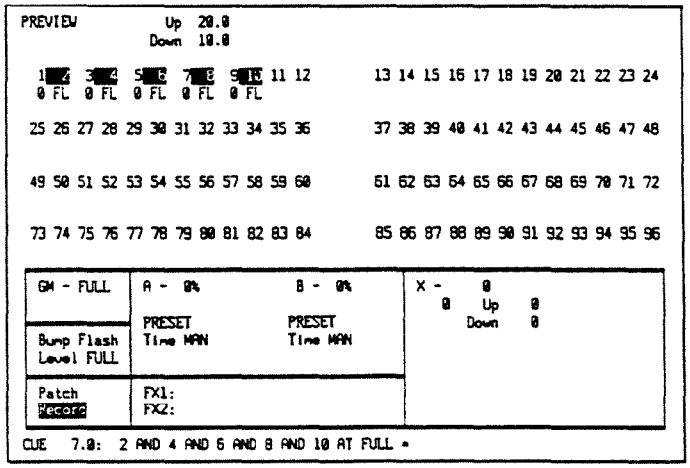


Press

2 AND 4 AND 6

AND 8 AND 1 0 @ FULL

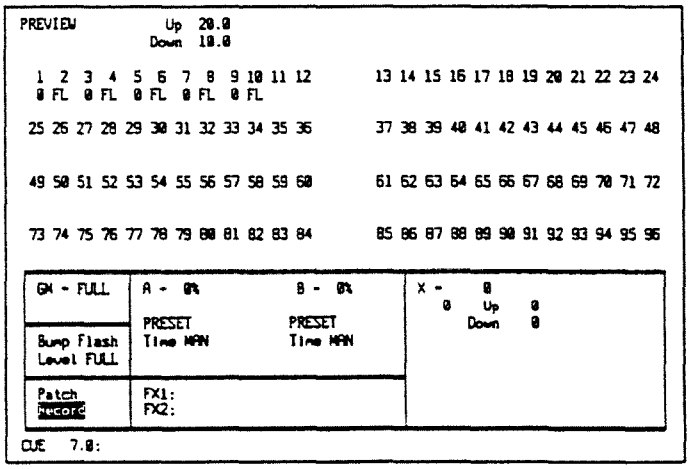
to record channel levels in cue 7.



Press

CLEAR

to clear the Command Line and release the selected channels from SCROLLER control.

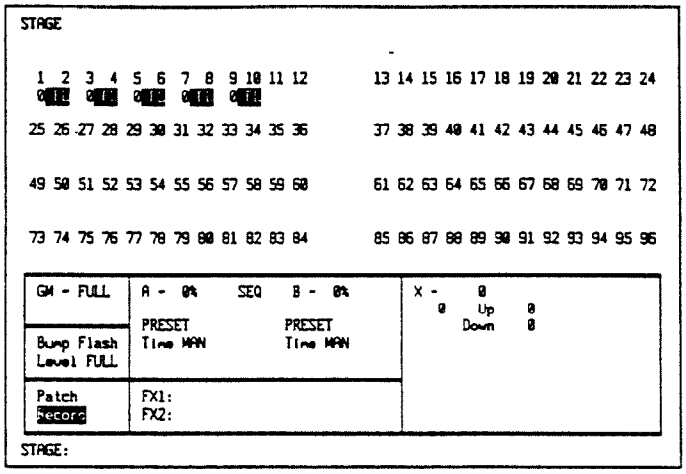


Press

STAGE

to return to the *Stage* display.

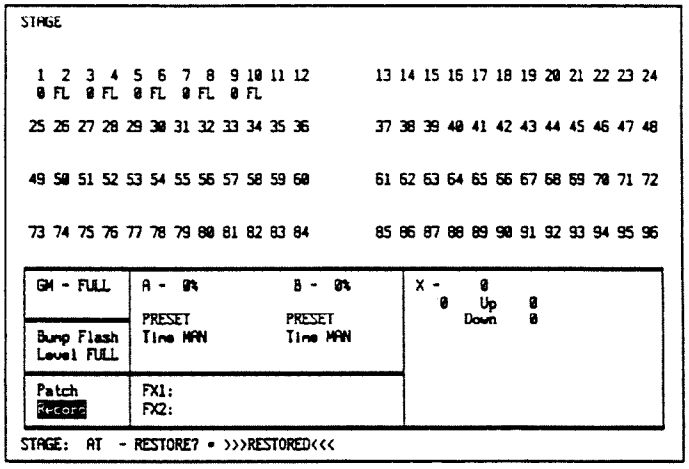
Note that there are still some channels on independent.



Press

@ * *

to clear all channels from Independent mode.



The system will ask AT - RESTORE? >>> ARE YOU SURE?<<< after the first *.

Play Back Cues on Fader A/B

FADER A/B can play back levels derived from the Channel Controllers (manual) or from a cue. FADER A can take its levels from a cue while FADER B takes its levels from the Channel Controllers, or vice versa. The [A] LED or [B] LED is ON when the fadercontains a cue. The *Fader A/B* display shows PRESET if if the fader is operating the manual controllers, or a cue number if the fader is controlling a cue. You can load cue 0 (a blackout) to the required fader to return to manual preset operation.

FADER A masters "SCENE A" (the upper row of Channel Controllers). FADER B masters "SCENE B" (the lower row of Channel Controllers).

All fades on FADER A/B (or on either half of the crossfader) require fader handle movement. When the Fade Time Control ( ) is in its 7 o'clock position ("0"), or in its 5 o'clock position ("MEM") and no fade time is recorded, the fade action follows movement of the fader handle(s). When a time is set in memory or with the Fade Time Control, the fade follows the recorded or set time, or the fader handle, whichever is slower. For a cue with a 10 second fade, if the fader handle(s) are moved to their opposite extreme in 15 seconds, the fade takes 15 seconds. An LED bargraph between the fader handles shows fade status.

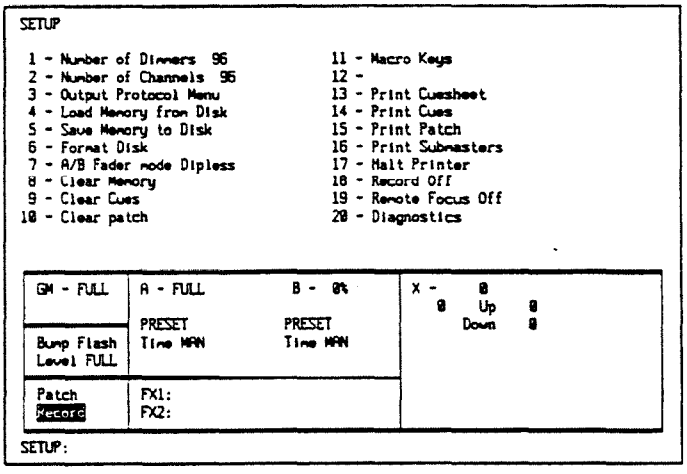
Play Back Cues Using Channel Controllers

You can play back levels from Channel Controllers or crossfade between "SCENE A" and "SCENE B" levels using FADER A/B.

Press

SETUP

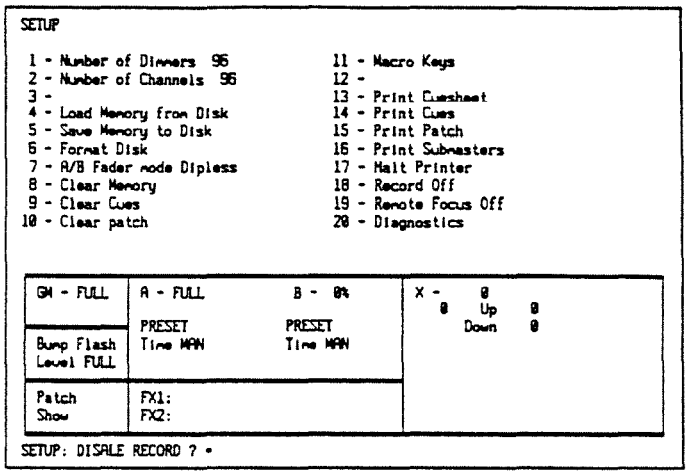
to see the *Setup* display.



Press

[1] [8] [*]

to disable recording.



After the first [*] the system asks DISABLE RECORD ? >>> PLEASE CONFIRM <<<.

Press

the blackout switch ON ( ) and move the Grand Master to its upper limit..

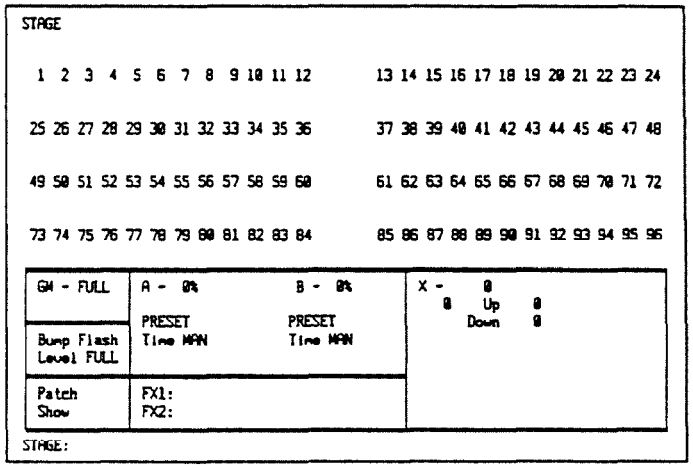
Turn

FADER A and FADER B Time Controls ( ) to their 7 o'clock positions ("0").

Press

[STAGE]

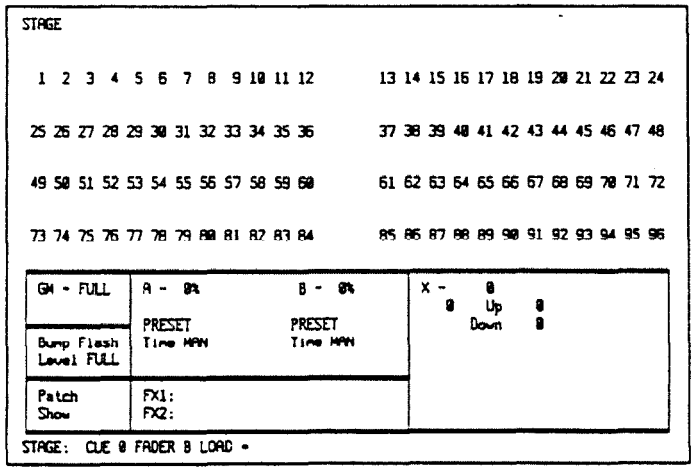
to see the *Stage* display.



Press

[CUE] [0] [A] [CUE] [0] [B]

to make sure that FADER A and FADER B are controlling their respective scene controllers.

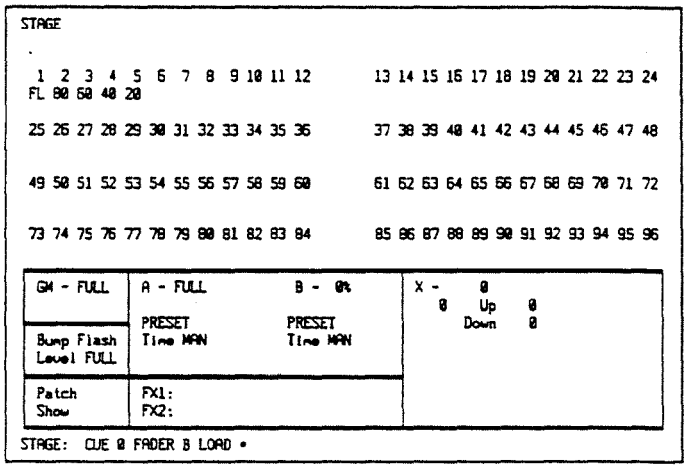


Set all Channel Controllers to "0." Then set "SCENE A" and "SCENE B" controllers as folows:

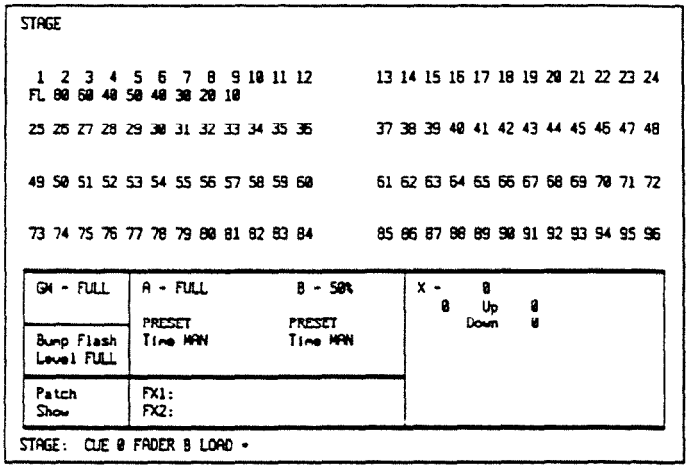
- Scene A channel 1 = FL
- Scene A channel 2 = 80%
- Scene A channel 3 = 60%
- Scene A channel 4 = 40%
- Scene A channel 5 = 20%
- Scene B channel 1 = 80%
- Scene B channel 5 = FL
- Scene B channel 6 = 80%
- Scene B channel 7 = 60%
- Scene B channel 8 = 40%
- Scene B channel 9 = 20%

Since both FADER A and FADER B are at their ZERO position, nothing happens on stage.

Move
FADER A to its upper limit.



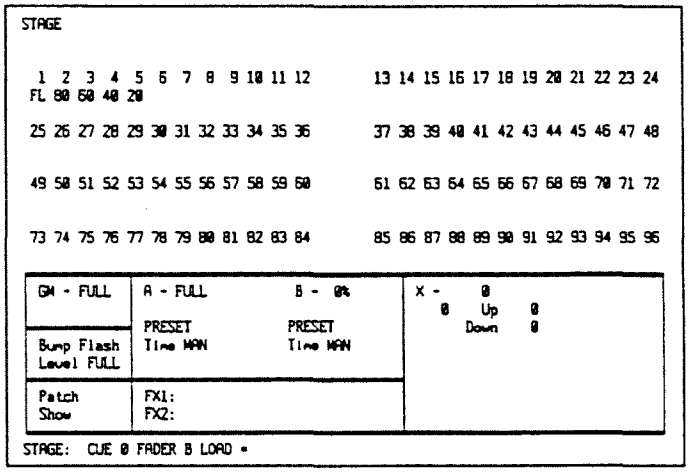
Move
FADER B to 50%



Levels from "SCENE A" and "SCENE B" are "piled-on" to each other. Channel 5 is at 50%, since the mastered level from "SCENE B" is higher than the mastered level from "SCENE A" for this channel.

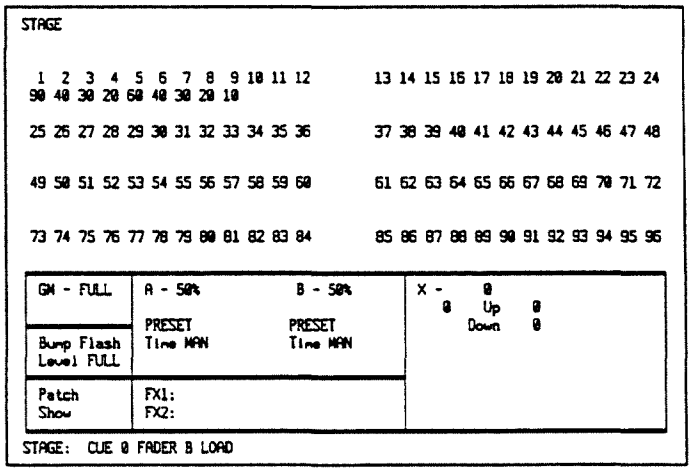
Move

FADER B to its upper limit (0%).



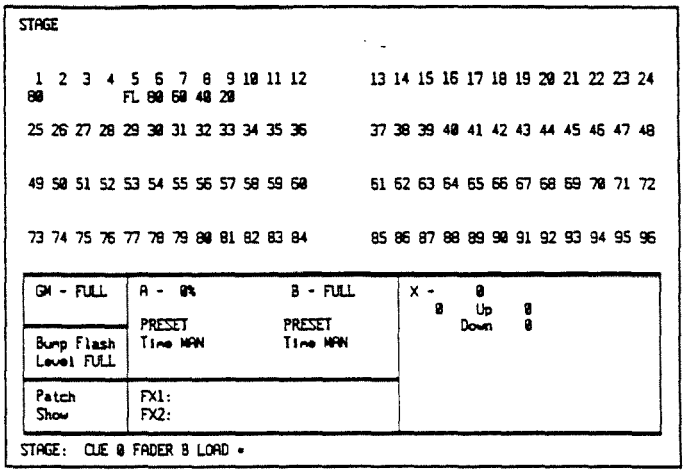
Move

FADER A and FADER B to 50%.



Channel 1 does not follow the simple pile-on rule, since it has a level in both "SCENE A" and "SCENE B." FADER A/B is a dipless crossfader, and causes a fade between the two level settings.

Move
FADER A/B to its lower limits.



You can continue crossfading between level settings by resetting the "SCENE A" controllers while FADER A is at its ZERO point and moving FADER A/B to its upper limit, resetting "SCENE B" while FADER B is at its ZERO point and moving FADER A/B to its lower limit, etc.

Timed Crossfades of Manual Levels

The Fade Time Controls let you make automatic timed crossfades (0 to 4 minutes) between "SCENE A" and "SCENE B" levels. Fade times for FADER A and FADER B are separately set. To start a timed fade, move the fader or faders to the opposite end of their travel. The LED bargraph between the two faders and the *Fader A/B* display on the Monitor mimic the fade status.

When FADER A and/or FADER B are controlling manual channel levels, selection of the 7 o'clock position ("0") or the 5 o'clock position ("MEM") of the Fade Time Controls results in a manual fade.

Stop a Timed Fade

To stop a timed fade, move the appropriate fader handle back to the LED bargraph position which shows the fade status. If only one fader is moved back, the other fader will continue its fade.

Reverse a Timed Fade

To reverse a timed fade, first stop it by moving the fader handle back to match the LED bargraph, then continue moving the fader handle back. The fade will reverse and follow the fader handle movement. The reversed portion of the fade is under direct manual control regardless of Fade Time Control position.

Re-start a Fade

To restart a fade which has been either stopped or reversed, move the fader handle back to its 100% position. The fade continues at the same rate as when it was stopped (i.e., a 10 second fade stopped at 50% and moved back to 20% will complete in 8 seconds when re-started).

Play Back Individual Cues

Cues can be played back by themselves or in sequence. This section shows how to play back a single cue if required.

Move

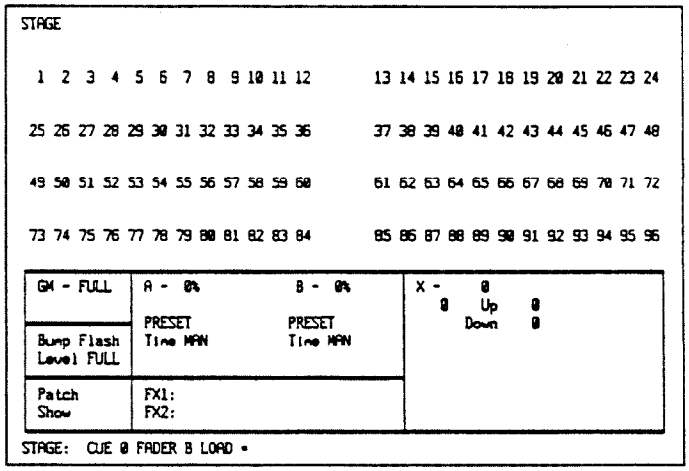
FADER A to it's lower limit and FADER B to its upper limit (0%).

Set

FADER A and FADER B Time Controls to their 5 o'clock positions ("MEM").

Make certain

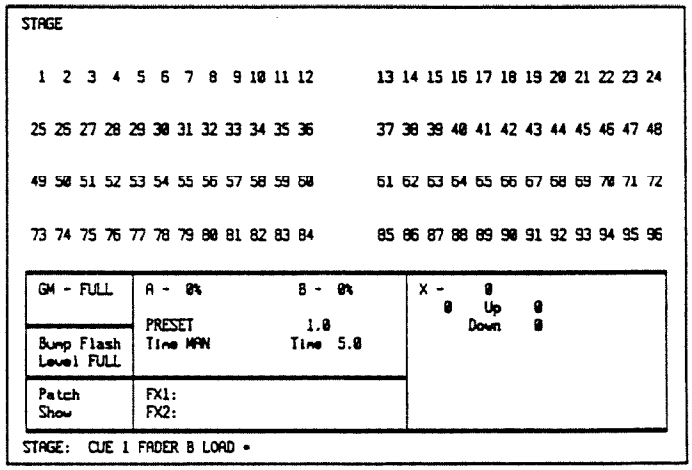
that all Channel Controllers are at their lower limits.



Press

CUE 1 B

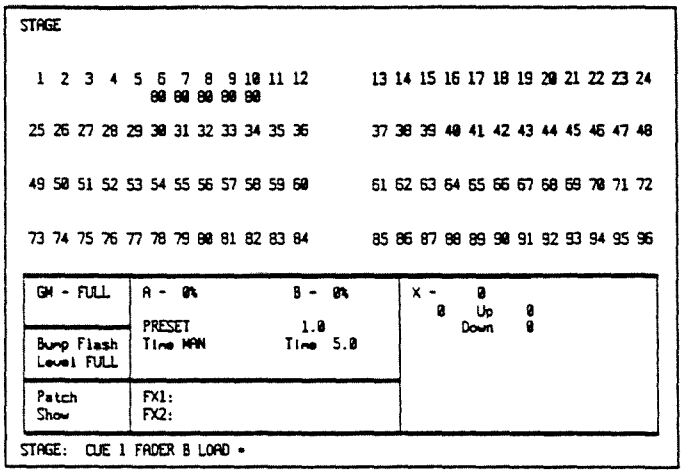
to load cue 1 onto FADER B.



Move

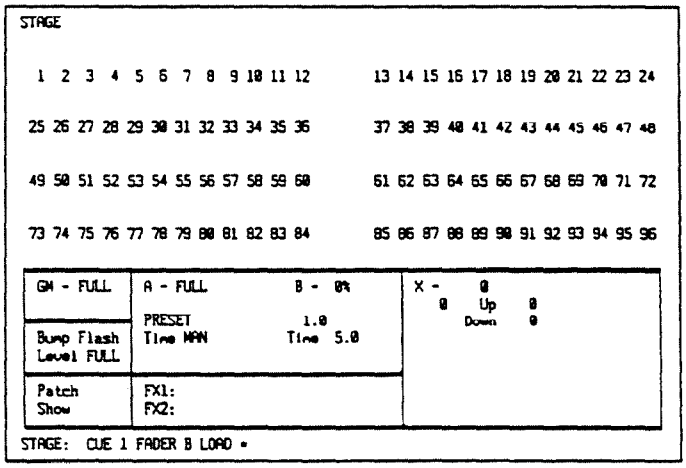
FADER B to its lower limit FULL).

The LED bargraph between the faders and a countdown on the *Fader A/B* display, shows fade status. After 5 seconds the LED in the bargraph reaches its bottom limit.



Move

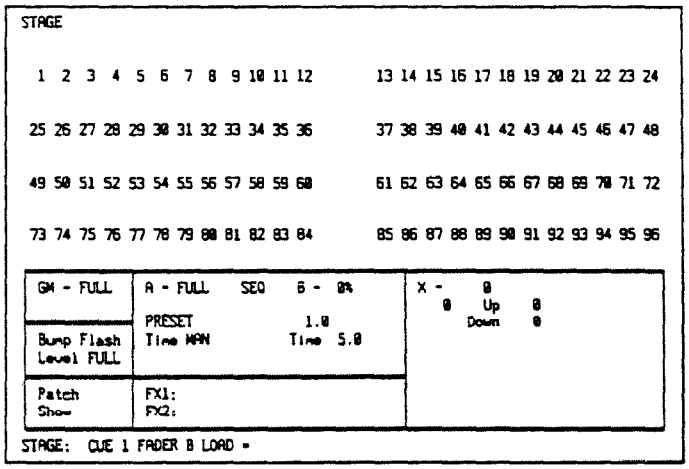
FADER A/B to its upper limit. Stage levels go out in 5 seconds but cue 1 is still loaded on FADER B.



Press

SEQ

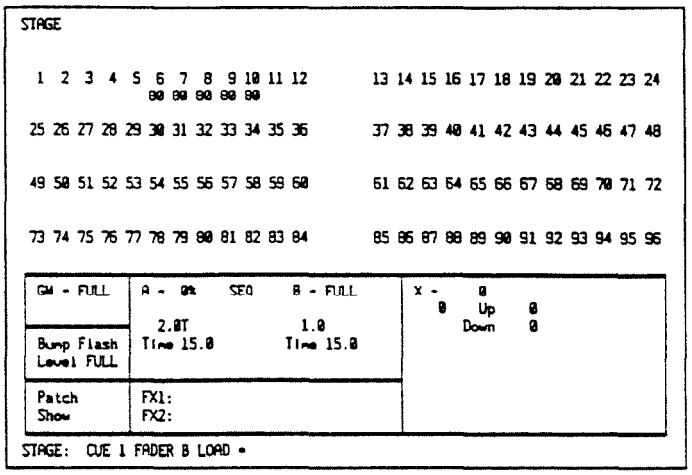
on FADER A/B to put the fader into sequencing mode.



Move

FADER A/B to its lower limit.

When the fade is complete the system loads cue 2 onto FADER A.



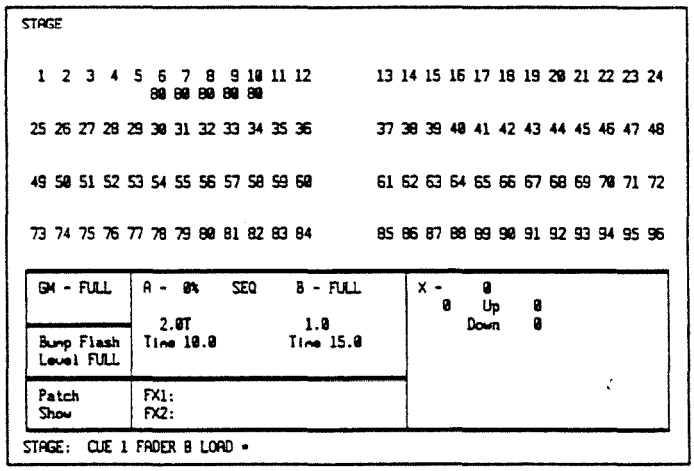
Note that cue 1 shows a time of 15 seconds (the same as cue 2). When crossfading, the cue going out acts as the down-fade and follows the incoming cue down-fade time.

Play Back Cues with Modified Fade Time

You can modify a fade time using the Fade Time Control above the fader You can change this time either before or during a fade.

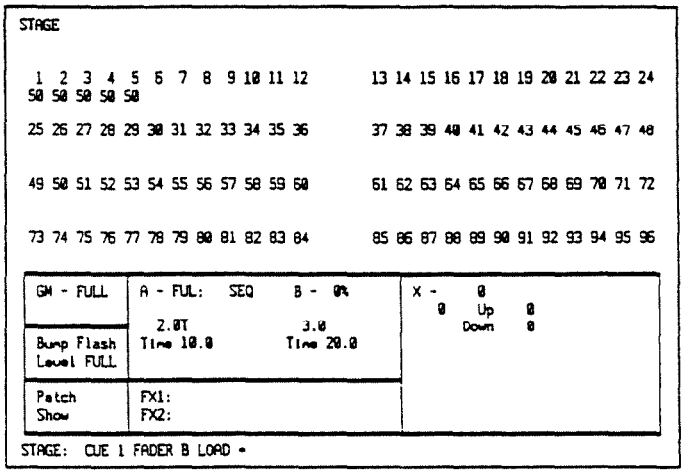
Turn

FADER A Time Control to 10 seconds.



Move

FADER A/B to its upper limit.
After 10 seconds,
Cue 2 is on stage.



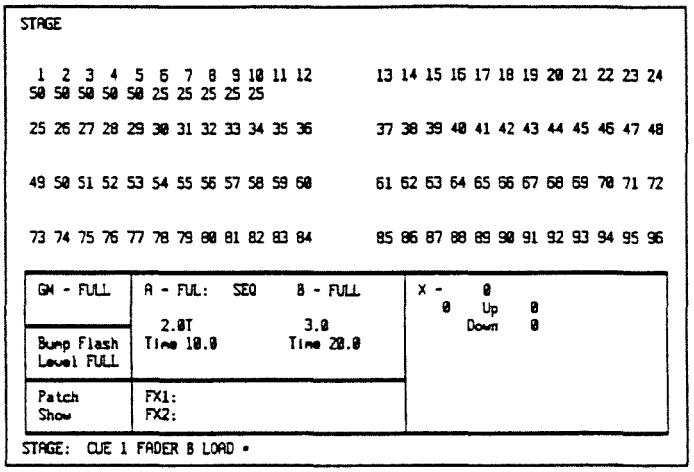
Fade time may be modified while a fade is in progress. When cue 2 is complete, cue 3 is automatically loaded on FADER B.

Pile Cue on Cue

You can pile cues onto each other while using timed fades if required.

Move

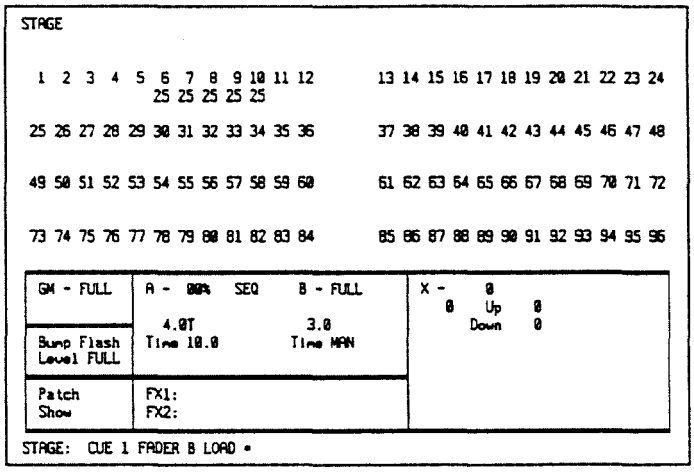
FADER B to is lower limit. After 20 seconds both cue 2 and cue 3 are on stage.



Since you have not done a crossfade, the sequencer does not load a new cue onto **FADER A**.

Move

FADER A to is lower limit. After 10 seconds cue 2 has faded OUT and cue 3 are on stage.



Once cue 2 is completed, the system will load cue 4 onto **FADER A**.

Load Cues Out of Sequence

You can load cues in any sequence you wish. If the sequencer is on, it will always load the next cue when a cue is done. You can, however, manually load an out of sequence cue to replace the one the system loaded.

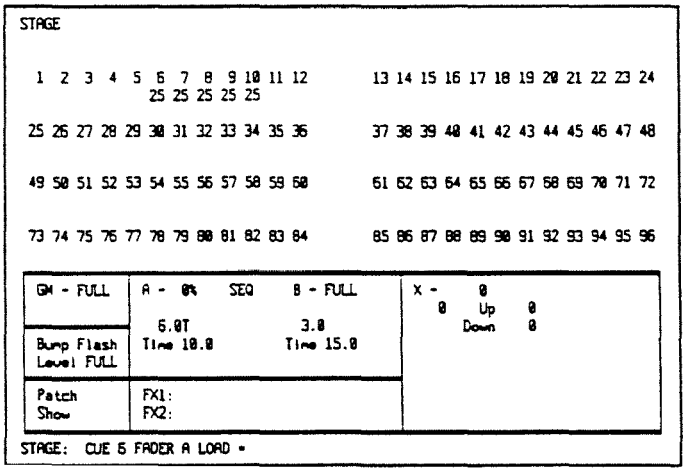
Press

CUE 6 A

to load cue 6 onto FADER A instead of cue 4

Return

FADER A Time Control to its 5 o'clock position ("MEM")

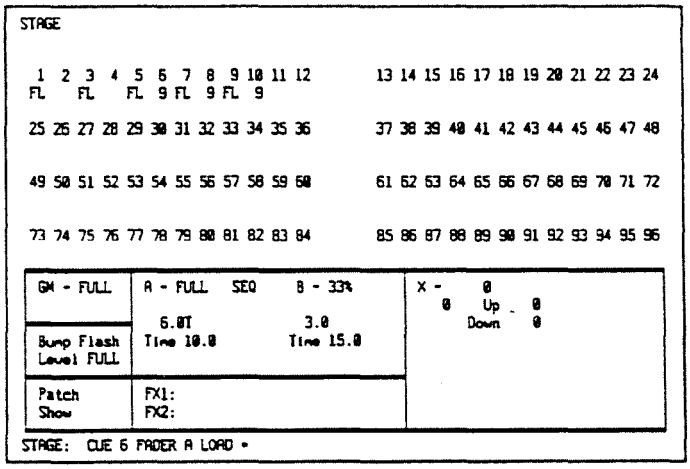


The *Fader A* display still shows Time 10. Cue 6 is recorded as a split time fade with an increasing channel level time of 10 seconds and a decreasing channel level time of 15 seconds.

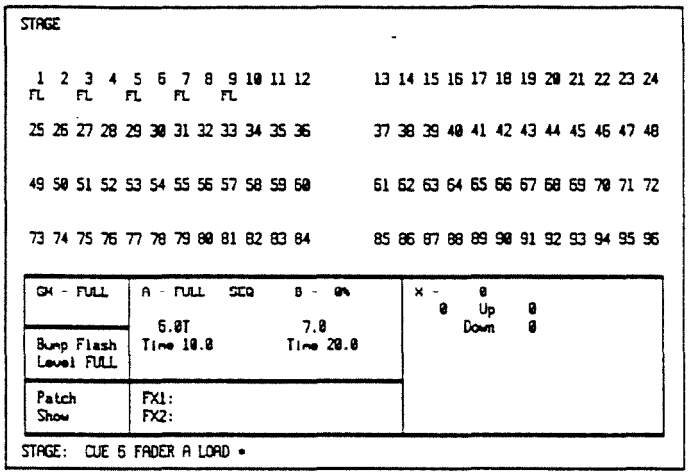
Move

FADER A/B to its upper limit to start the fade.

After 10 seconds the up-fade is completed and the down-fade is about 2/3 done.



After 15 seconds cue 6 levels are on stage and the system loasds cue 7 onto FADER B.

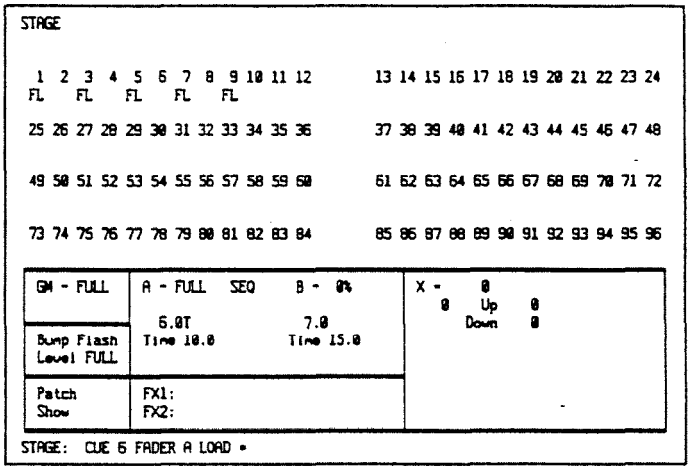


Modify a Split Time Fade

You can modify fade times for a split time fade with the Fade Time Controls just like you modified fade times for single time fades.

Turn

FADER B Time Controller to 15 seconds.

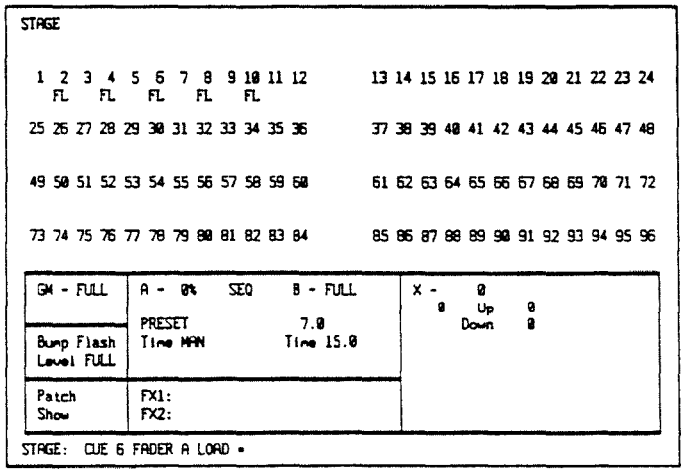


The up-fade time for cue 7 changes to 15 seconds. The recorded down-fade time in cue 7 (10 seconds) will control the fade-out rate of cue 6.

Move

FADER A/B to its lower limit.

After 15 seconds cue 7 is on stage.



Since there is no cue 8 the system sets FADER A back to its preset mode.

Press

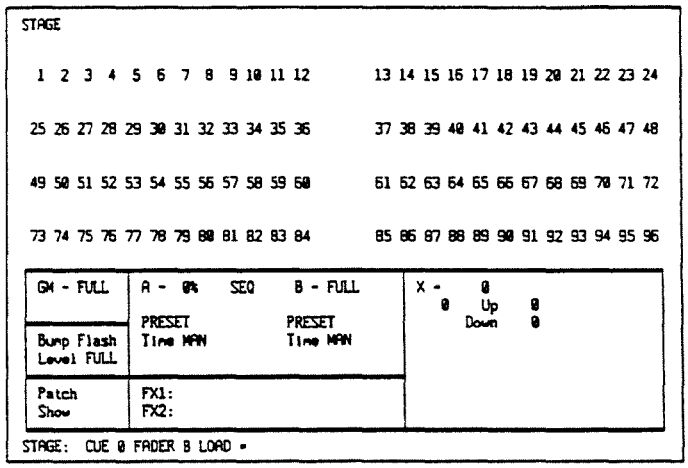
CUE 0 B

to unload FADER B and put the stage into a blackout.

Press

SEQ

to take FADER A/B out of sequencing mode.



Play Back Cues on Fader X

Channel levels from FADER X are piled-on to levels derived from FADER A/B, FADER FX1 and FADER FX2 and the submasters (highest level takes precedence). This demonstration assumes that all other sources of channel levels are OFF.

When FADER X Time Controls are set to their 5 o'clock position ("MEM"), the system loads cues with no recorded time with as 0 second fades. The monitor shows channel levels contributed by FADER X in amber.

Play Back Individual Cues

FADER X lets you play back individual cues as required. Among other things, this lets you pile on cues with FADER A/B.

Turn

both FADER X Time Controls to "MEM".

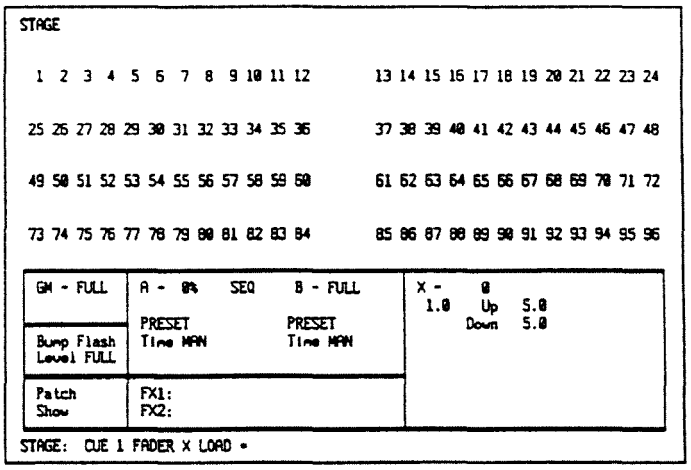
Make sure

that the SEQ LED is OFF and that you are in the *Stage* display.

Press

CUE 1 X

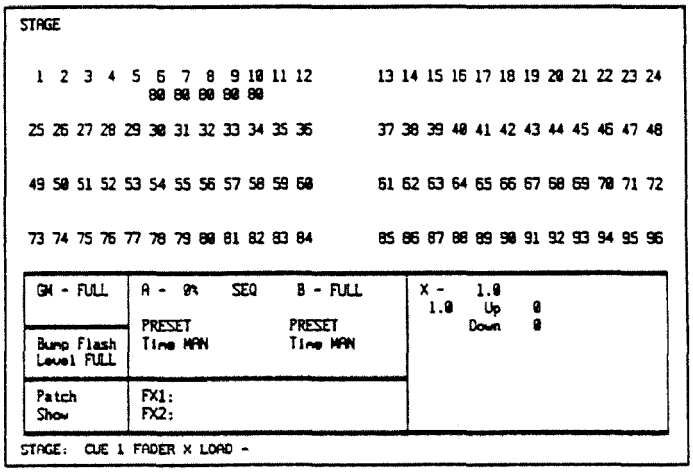
to load cue 1 onto FADER X.



Press

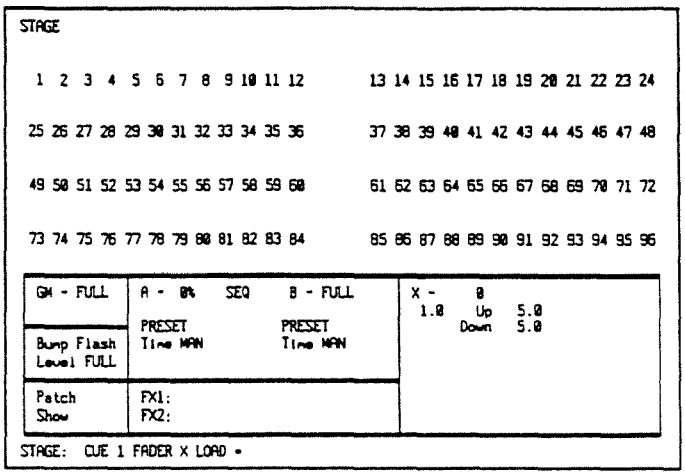
GO

to start cue 1. After 5 seconds, cue 1 is on stage.



Press

STOP



Playing Back Cues in Sequence

You can use FADER X as a sequenced automatic crossfader if you wish. In this mode, the levels of FADER X still pile on to the levels from other sources, including FADER A/B.

Press

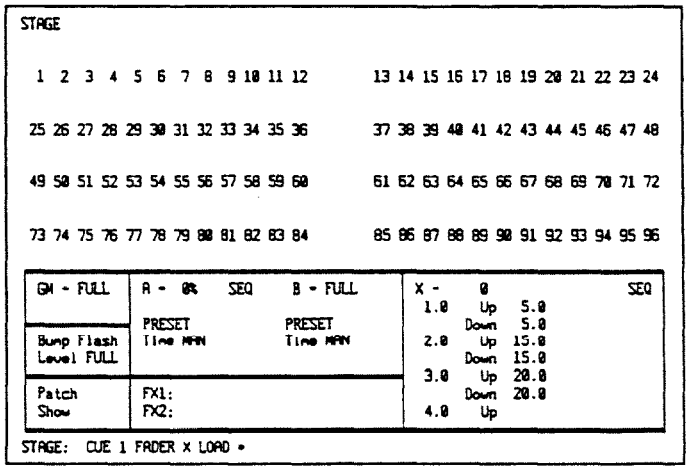
SEQ

to put FADER X into Sequencing mode

Press

CUE 1 X

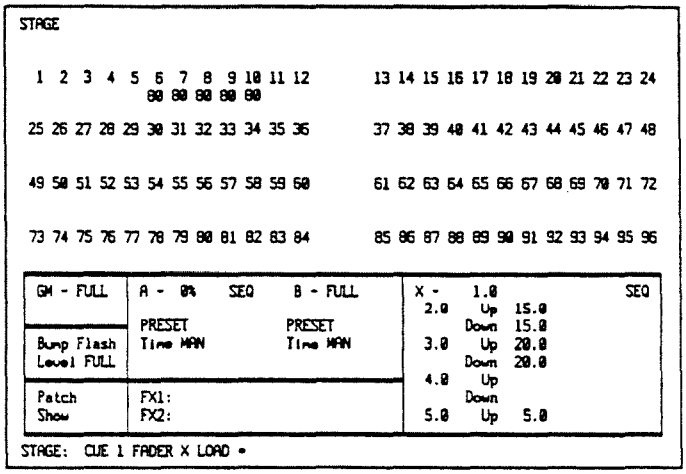
to load cue 1 onto FADER X.



Press

GO

to start cue 1. After 5 seconds cue 1 appears on stage.

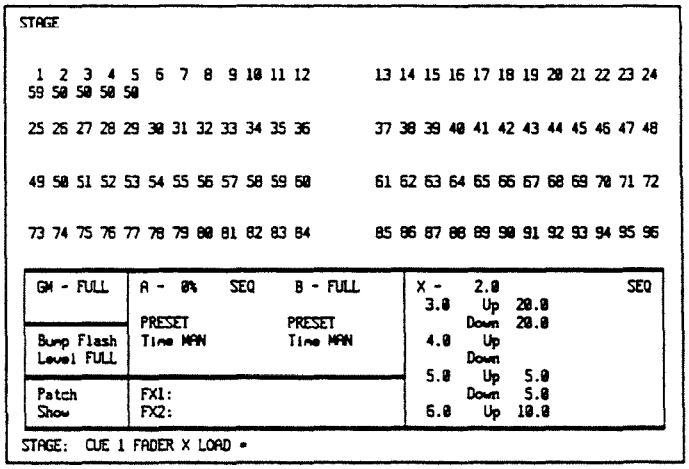


A dual LED bargraph and a countdown on the *Fader X* display show fade status.

Press

GO

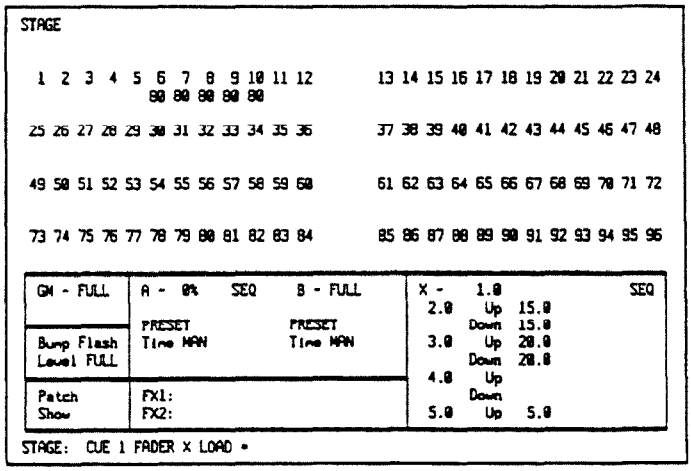
to start cue 2. After 15 seconds cue 2 appears on stage.



Press

STOP

to return to cue 1.

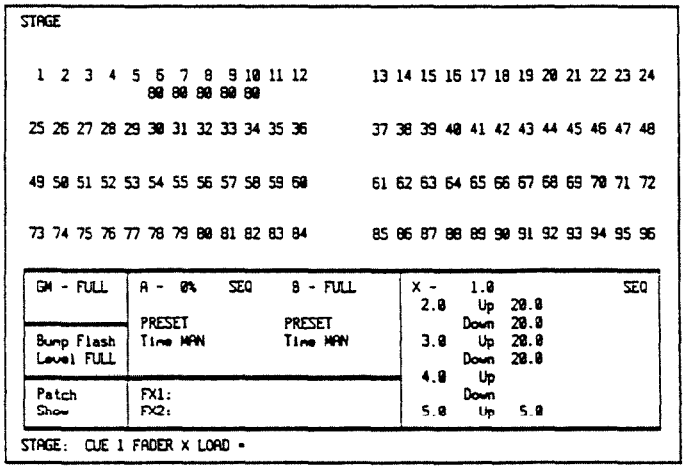


Play Back Cues With Modified Fade Time

You can modify cue fade times by using the Fade Time Controllers above FADER X. You can make these modifications before or during a fade.

Turn

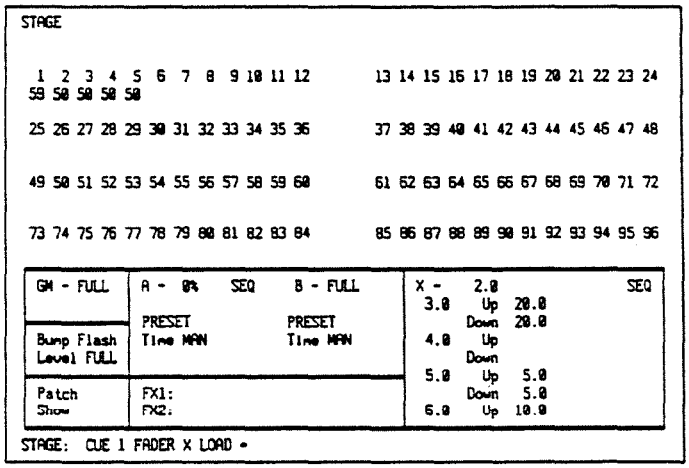
both FADER X Time Controls to 20 seconds.



Press

GO

to start cue 2. This time it takes 20 seconds before cue 2 is on stage.



Pile Cue on Cue

Multiple cues cannot be "piled-on" using only FADER X, since FADER X is a replacement fader, and not a split crossfader. However, levels from FADER A/B, FADER FX1, FADER FX2 and the submasters may be piled-on to FADER X levels. The Play Back Cues on Fader A/B (page 103), Effects (page 141), and Submasters (page 149) sections of this chapter demonstrate methods for bringing lights on stage from these other sources.

Loading Cues Out of Sequence

You can load cues out of sequence if required. The system will automatically load the next cue number, even if the number is not the next consecutive number. For instance, if you have a cue 4 and then a cue 6 (but no cue 5) the system will load cue 6 after cue 4.

However, if you wish to skip an existing cue or go back to a previous cue number you can just load the cue onto FADER X.

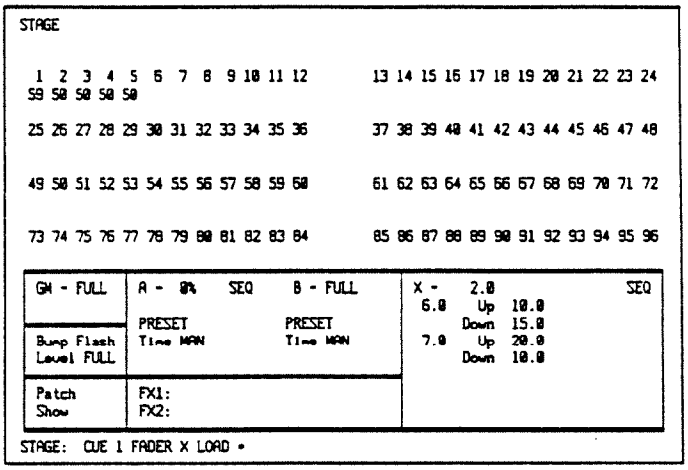
Set

both FADER X time controls back to "MEM."

Press

CUE 6 X

to load cue 6 onto FADER X as the next cue.



Press

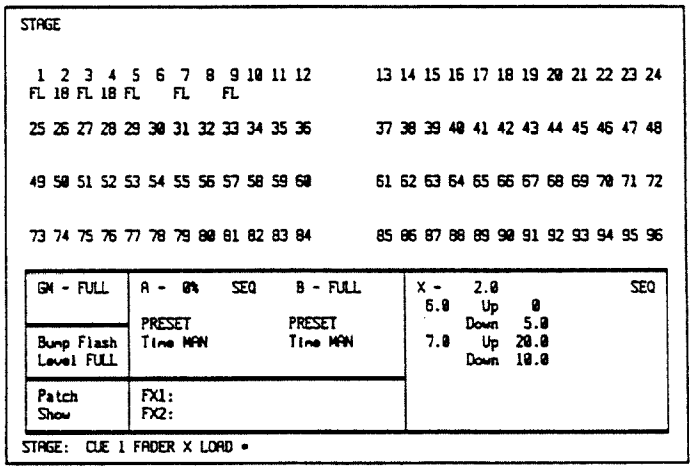
GO

to start cue 6.

Press

STOP

after 10 seconds.



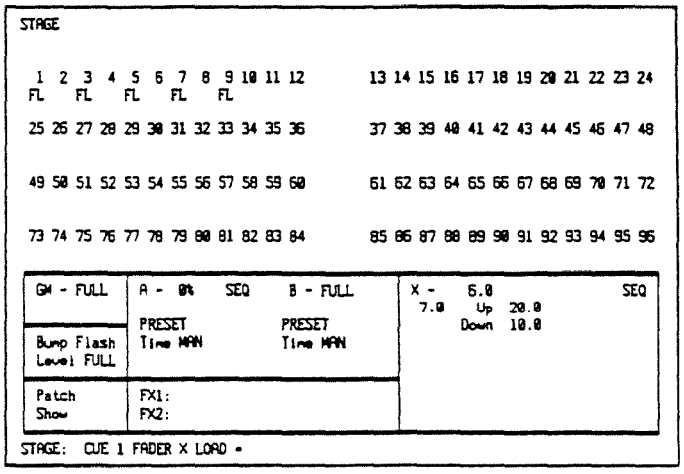
Since cue 6 is a split fade with a longer down-fade time, the up-fade is now complete but the downfade is only about 2/3 complete.

Press

GO

to restart cue 6.

After 5 more seconds cue 6 is on stage.

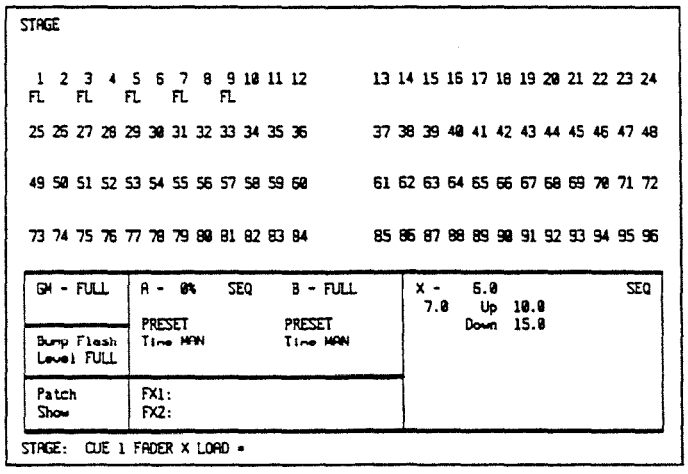


Modify a Split Time Fade

You can modify split fade times just as you can modify single fade times.

Turn

the FADER X Up-Fade Time Control to 10 seconds, and its Down-Fade Time Control to 15 seconds.

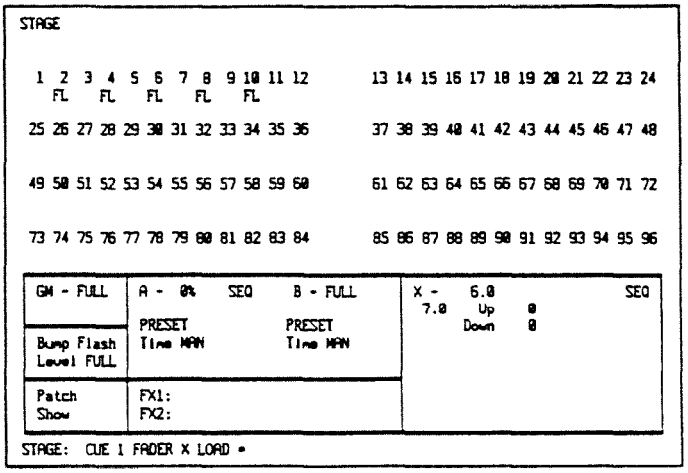


Press

GO

to start cue 7.

Cue 7 down-fade is complete in 10 seconds. The up-fade completes after 15 seconds.



Cue 7, which is the last cue, remains on the second display line of the *Fader X* display. The cue number is displayed in amber, indicating that it is active.

Turn both FADER X Time Controls back to their 5 o'clock position ("MEM").

Delays, Waits, and Cue Linking

You can use DELAY, WAIT, and LINK TO to set up automatic changes in cue start timing and sequence.

DELAY starts the cue fade at some time after GO is presseded. DELAY is usually used to start the up-fade and down-fade at different times. However, delays can be put on single time cues if necessary.

Using a single delay time delays the up-fade and down-fade. Split delays allow separate and different delays for the up-fade and down-fade.

WAIT lets you automatically play back a series of cues on FADER X. Wait times have no effect on cues loaded to FADER A/B. Without wait times, each cue on FADER X is started by pressing GO. With wait times, the first cue with a wait time is started with GO, but the next cue starts automatically when the wait time has elapsed. Wait time countdown starts when the associated cue is started. A cue with a 10 second delay, 20 second fade, and 90 second wait is fully on stage for 60 seconds before the next cue starts.

LINK TO lets you link cues in sequences other than numerical order. To leave a cue loop (for example, cue 5 linked to cue 1) load a cue outside the loop and press GO.

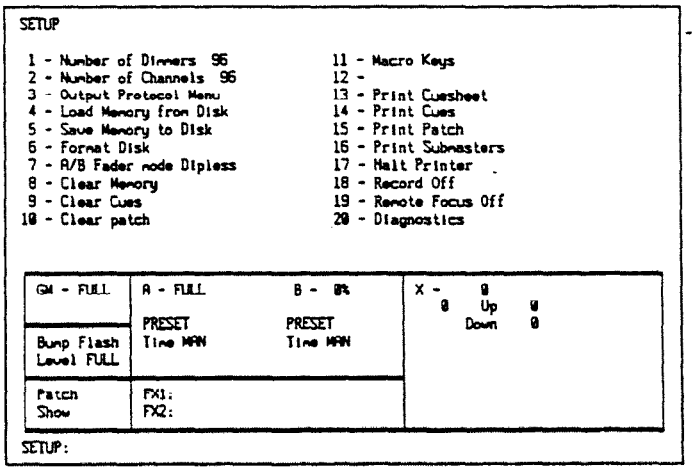
You can set or modify cue attributes live while you are in the *Stage* display, or blind while you are in the *Preview* or *Cue Sheet* displays. The procedure is the same in all three displays.

In order to add or modify wait times, delay times, or links you must turn the "Record" entry in the *Setup* display (item #18) ON .

Press

SETUP

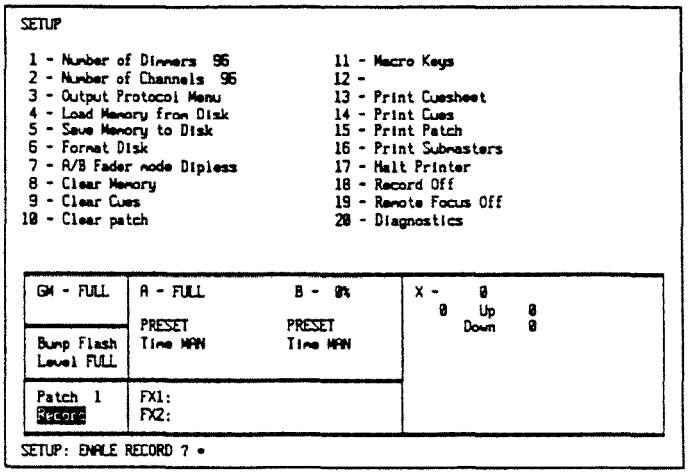
to see the *Setup* display.



Press

1 8 *

to enable recording.



After the first * the system asks ENABLE RECORD ? >>> PLEASE CONFIRM <<<.

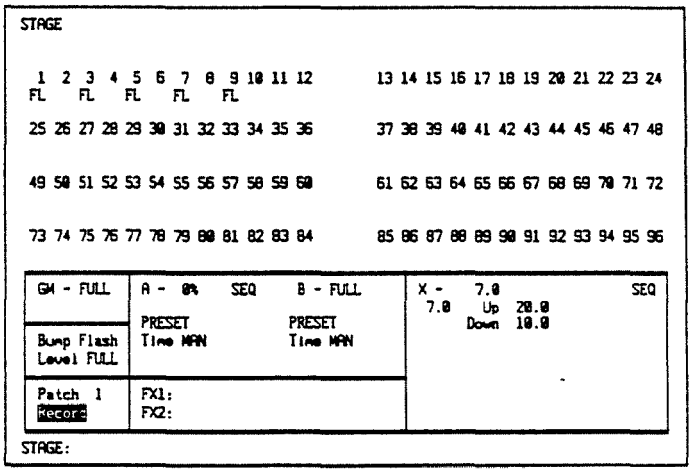
Set Delay Times

In this section, cue 7 is modified so all channels end their fade together, rather than start together.

Press

STAGE STOP

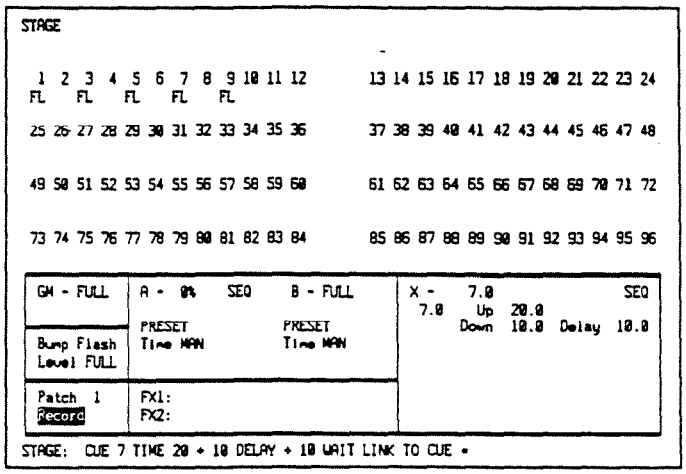
to return to the *Stage* display and back into cue 6.



Press

CUE 7 DELAY AND 1 0 *

to add a delay to cue 7.



The new delay time will appear in the FADER X display. This is a delay on the down-fade time going into cue 7. To enter an up-fade delay, enter the delay time without AND.

You can record a split delay time the same way you recorded a split Fade time, by entering the up-fade time and down-fade time separated by AND.

Press

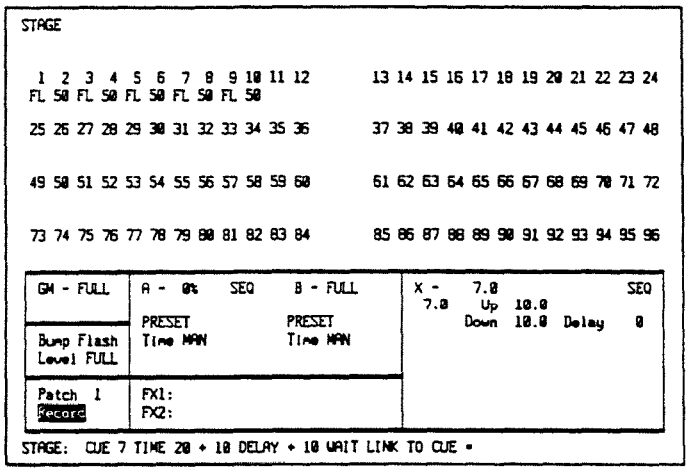
GO

to start cue 7.

Press

STOP

after 10 seconds.



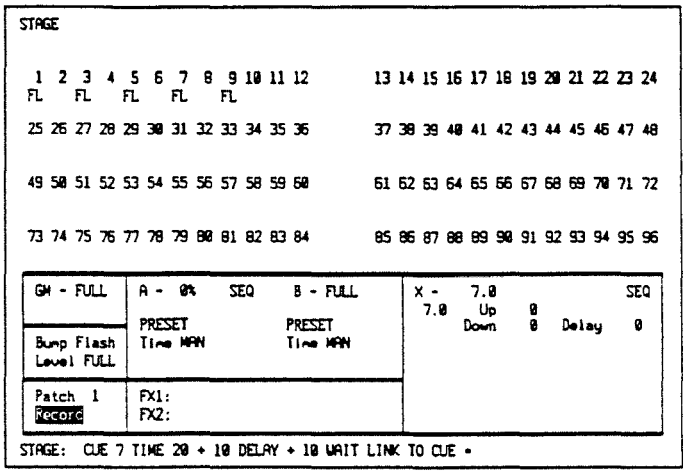
The up-fade is halfway done, while the delay on the down-fade portion has expired and that part of the cue is about to start.

Press

GO

to restart cue 7.

After 10 more seconds, cue 7 is on stage.



This cue takes the same amount of time (20 seconds) from start to finish as it did when originally recorded. However, rather than the up-fade and down-fade starting at the same time and finishing at different times, they now start at different times but finish at the same time.

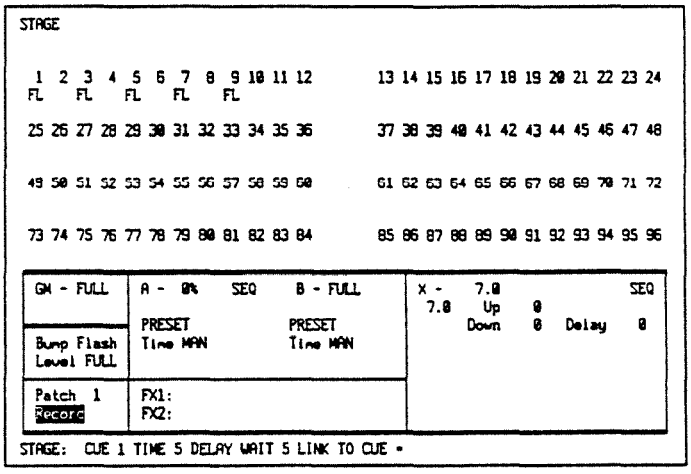
Set Wait Times

The procedure for recording wait times is the same when you are in the *Stage* display or in a *Preview* display. This demonstration shows recording wait time in the *Stage* display.

Press

CUE 1 WAIT 5 *

to record a wait time of 5 seconds for cue 1.



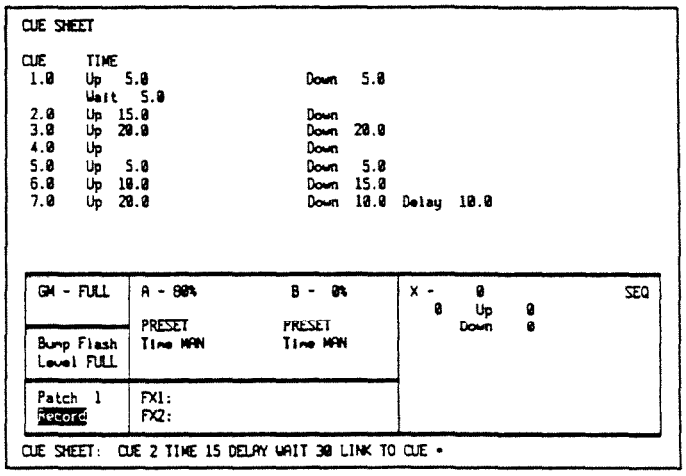
You would enter CUE 1 * WAIT 5 * to do the same thing in a *Preview* display. Once you were done recording, you would need to press FXG to go back to the *Stage* display.

You must already be in the appropriate Preview display before you can record a wait time, so the cue specifications in the wait commands are not necessary.

Press

CUE SHEET

to see the cue sheet with the current cues.

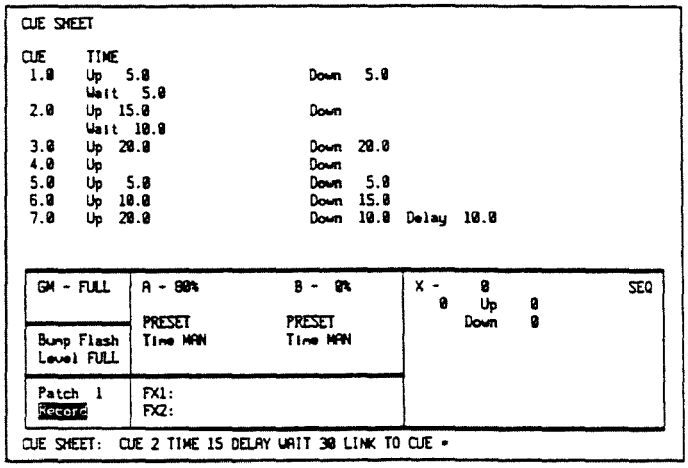


The wait time for cue 1 is 40 seconds. Since fade time is 5 seconds, there is a 35 second wait after cue 1 completion before cue 2 starts.

Press

CUE 2 WAIT 1 0 *

to add a 10 second wait to cue 2.



Press

STAGE

to return to the *Stage* display.

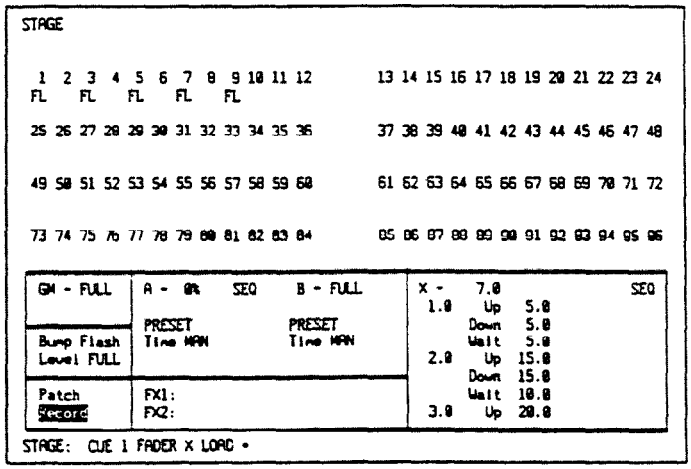
Make sure

that FADER X sequencing is ON.

Press

CUE 1 X

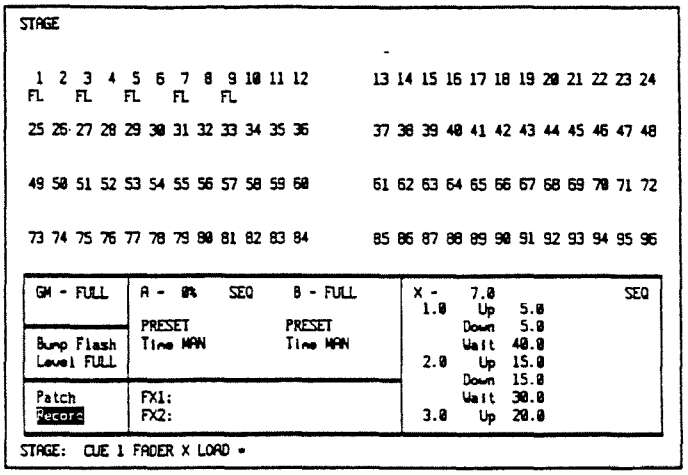
to load cue 1 onto FADER X.



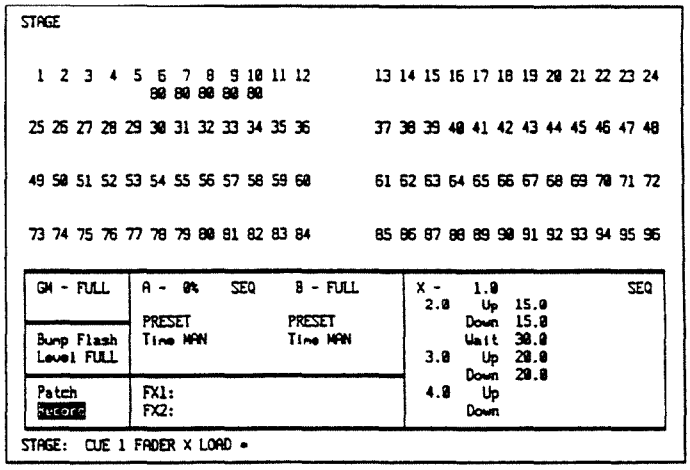
Press

GO

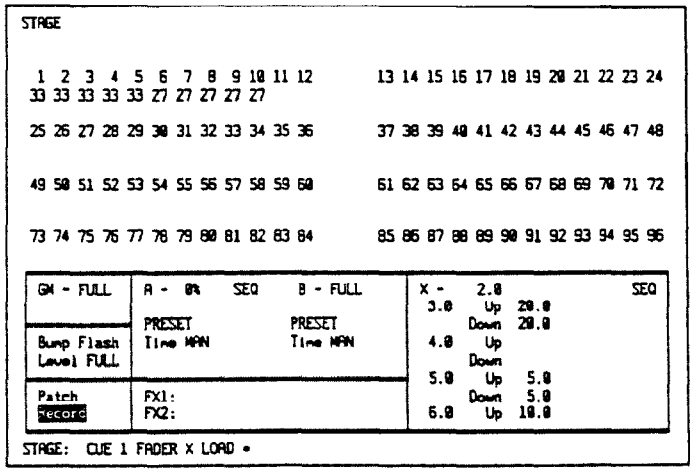
to start cue 1.



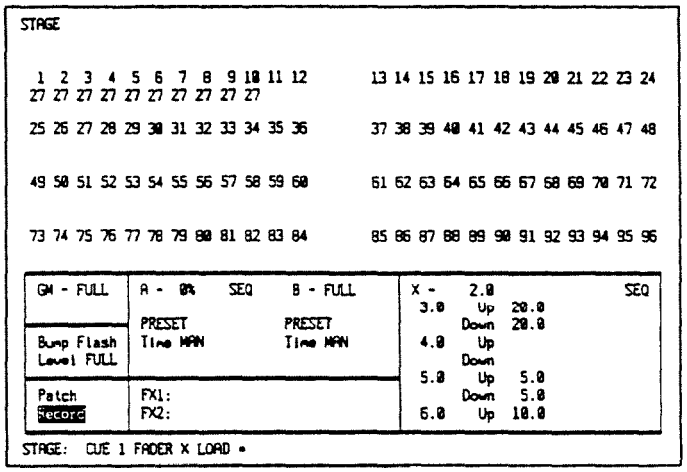
5 seconds after you press GO, cue 1 is complete and cue 2 starts.



15 seconds after you press GO, cue 3 starts.

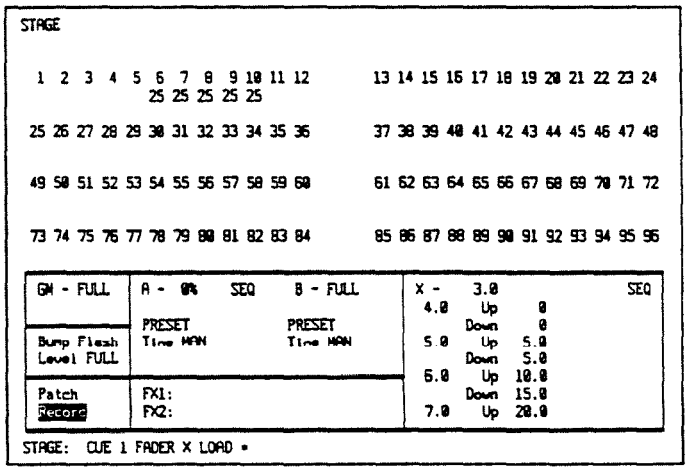


20 seconds after you press GO, cue 2 is done.



Cue 2 never actually reaches FULL (channels 1-5 at 50%) because these channels are already going OUT in cue 3. Channels 6 through 10, which were going out in que 2 slow down considerably because they are already almost at their cue 3 levels of 25.

40 seconds after you press GO, cue 3 is done.



Since cue 3 has no wait, system does not start cue 4. You can start and stop cue sequences with STOP and GO, but you must do it while a cue is in progress, not while only a wait is counting down.

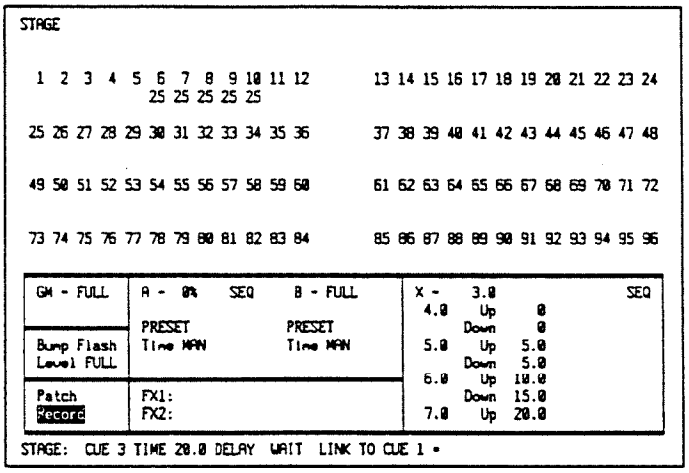
Set Cue Sequencing

Cue links are used to change the order of cues from strict numerical order when necessary. This can be to bypass a cue which is no longer used, to create a loop of cues, etc.

Press

CUE 3 LINK TO 1 *

to add a link cue 3 back to cue 1.



Press

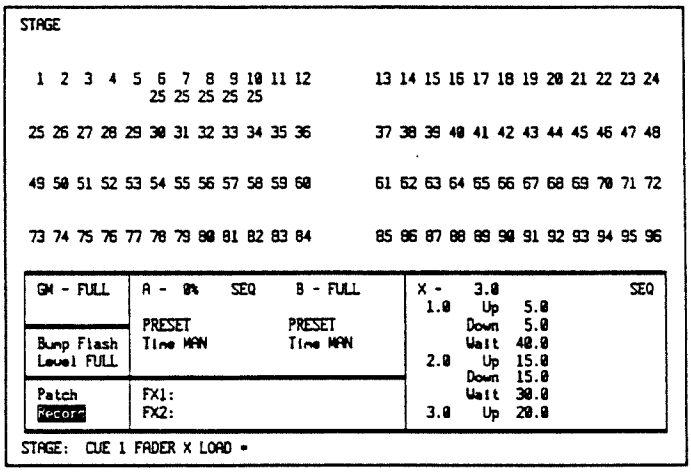
CUE 1 X

to load cue 1 onto FADER X.

Press

GO

to start cue 1.



The sequence of events is the same as in the previous example, except that the system will return to having cue 1 loaded onto FADER X. This saves you the trouble of reloading cue 1 each time if you have a sequence of cues that are used frequently.

You can turn this sequence of cues into a repeating loop if you wish by adding a wait time to cue 3.

Modify Cues

Once you have recorded cues and have had a chance to use them you will wish to modify the cues, add cues, and perhaps even delete a cue from the system. This section demonstrates modifying and deleting cues.

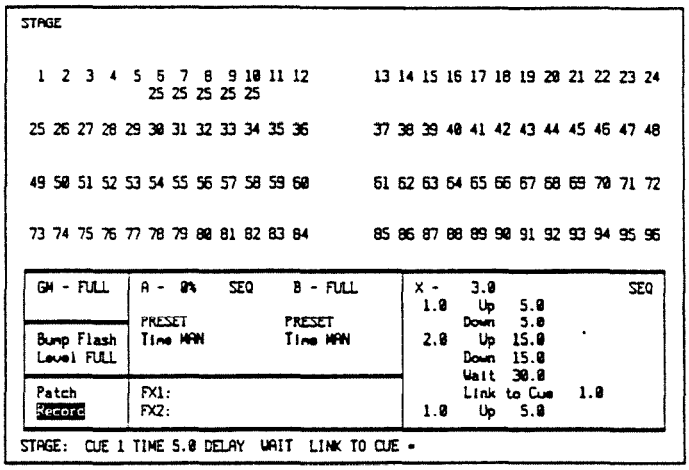
Modify Cue Levels Live

You can modify cue levels live by changing channel levels using the keyboard or using the manual controllers

Press

CUE 1 WAIT *

to clear the wait time from cue 1.

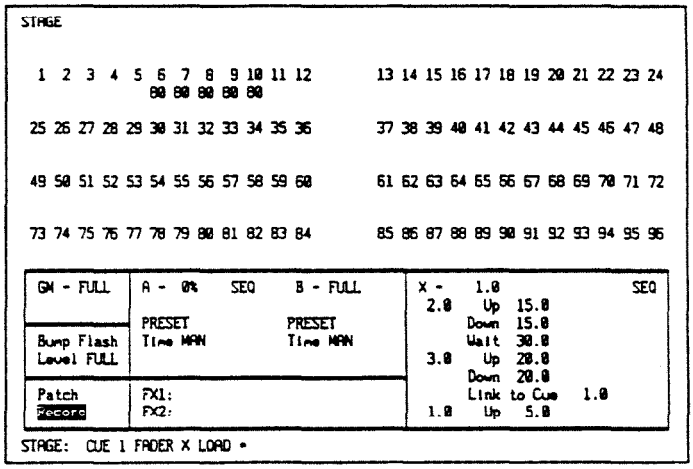


Press

CUE 1 X GO

to load and start cue 1.

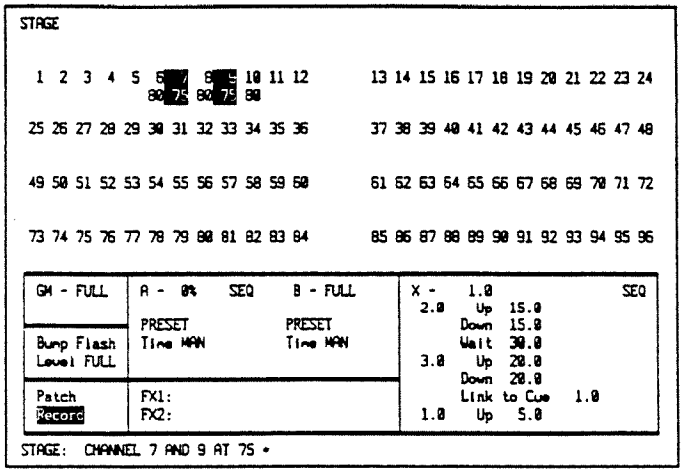
After 5 seconds cue 1 is on stage



Press

7 AND 9 @ 7 5

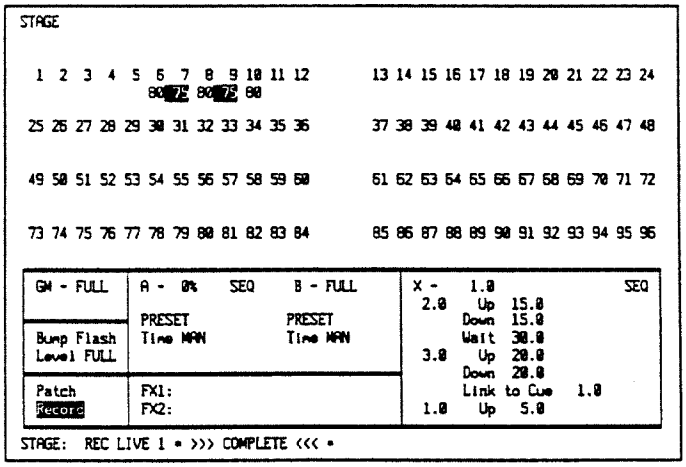
to bring the selected channels to 75%.



Press

REC LIVE 1 * *

to record the new levels.

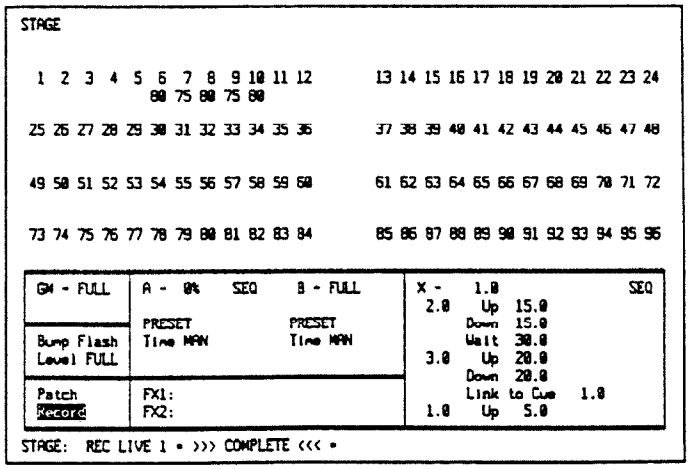


The system will ask >>>DEFINED AS A CUE MEMORY - REREKORD? <<< after the first *.

Press

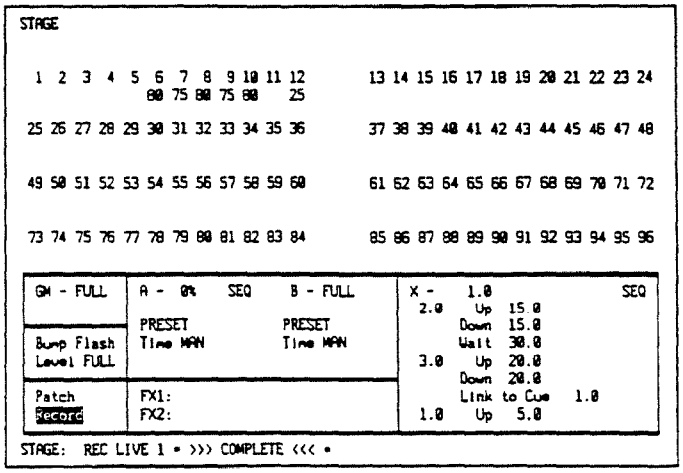
STAGE

to return control of channels 7 and 9 to the fader.



Set

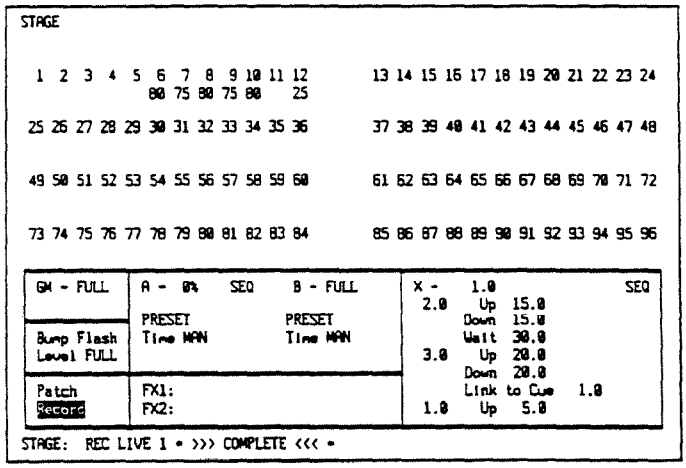
FADER A to 100% and "SCENE A" Channel 12 Controller to 25%.



Press

REC LIVE 1 * *

to record the new level.



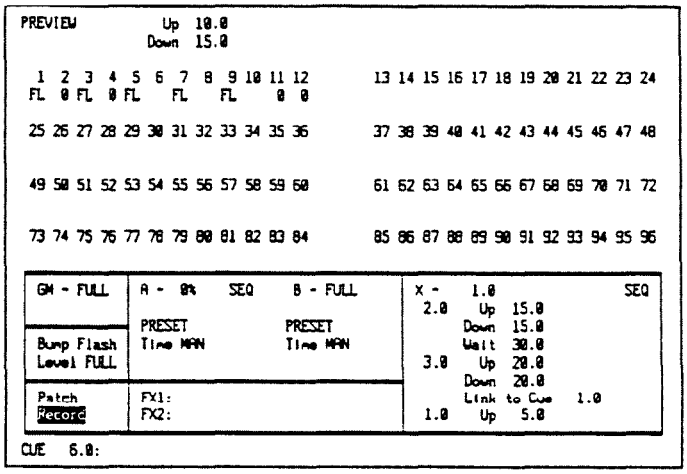
Modify Cue Levels Blind

You can modify cue levels without showing the changes on stage by switching to a *Preview* display and making your changes.

Press

CUE 6 *

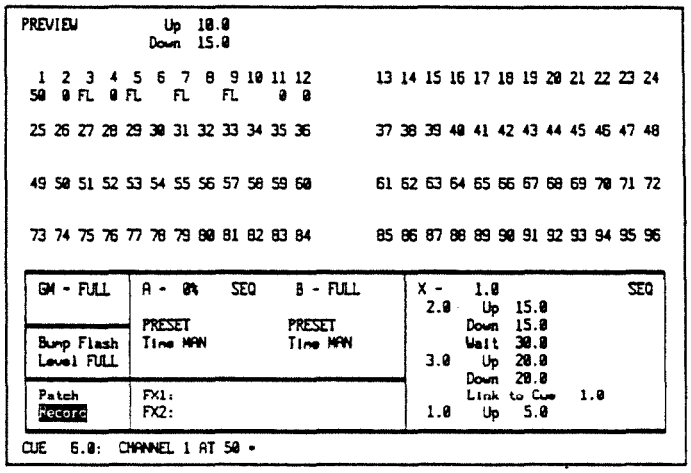
to see the cue 6 *Preview* display.



Press

1 @ 5 0

to record channel 1 at 50% in cue 6



Caution

New channel levels are automatically recorded when you change them. In a Preview *display you do not get a warning that you are changing memory.*

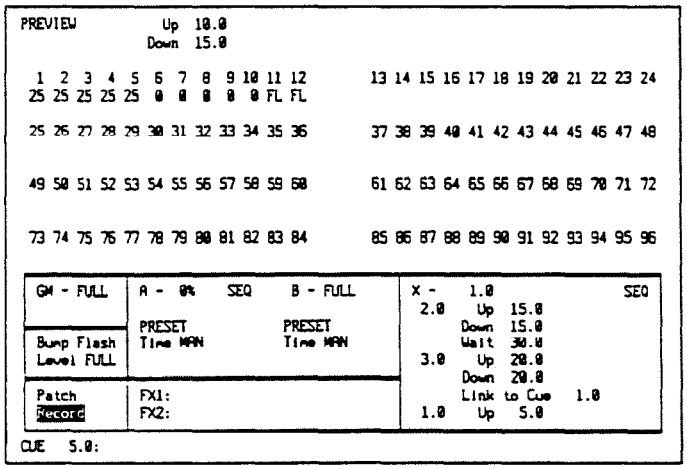
Modify Cue Levels with Tracking

The Tracking Function in Preview Mode forces recorded channel level(s) to track through cues until there is a change in levels. This allows easy correction of levels for a channel or channels which have the same level through a series of cues.

Press

CUE 5 *

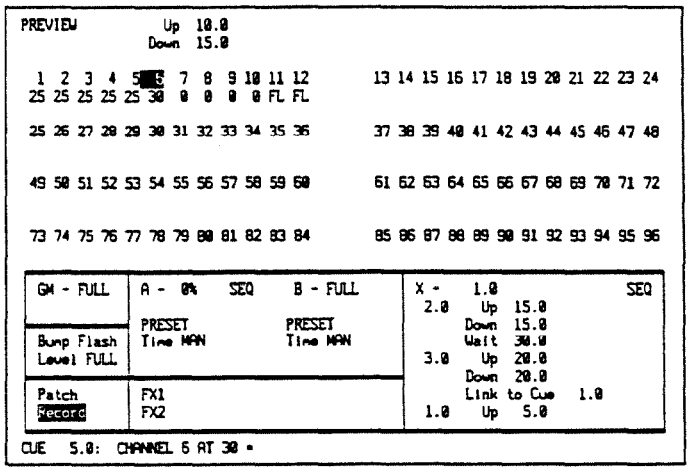
to see the cue 5 *Preview* display.



Press

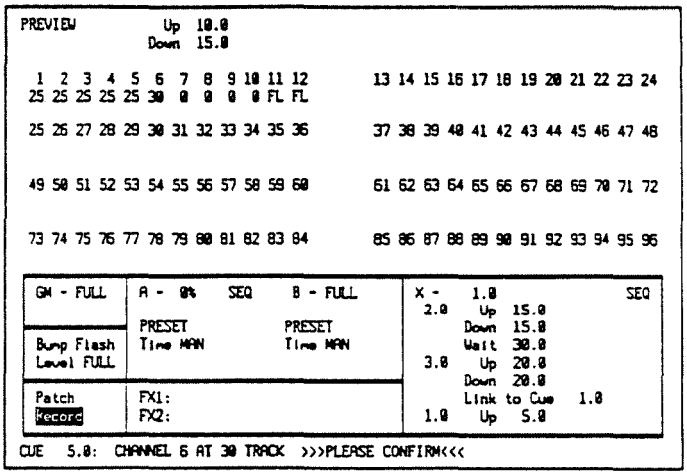
6 @ 3 0

to change the channel 6 level.



Press

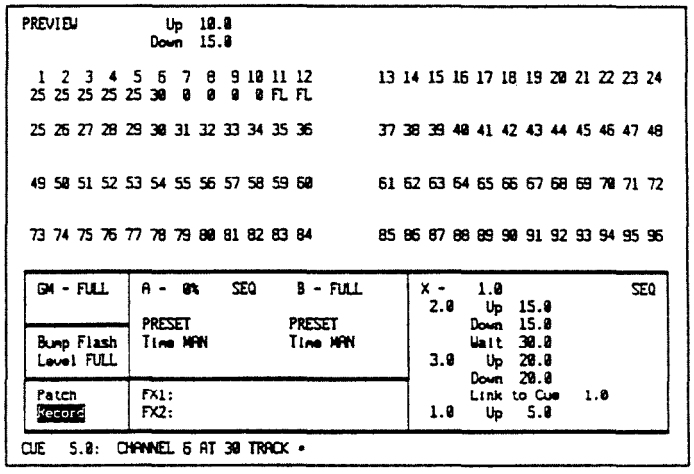
to specify tracking.



TRACK >>>PLEASE CONFIRM<<< asks if the selected channels should track through to the next cue. To avoid channel tracking press CLEAR or start a new command.

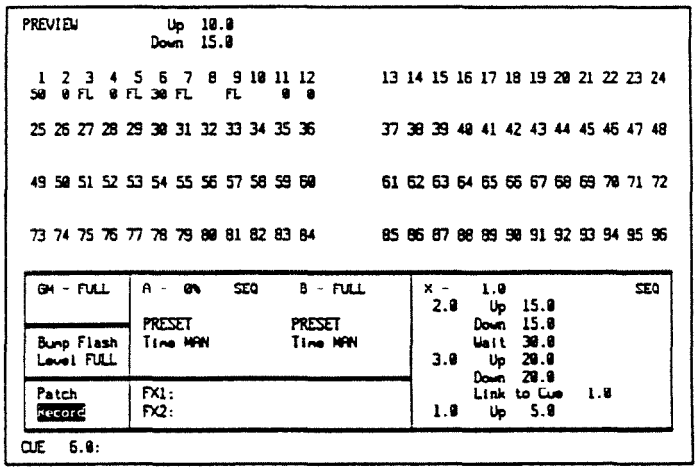
Press

to confirm tracking.



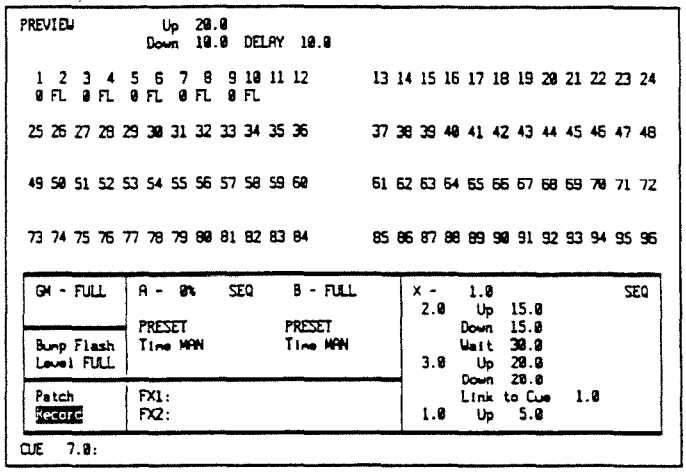
Press

to to see cue 6.



Channel 6 has tracked into cue 6, since the cue 6 level for the channel was the same as its cue 5 level. The channel will track through at the new level until it encounters a cue with a different channel level.

Press [NEXT +1] to see cue 7.



The new channel 6 level did not track through to cue 7 because cue 7 had a different level for channel 6 than cue 5 and cue 6.

Modify Cue Parameters

Fade, delay, and wait times, and cue links, can be modified in any Mode.

To modify a time value or cue link

Press [CUE] [#] [TIME] [#] [*]

or

Press [CUE] [#] [DELAY] [#] [*]

or

Press [CUE] [#] [WAIT] [#] [*]

or

Press [CUE] [#] [LINK TO] [#] [*]

New information appears in the CueSheet. This procedure does not change recorded channel levels or Command Line information not specifically addressed by the procedure. Changing this information does not effect a cue already in the playback buffer (either active or pending).

Delete Cue Parameters

Fade, delay, and wait times, and cue links, can be deleted in any Mode.

To delete a time value or cue link

Press CUE [#] TIME *

or

Press CUE [#] DELAY *

or

Press CUE [#] WAIT *

or

Press CUE [#] LINK TO *

This procedure does not change recorded channel levels or Command Line information not specifically addressed by the procedure. Changing this information does not change the cue in the playback buffer (either active or pending).

When deleting a fade time, CueSheet shows the cue with no recorded fade time.

When deleting delay or wait times, or cue links, the information disappears from the CueSheet.

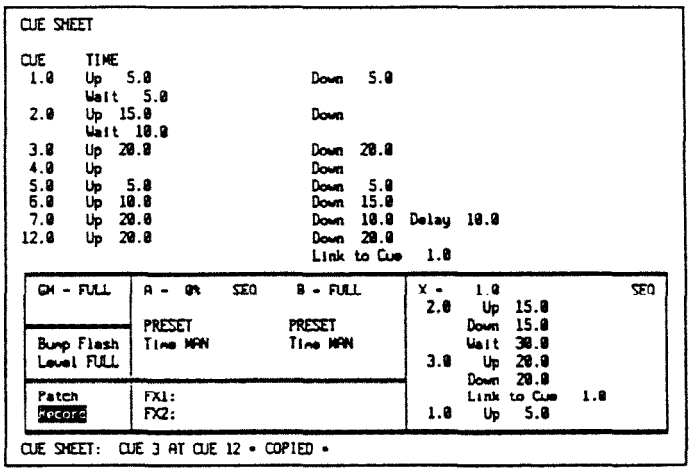
Copy Cues

Cues can be copied in the *Stage* display, the *Cue Sheet* display, or in a *Preview* display. The procedure is the same in all of these displays.

Press

CUE SHEET CUE 3 @ CUE 1 2 *

to copy cue 3 to cue 12 in the *Cue Sheet* display without changing the values of cue 3.



If there is already a cue 12 you will be asked to confirm the copy command and will have to press * to confirm the copy.

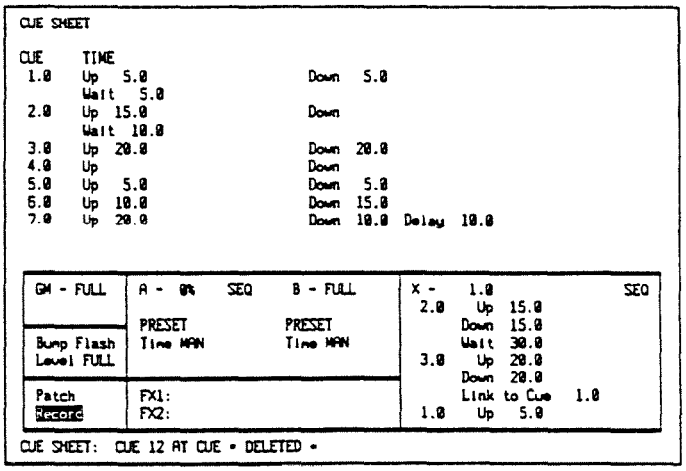
Delete Cues

You can delete any cue you wish while in the *Stage* display, the *CueSheet* display, or a *Preview* display.

Press

CUE 1 2 @ * *

to delete cue 12.



The system will ask >>>DELETE?<<< after the first *.

This does not change stage levels, even if you are in the *Stage* display.

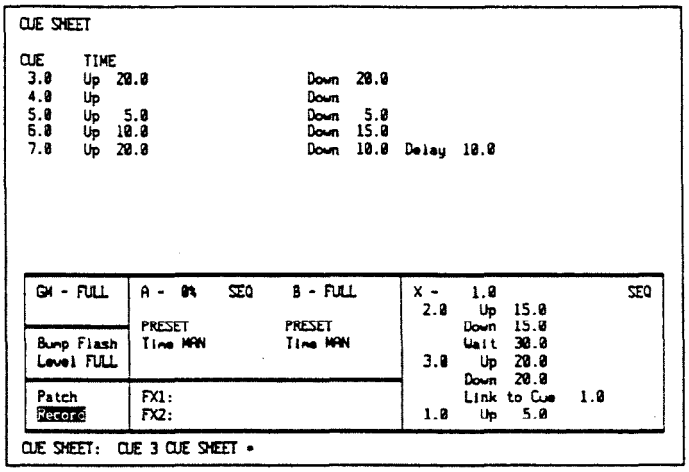
Cue Sheet

You can switch to the *Cue Sheet* display to see information on cues, time assignments, link status, etc. Basic cue information is shown next to each cue number, on one line per cue. Wait times are treated as separate line items and appear below the assigned cue.

Press

CUE 3 CUE SHEET

to see the *Cue Sheet* display with cue 3 at the top.



Press NEXT -1 to move the display up one cue at a time.

Press LAST -1 to move the display down one cue at a time.

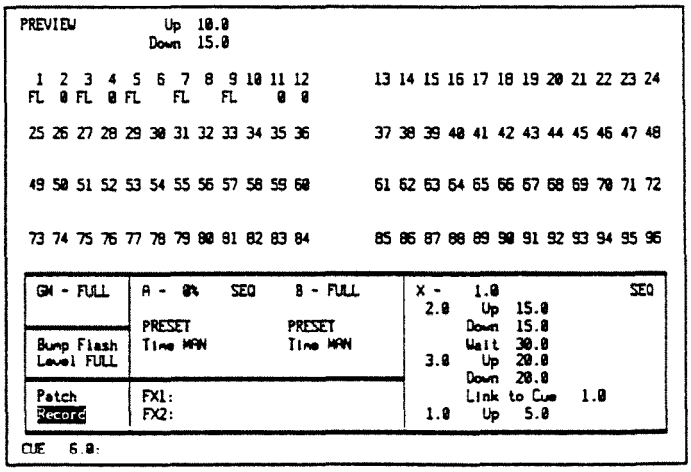
Preview Display

You can use the *Preview* display to preview cues or to modify them blind (without the results showing on stage). Changes made to channels in Preview mode are immediately recorded. If the cue is also active on stage, the stage levels do not change.

Press

CUE 6 *

to see the cue 6 *Preview* display.



Press NEXT -1 to see the *Preview* display for the next cue.

Press LAST -1 to see the *Preview* display for the last cue.

Effects

A special effect is a series of lighting steps executed repeatedly with a specified time between each step. These are often called "Chases."

Each special effect can have up to 96 steps. Each step can have one channel or one cue memory assigned to it, depending on the chase type chosen in the main *FX Memory* menu.

Step time is set in memory and can be modified by FADER FX1 and FADER FX2 Time Controls. You can assign step times from .1 to 999.9 seconds. You can manually adjust step time between .1 and 3 seconds. FADER FX1 and FADER FX2 positions determine the stage levels of channels in an effect.

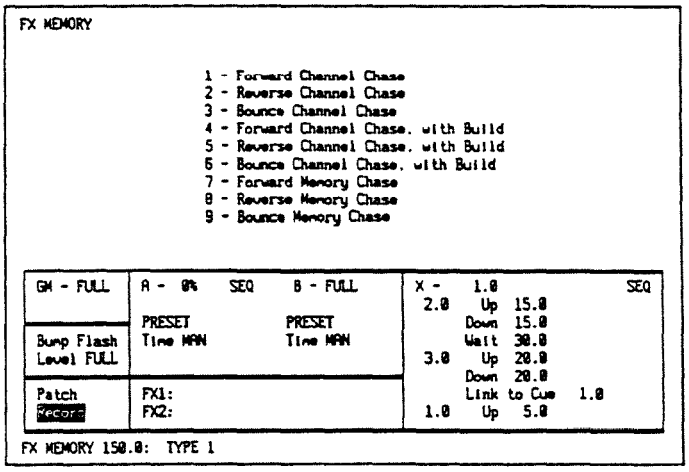
Access an Effect Memory

You access effect memories the same way whether you are going to define a new effect or modify an existing effect.

Press

FXM 1 5 0 ✱

to see the *Effect Type* display for effect #150.



Select an Effect Type

The *Effects Type* menu lets you select the chase type. There are 9 effect types defined for LightBoard M, of which the first six are channel chasses (each step is a channel) and the last three are memory chases (each step is a cue). Once defined, a channel chase effect can be changed to any other type of channel chase effect, but not to a memory chase effect. Memory chase effects cannot be changed to channel chase effects. To change between the two types of effects you must delete the memory and re-define it.

1 - Forward Channel Chase

At chase start, all channels are OFF. Subsequent steps turn their assigned channels ON and previous step channels OFF.

2 - Reverse Channel Chase

Causes channel steps to execute in reverse numerical order.

3 - Bounce Channel Chase

First pass is a forward channel chase, and subsequent passes alternate between reverse and forward channel chases.

4 - Forward Channel Chase, with build

All channels are OFF at chase start. Each step turns its assigned channel ON, and does not turn previous step channel OFF. At end of chase, all lights are ON; they are all extinguished at the beginning of the next pass.

5 - Reverse Channel Chase, with build

Same as 4, except steps execute in reverse order.

6 - Bounce Channel Chase, with build

Starts with the first pass as a Forward Channel Chase with build, then alternates between reverse and forward channel chases with build.

7 - Forward Memory Chase

At chase start, all memories are OFF. Subsequent steps turn their assigned memory ON and previous step memory OFF.

8 - Reverse Memory Chase

Causes memory steps to execute in reverse order.

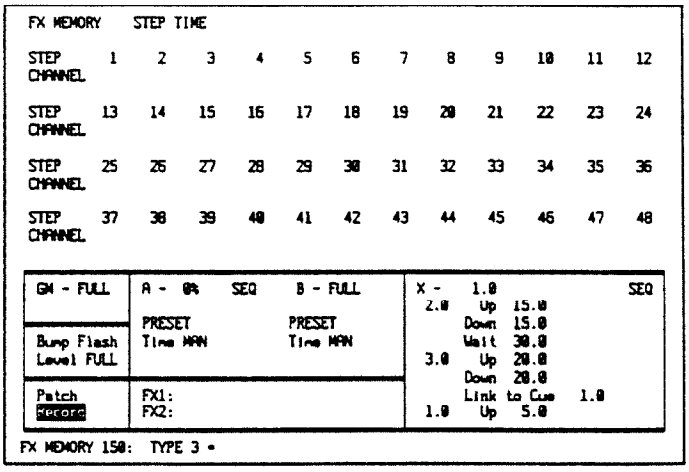
9 - Bounce Memory Chase

First pass is a forward memory chase, and subsequent passes alternate between reverse and forward memory chases.

Press

3 *

to choose the Bounce Channel Chase type and see the *FX Memory* display for the selected effect.



If you are accessing an already existing effect and do not wish to change the effect type, just press * when the *Effects Type* display appears.

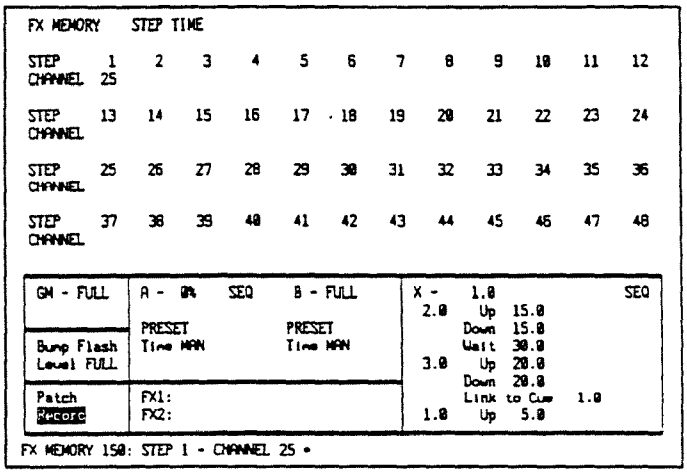
Assign Effect Steps

The following demonstration shows assigning channels to steps. The procedure for assigning memories (cues) to steps is identical, except displays showing CHANNEL would show MEMORY.

Press

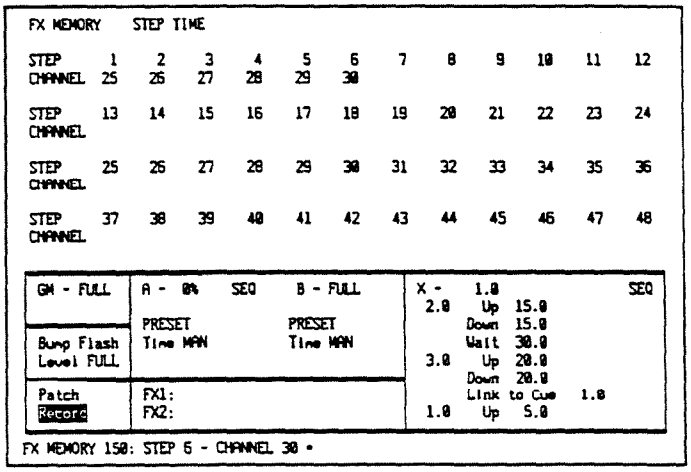
1 @ 2 5 *

to assign channel 25 to step 1.



Assign

channels 26 through 30 to steps 2 through 6. You must do this one step at a time.



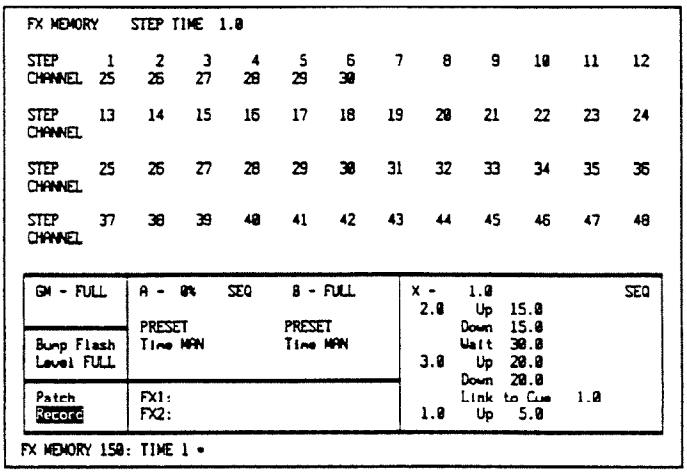
Assign Step Time

You can assign step times for each effect from .1 to 999.9 seconds. All of the steps in a single effect will be the same duration.

Press

TIME 1 *

to assign a step time of one second to this effect.



Modify an Effect

You can easily modify an effect after it has been recorded. The only restriction is that a channel effect cannot be changed into a memory effect, or a memory effect into a chanel effect.

Do not modify an effect while it is running.

Press FXM [#] * [type #] * to modify a channel effect type.

Press FXM [#] * * and change the required step(s) to modify or add steps to an existing effect.

Press FXM [#] * * TIME [time] * to change the recorded step time for an effect.

Play Back an Effect

Channel levels of effects **FADER FX1** are piled-on to levels derived from **FADER FX2**, **FADER A/B**, **FADER X** and the submasters. This demonstration assumes that all sources of channel levels besides **FADER FX1** are OFF. The procedure for playback on **FADER FX2** is identical to playback on **FADER FX1**.

Do not modify an effect while it is running.

Press

STAGE

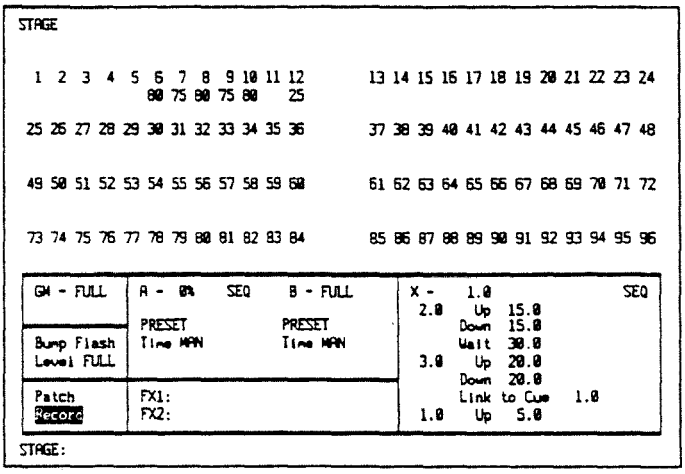
to return to the *Stage* dislay.

Turn

FADER FX1 Time Control to MEM.

Move

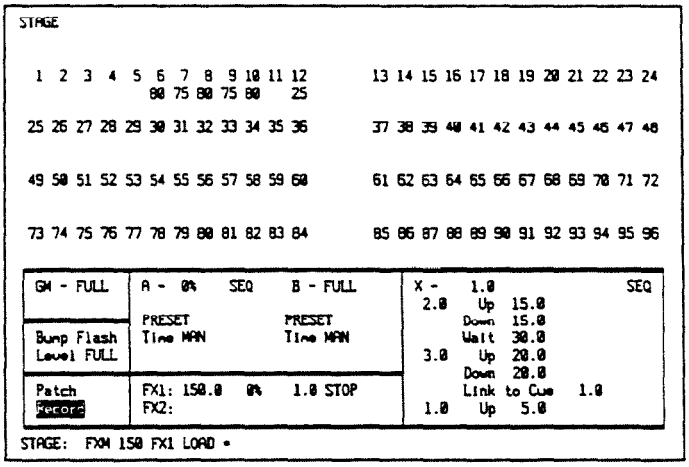
FADER FX1 to its lower limit (0%).



Press

FXM 1 5 0

to load effect memory #150 onto FADER FX1.

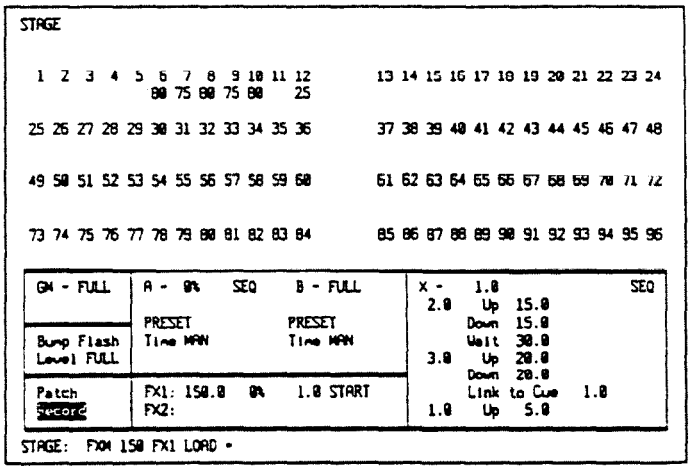


Press S/S under FADER FX1 to start the effect.

Effect 150 starts but does not appear on stage because FADER FX1 is at its lower limit (0%).

Move

FADER FX1 to its upper limit to fade the effect on stage.



STAGE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
					80	75	80	75	80		25												
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
	FL																						

STAGE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
					80	75	80	75	80		25												
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
		FL																					

STAGE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
					80	75	80	75	80		25												
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
			FL																				

STAGE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
					80	75	80	75	80		25												
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
				FL																			

STAGE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
					80	75	80	75	80		25												
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
					FL																		

STAGE

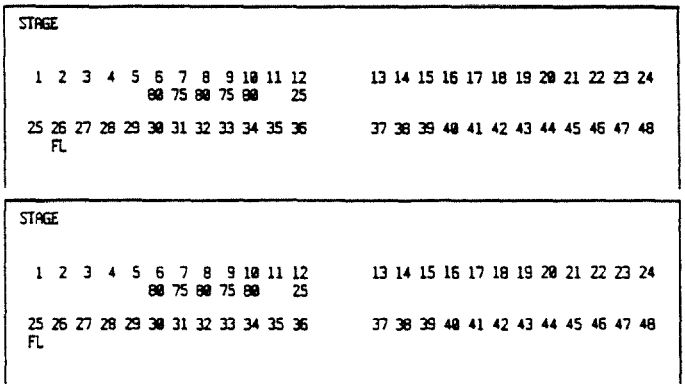
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
					80	75	80	75	80		25												
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
				FL																			

STAGE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
					80	75	80	75	80		25												
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
			FL																				

STAGE

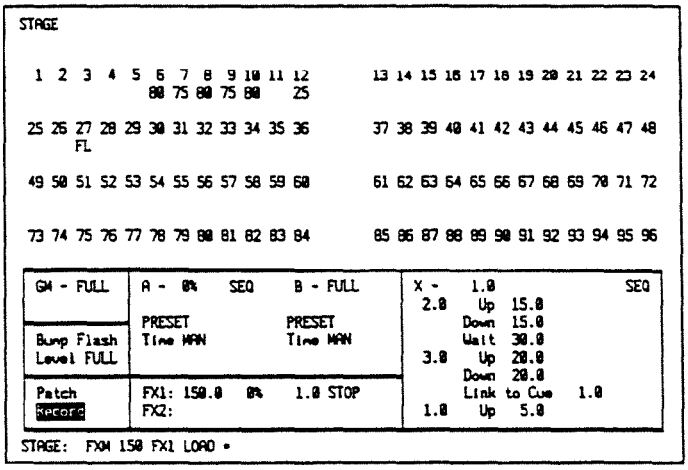
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
					80	75	80	75	80		25												
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
		FL																					



Stop an Effect

You can stop or start an effect any time while it is in progress. The step that was ON when you stopped the effect will remain on stage.

Press S/S below **FADER FX1** to stop the effect.



Fade Effect Levels

You can fade the effect in and out while it is running by using **FADER FX1** as the level control for the effect.

Modify the Effect Step Rate

You can use the time control above the effect fader to control the step rate of an effect while the effect is running. The 9 o'clock position represents 0.1 second while the 3 o'clock represents 3 seconds. The effect freezes if the time control is set to its 7 o'clock position ("MAN"). In this position, each push of S/S advances the step list by one. Normal operation requires the controller to be set at 5 o'clock ("MEM").

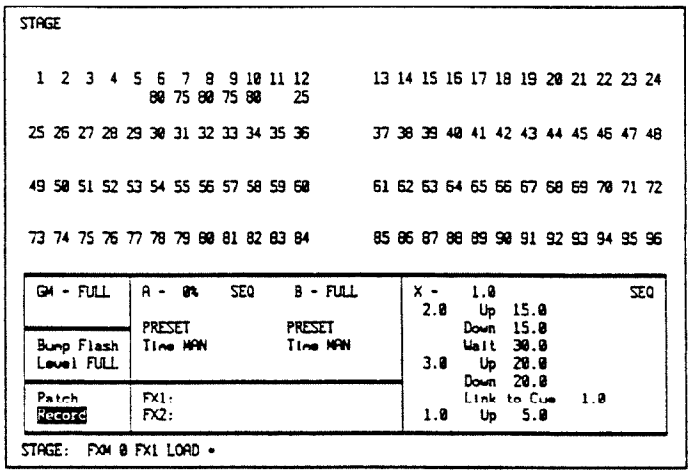
Clear an Effect from an Effect Fader

To clear an effect from an effect fader, load effects memory ZERO to the fader.

Press

FXM 0 *

to cancel the effect from the fader.



If the effect is currently running, it is cancelled. All lights associated with the effect will go OFF.

Copy an Effect

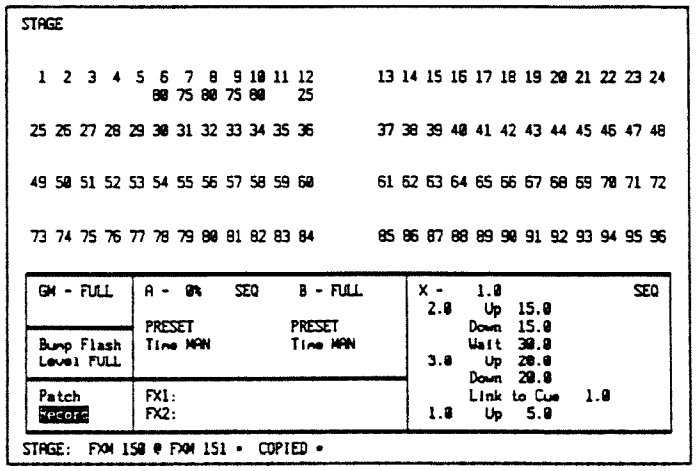
You can copy an effect from the *Stage* display or any *Preview* or *FX Memory* display.

Press

FXM 1 5 0 @

FXM 1 5 1 *

to copy the contents of effects memory #150 into effects memory #151.



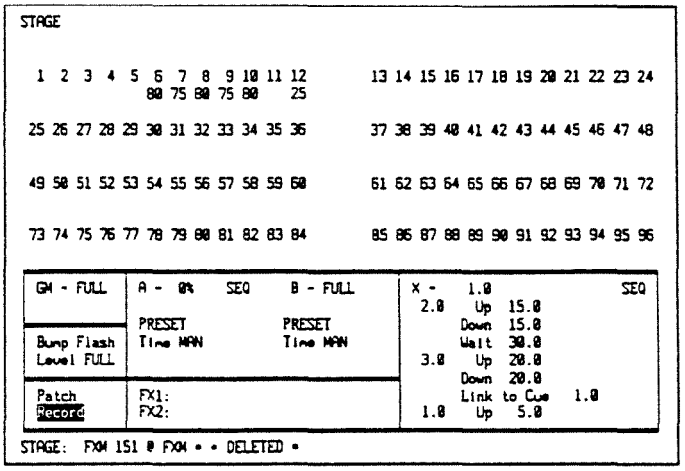
Delete an Effect

You can delete an effect from the *Stage* display or any *Preview* or *FX Memory* display.

Press

FXM 1 5 1 @ * *

to erase effects memory #151.



The system will ask >>>DELETE ? <<< after the first * to make sure you wish to delete this effect.

Submasters

Groups of channels can be controlled by each of 24 or 48 overlapping submasters in the console, and each of 8 remote submasters.

Submasters add levels to total stage output in a highest takes precedence manner. Submasters are normally OFF (set at bottom limit) and are brought on stage by moving the submaster towards its top limit. Channels fade to their required levels as the submaster is moved to to 100% ("10").

Any number of channels can be assigned to a submaster. The same channels can be assigned to different submasters at different levels. Channels or cue memories may be assigned to submasters. Submasters can only be assigned using the keypad.

The system stores submaster levels provided by cues and channels on disk during a Save Memory To Disk procedure in the Setup Menu.

This demonstration assumes that basic data input in other sections of this manual is still in memory.

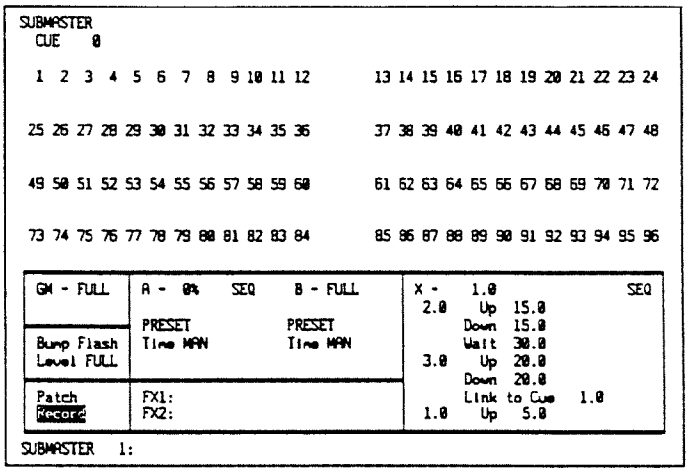
Load Cues On Submasters

You can load submasters with cues from the *Stage* display or from any of the *Submaster* or *Preview* displays.

Press

SUB 1 ★

to get to the *Submaster 1* display.



The color of the cue entry shows the current status of the submaster.

- Yellow 0 shows submasters with channel assignments only.
- Green # shows channels were assigned by cue
- Yellow # shows channels were modified after assignment by cue.

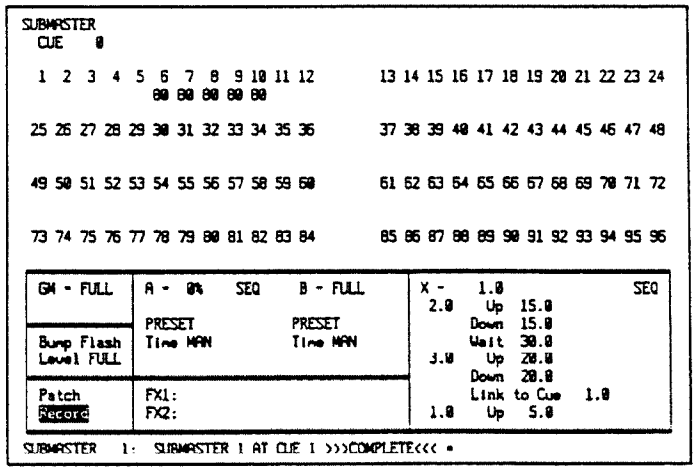
Channel level colors also indicate the source of the current level.

- Aqua channel level shows channel was assigned by cue.
- Yellow channel level shows channel was modified directly.

Press

SUB 1 @ 1 ★

to load cue 1 onto *Submaster 1*.



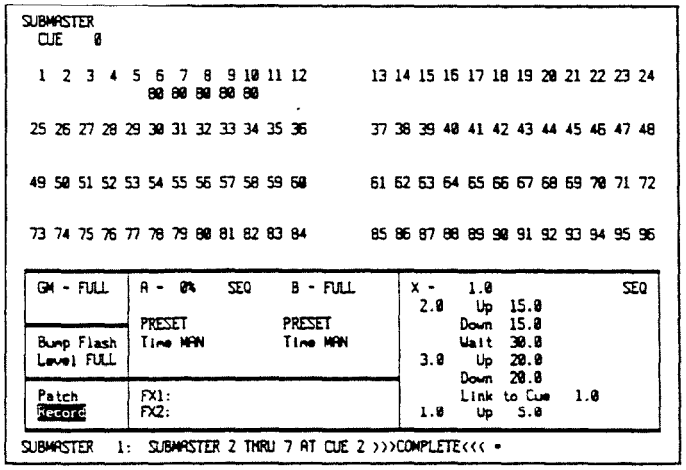
Loading Multiple Cues on Multiple Submasters

You can load a series of cues to a list of submasters in a single command to save time.

Press

SUB 2 THRU 7 @ 2 *

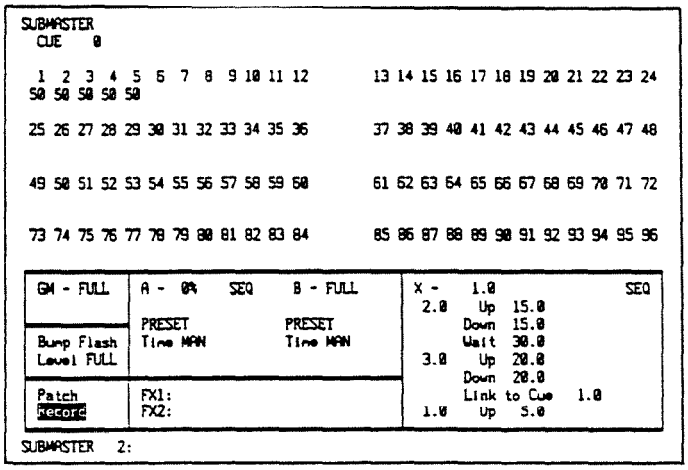
to load submasters 2 through 7 with cues starting at cue 2.



Press

SUB 2 *

to see that cue 2 was loaded onto submaster 2.



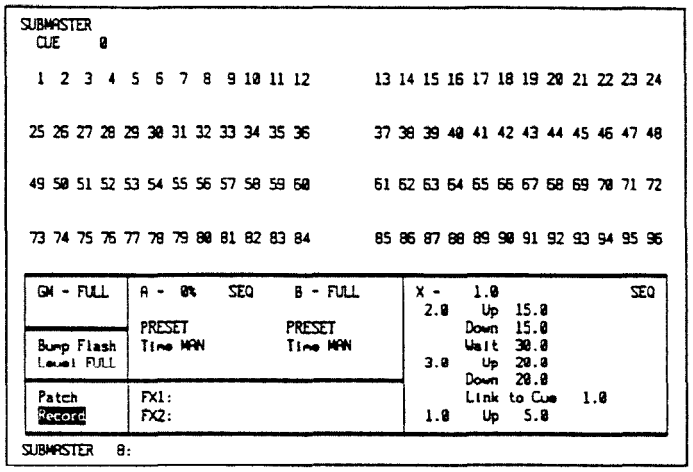
Assigning Channels to Submasters

The *Submaster* display lets you set channel levels for individual submasters. You access this display by specifying he submaster you wish to look at or modify.

Press

SUB 8 *

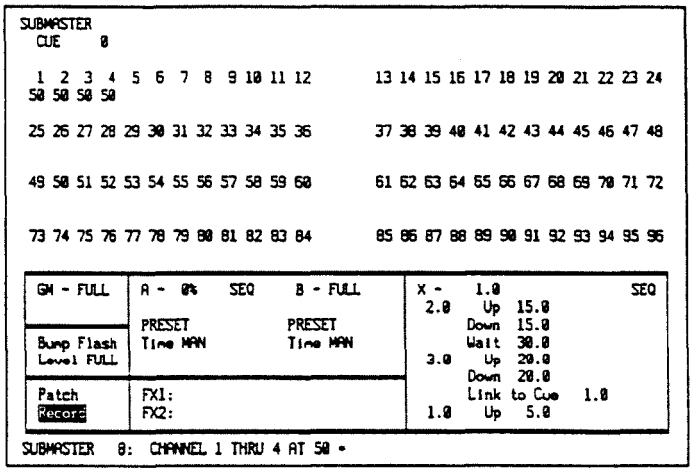
to see the *Submaster* display for submaster 8.



Press

1 THRU 4 @ 5 0

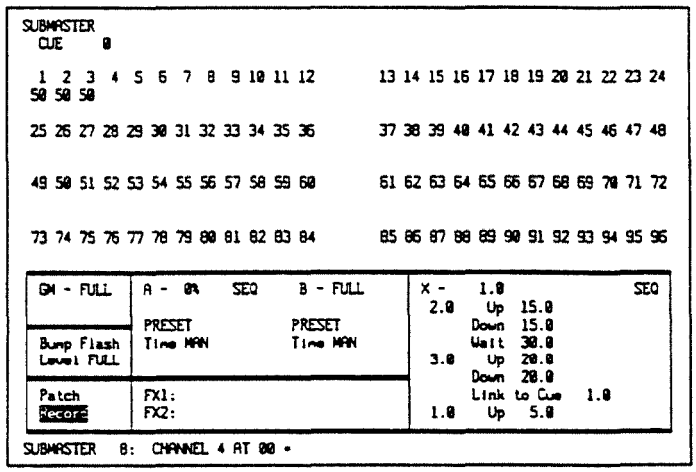
to set channels 1 through 4 in submaster 8.



Press

4 @ 0 0

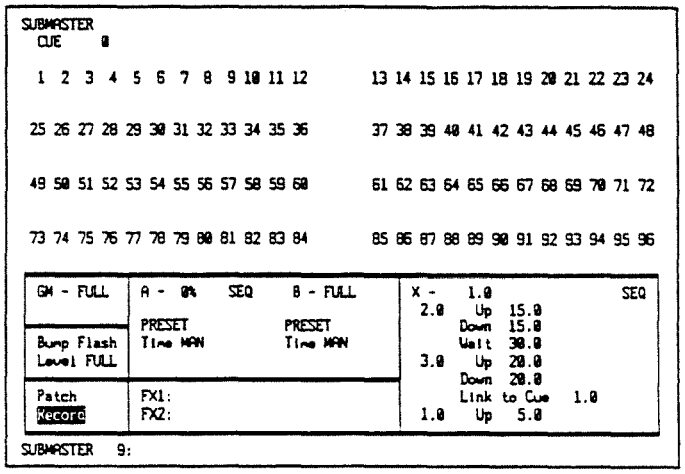
to set channel 4 to ZERO.



Press

NEXT +1

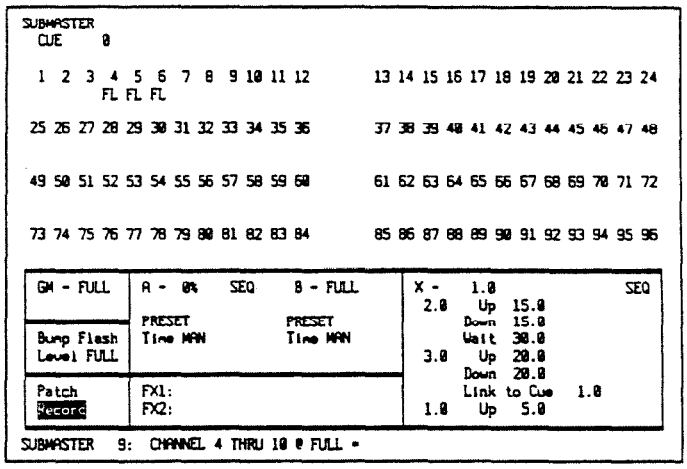
to see the *Submaster 9* display



Press

4 THRU 6 @ FULL

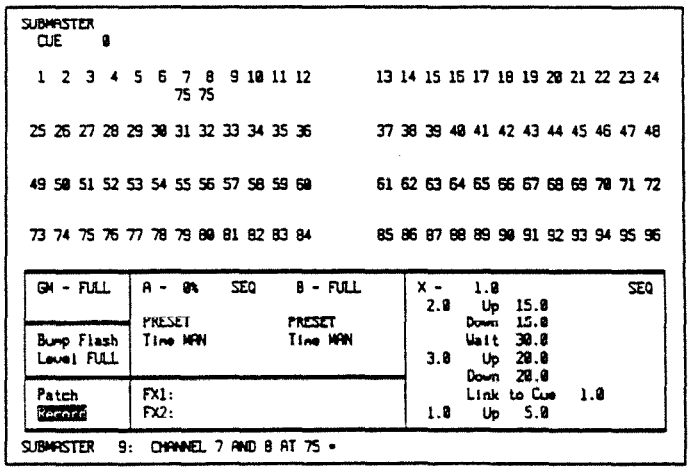
to set channel levels for submaster 9.



Press

NEXT +1 7 AND 8 @ 7 5

to set channel levels for submaster 10.



Preview Submasters

To preview a submaster, go to the submaster you wish to see and do not make any changes while you are in the submaster.

Modify Submasters

To modify a submaster, go to the submaster you wish to modify and assign a new cue or change channel levels as required.

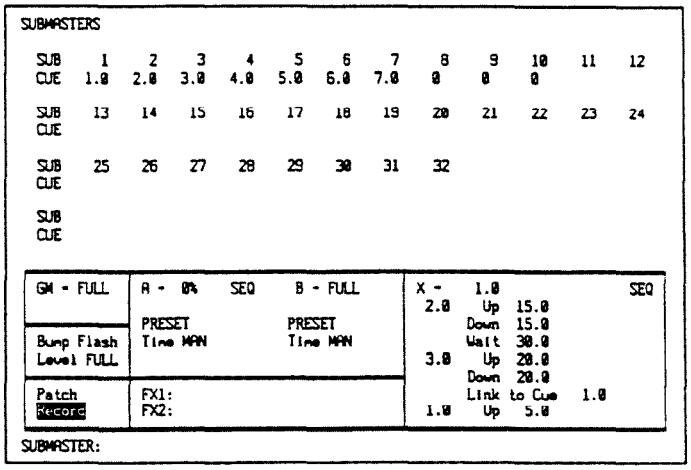
Preview Submaster Assignments

You can see the basic information for all submaster assignments on a single screen by accessing the *Submasters* display.

Press

SUB *

to see the *Submasters* display.



The *Submasters* display shows a listing for all the system submasters with their associated assignments. The system shows cues assigned to submasters with green cue number. When channel levels are changed in the submaster buffer, the cue numbers change to amber. If all channel levels are assigned directly in the submaster buffer, the cue number is an amber 0.

Pile Submasters on Submasters or Cues

Levels assigned to a submaster may be piled-on to levels already on stage from other sources. Channel levels input by submasters are shown in cyan.

Record Stage Levels Modified by Submasters

Once light levels have been set on stage as required, record these levels in a cue using the same procedure used to record stage looks generated via channel commands.

Press

[STAGE]

to get back to the *Stage* display.

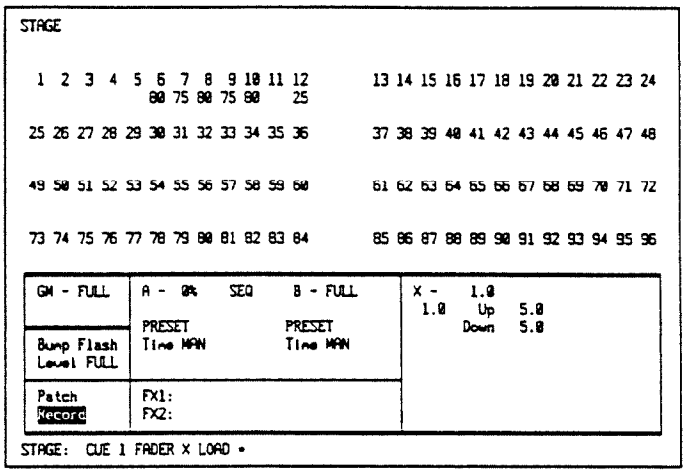
Make sure that

FADER X sequencing is OFF.

Press

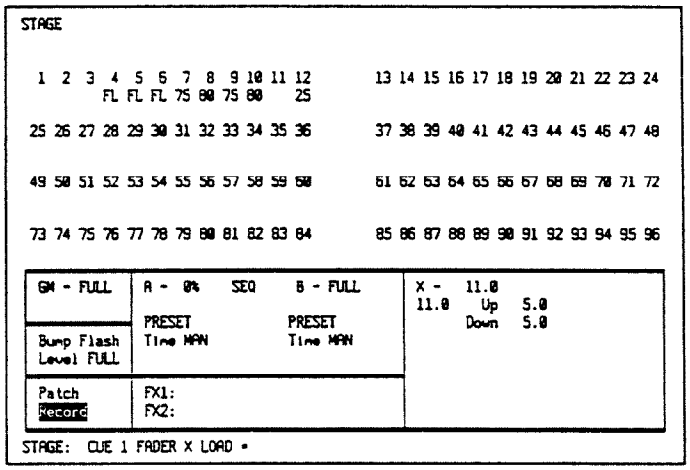
[CUE] [1] [X] [GO]

to put cue 1 on stage.



Move

Submaster 9 to 100% ("10").



Press

[REC LIVE] [1] [1] [TIME] [5] [*]

to record the combined stage levels as cue 11.

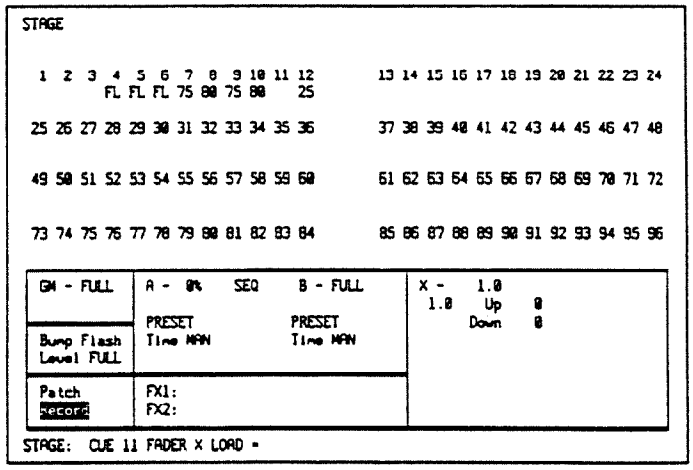
Move

Submaster 9 to its lower limit.

Press

[CUE] [1] [1] [X] [GO]

to try the new cue 11.



Remote Submasters

The system treats remote submasters just like internal submasters. Remote submasters are the last 8 submasters in the system. If you have 48 internal submasters the remote submaster information is on the second page of the *Submaster Assignment* display.

The procedure for loading, previewing, and modifying remote submasters is the same as the procedure for internal submasters.

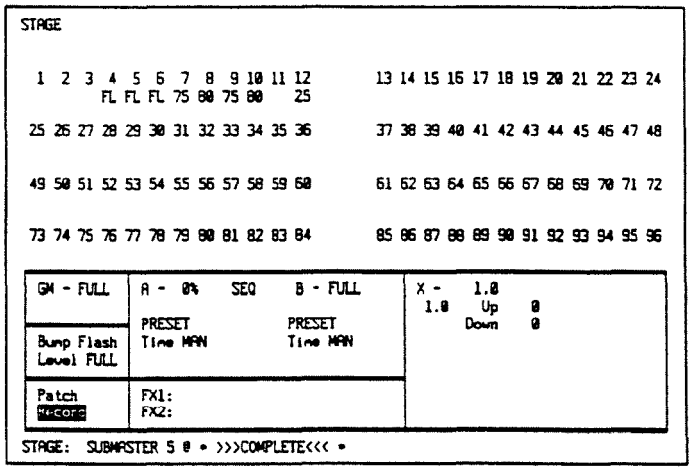
Delete Submaster Assignments

You can delete submaster assignments from the *Stage* display or from any *Submaster* or *Preview* display.

Press

SUB 5 @ * *

to delete submaster 5.



The system will ask >>>UNLOAD?<<< after the first * to make sure you wish to delete the submaster.

Remote Focus

An optional hand held Remote Focus ("Remote Control," or "Rigger's Remote") is available for LightBoard M. It supports all functions which do not need manual faders. Operation of these functions through the Remote Focus is essentially the same as through the Control Console. Note that [X GO] has two functions. To play back the next pending cue, push [X GO]. To load and play back a specific cue, push [CUE][#][X GO].

The Remote Focus is active only when turned ON in the Setup Menu (see page). Always turn the Remote Focus OFF in the Setup Menu when it is unplugged. If this is not done, the console is still looking for data from the Remote Focus, and may interpret noise on the unterminated line as data.

This unit contains an 8-hour Ni/Cd battery. For maximum battery life, charge the battery for 8 hours, then unplug the charger and store the unit. To keep the battery from developing a "memory" of its discharge parameters, occasionally let the battery fully discharge before recharging, or go through at least 10 full discharge cycles before beginning normal use.

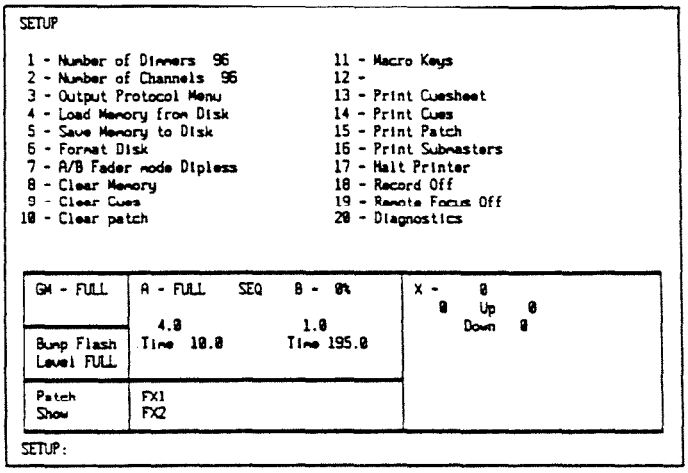
Setup Display

The *Setup* display lets you set system parameters and use the floppy disk drive.

Press

SETUP

to see the *Setup* display.



System Setup

The *Setup* display lets you tell the system how many dimmers and channels you have.

1 * [# of dimmers] *

Sets the number of dimmers in the system.

2 * [# of channels] *

Sets the number of channels in the system.

3 *

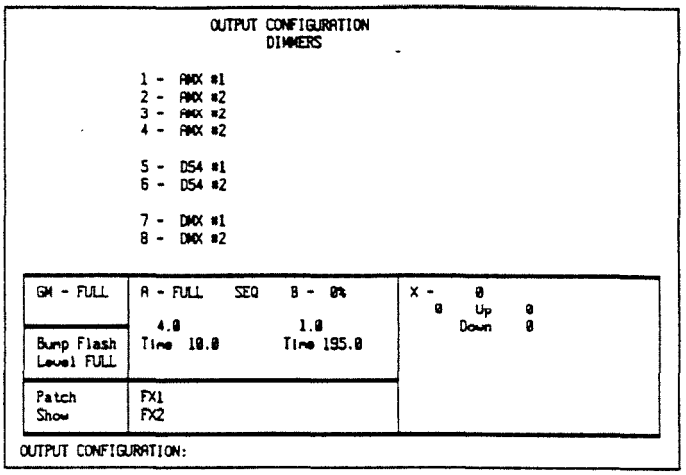
Gets you to the *Output Protocol* menu.

The *Output Protocol* menu lets you set set up the dimmer numbers that are to be controlled by each of the output signals. You can assign dimmers to AMX192 and DMX512 outputs **or** D54 and DMX512 outputs, but you cannot use both the AMX192 and D54 protocols at the same time.

Press

3 *

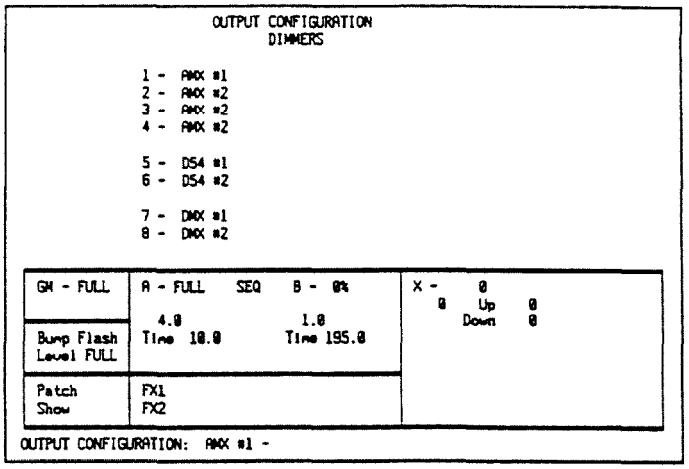
from the *Setup* display to see the *Output Protocol* menu.



Press

1

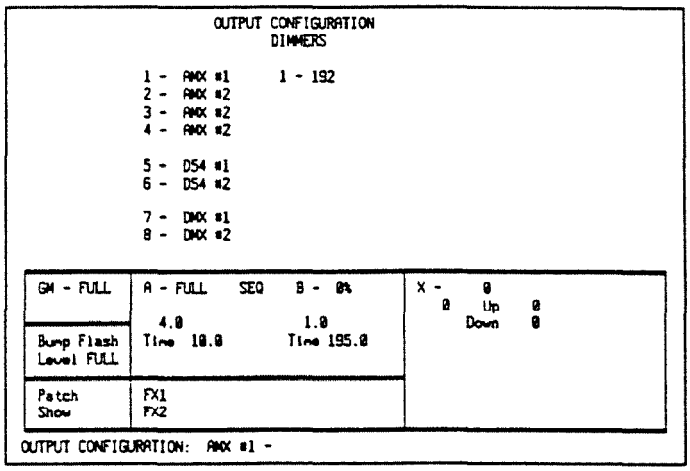
to select the AMX #1 output for dimmer assignment.



Press

1 THRU 1 9 2 *

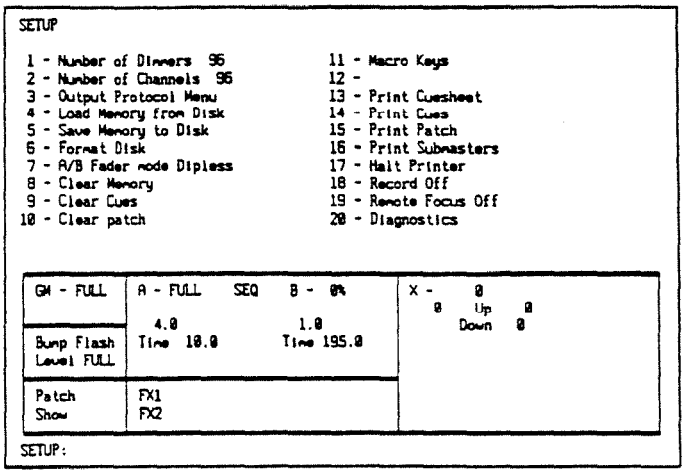
to assign dimmers 1 through 192 to the AMX #1 dimmer output.



Press

SETUP

to return to the *Setup* display.



18**

Turns the Record option ON/OFF (alternate action). When this is ON, all functions that can change memory are locked out.

19**

Turns the Hand Held Remote ON/OFF (alternate action). You should always turn the hand Held Remote OFF when it is unplugged.

20*

Starts a memory diagnostic and displays the current version number.

Library Storage

You can use the floppy disk to store shows for backup or for archiving and later retrieval. You can store up to four shows on each 3.5" 720Kb hard shelled floppy disk.

4*

Initiates a Load Memory request. The command line shows SETUP: 4 - LOAD MEMORY FROM DISK (1-4 ?).

[#]**

Loads system memory from one of four shows on a pre-recorded disk. The system assumes show #1 if no number is entered. The system displays >>>LOADING MEMORY<<< during the memory load and >>>COMPLETE<<< when memory load is done.

5*

Initiates a Save Memory request. The command line shows SETUP: 5 - SAVE MEMORY TO DISK (1-4 ?).

[#] [*] [*]

Saves system memory to one of four shows on a disk. The system assumes show #1 if no number is entered. The system displays >>>SAVING MEMORY<<< during the memory save and >>>COMPLETE<<< when memory save is done.

[6] [*] [*]

Requests a disk format and check. You must format all new disks before first use. The command line shows >>>PLEASE CONFIRM<<< after the first [*]. Press [CLEAR] to cancel request or [*] to format the disk. The system displays >>>FORMATTING<<< while formatting is in progress and >>>COMPLETE<<< when formatting is done.

Clear Memory

The Clear Memory functions let you clear all or part of the system memory.

[8] [*] [*]

Clears all console memory. The command line shows >>>PLEASE CONFIRM<<< after the first [*]. Press [CLEAR] to cancel request or [*] to clear all system memory. The command line shows >>>COMPLETE<<< when memory is cleared.

[8] [*] [*]

Clears only the cues and cue sheet from memory. The command line shows >>>PLEASE CONFIRM<<< after the first [*]. Press [CLEAR] to cancel request or [*] to clear cues and the cue sheet. The command line shows >>>COMPLETE<<< when cues and the cue sheet are cleared.

[1] [0] [*]

Requests a patch table reset. The command line will show SETUP: 10 - CLEAR PATCH ?.

[list] [*] [*]

Resets the selected patch table or patch tables. You can use [AND] and [THRU] to formulate a list of patch tables. The command line shows >>>PLEASE CONFIRM<<< after the first [*]. Press [CLEAR] to cancel request or [*] to reset the selected patch tables. The command line shows >>>COMPLETE<<< when patch tables are cleared.

Macro Keys

You can record a sequence of keystrokes on any one of eight macro keys for later playback. This lets you easily recall sequences of keystrokes that you may use frequently.

1 1 *

Enters the Macro key definition mode.

[#] *

Starts the record action for the selected Macro key (1-8).

[exact keystrokes]

Tells the system what keystrokes you wish to have recorded as the selected macro.

MACRO *

Completes the record action for the selected Function Key.

Print Hard Copy

You can print all or part of the show information you have programmed, so that you can later refer to hard copy if required.

Do not try to use these commands unless a printer is hooked up and is on line.

1 3 * **[list]** *

Prints a hard copy of the listed CueSheet segment. To print a hard copy of entire CueSheet, do not enter **[list]**.

1 4 * **[list]** *

Prints a hard copy of the Preview Display for the listed cues. To print a hard copy of all cues, do not enter **[list]**.

1 5 * **[list]** *

Prints a hard copy of the specified patch tables. To print a hard copy of all patch tables, do not enter **[list]**.

1 6 * **[list]** *

Prints data for the selected submasters. To print a hard copy of all submaster data, do not enter **[list]**.

1 7 *

Halts output from the console to the printer.

The printer will continue printing until its input buffer is exhausted or until you turn it OFF.

Patch Dimmers

In Patch mode you can preview, assign, or modify patch assignments, maximum dimmer levels (proportional patching), and dimmer types, and change the active patch table. Each channel can control any number of dimmers. Four different patch tables are available.

You can reset patch to a one-dimmer-to-one-channel correspondence in 2 ways:

1. Load a disk with one-to-one patch assignments into the system.
2. Execute a Clear Patch in the Setup Menu.

In systems with more dimmers than channels, excess dimmers have no channel assignment until patched. The Clear Patch procedure in the Setup Menu does not change dimmer types (2.4KW, 6/12KW).

This demonstration assumes that patch is set to a one-dimmer-to-one-channel relationship. If not, use Clear Patch in the setup menu.

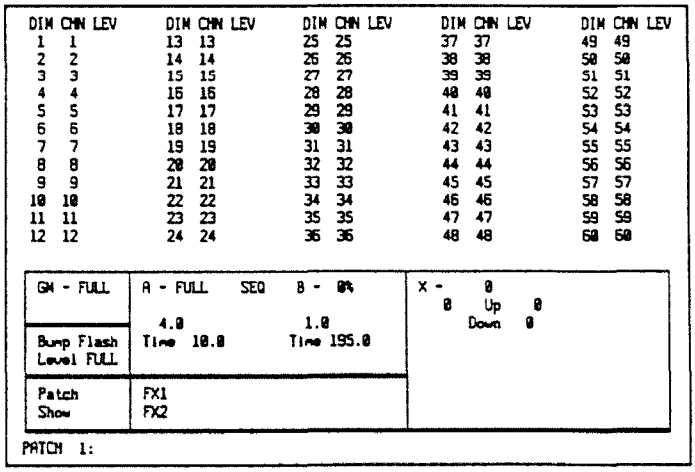
Patch Tables

LightBoard M contains four dimmer to channel assignments known as patch tables. Multiple patch tables can be useful either when dimmer utilization changes at some point in a show, requiring re-patching, or when maximum levels must be reset because of scenery moves or other changes.

Modifications to the active patch table are visible on stage. The active patch table is displayed in amber. Modifications made to inactive patch tables do not change the stage levels. Inactive patch tables are displayed in cyan.

Press

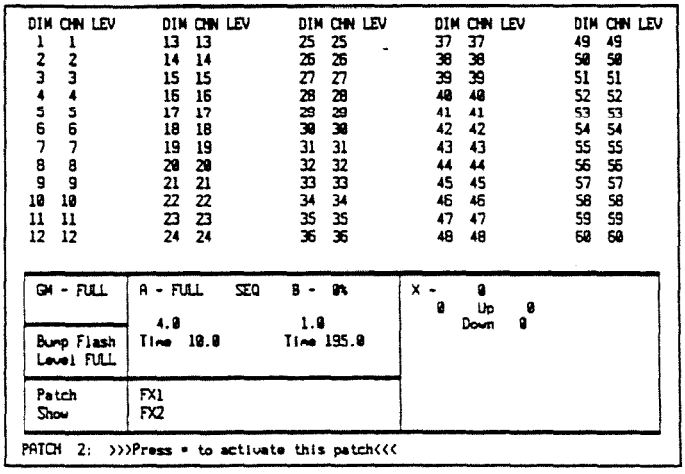
to see the current *Patch* display.



Press

PATCH 2 *

to see the *Patch 2* display.



Dimmers are shown in cyan since this patch is not active. You can modify patch settings blind by starting to modify the settings without pressing * a second time. The results of your patching will not show on stage until you have later selected the patch table.

To exit without changing patch settings, select a new display.

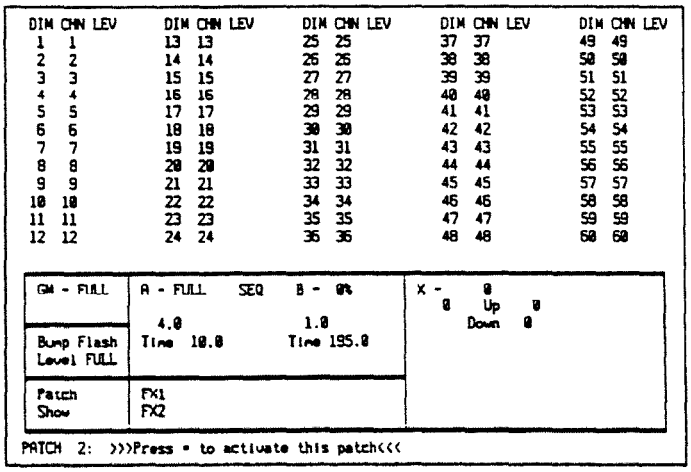
Press NEXT to page forward through the dimmer list 60 dimmers at a time or LAST to page backward through the dimmer list 60 dimmers at a time.

Patch functions work the same in Blind and Live modes. In this tutorial, we will be making all changes live.

Press

PATCH 2 * *

to activate the *Patch 2* display.



You needed to repeat the entire command because you pressed keys other than * when >>>Press * to activate this patch<<< appeared the first time.

The *Patch* display is now amber, showing that it is now active. Changes which represent the differences between the original patch table and Patch table 2 will appear on stage immediately. Changes in patching will be reflected on stage as you make them.

Assign 6K/12K Dimmers

Failure to assign 6KW and 12KW dimmers correctly during system setup will cause dimmer addressing anomalies. Each CD80 dimmer module receives two control signals. Dual 2.4KW dimmers require both control signals. 6KW and 12KW dimmers (one dimmer per module) require only one of these signals. To number dimmers correctly, the system must know which dimmers only require one control signal. This is not necessary with analog dimmers controlled through a demultiplexer interface, since the demultiplexer assigns one dimmer signal to each dimmer.

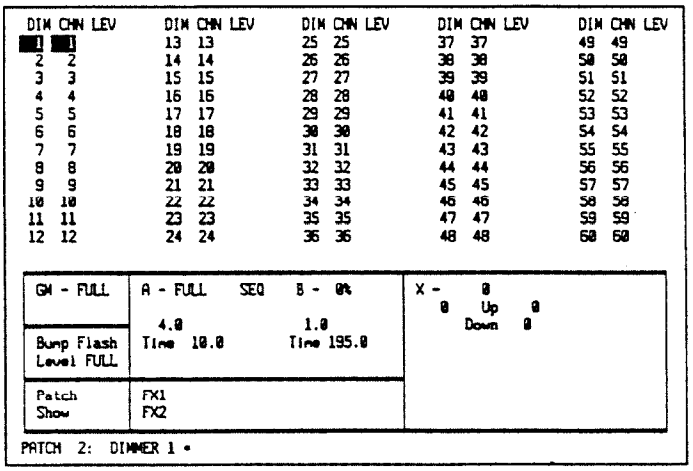
6K/12K assignments are global, and track through all four patch tables regardless of the patch table in which assignment changes were made. The Clear Memory and Clear Patch procedures in the Setup Menu do not change these assignments.

Assign 6K/2K dimmers in numerical sequence to avoid confusion. The first 6/12KW dimmer must be odd numbered. If your system contains no 6KW or 12KW CD80 dimmers, go to "Dimmer-to-Channel Patch" in this chapter.

Press

1 *

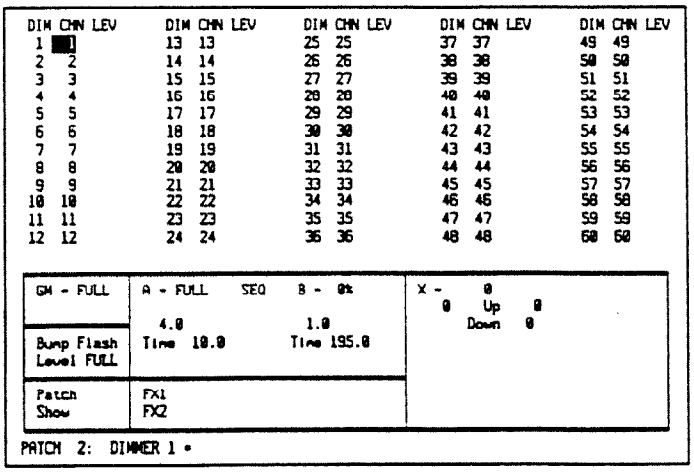
to change dimmer 1 to a 6K/12K dimmer.



Press

1 *

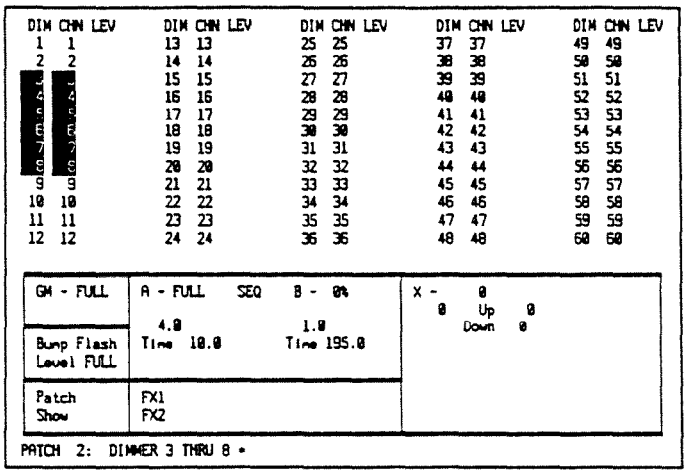
to change dimmer 1 back to a 2.4Kw dimmer.



Press

3 THRU 8 *

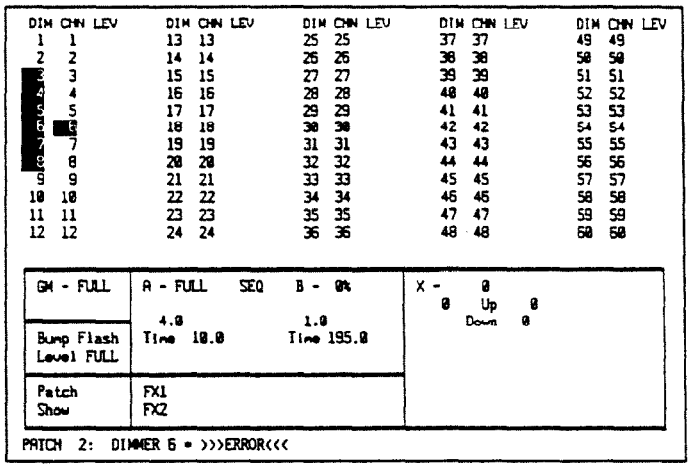
to change dimmers 3 through 8 to 6K/12K dimmers.



Press

6 *

to change dimmer back to a 2.4Kw dimmer.

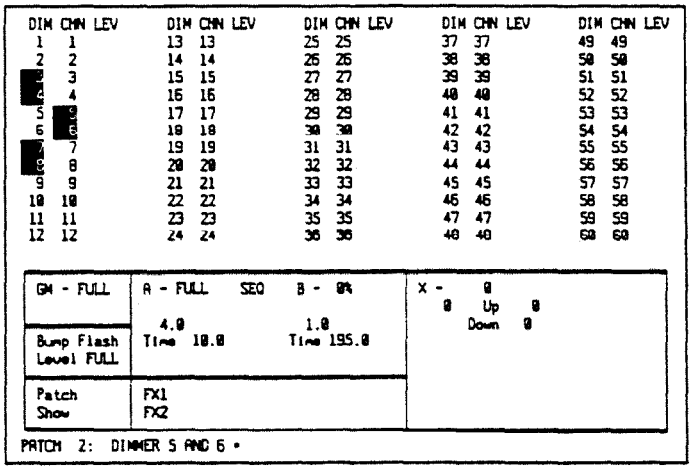


Since 2.4Kw CD80 dimmers are dual dimmers, a single dimmer within a group of 6K/12K dimmers cannot be changed to 2.4KW.

Press

5 AND 6 *

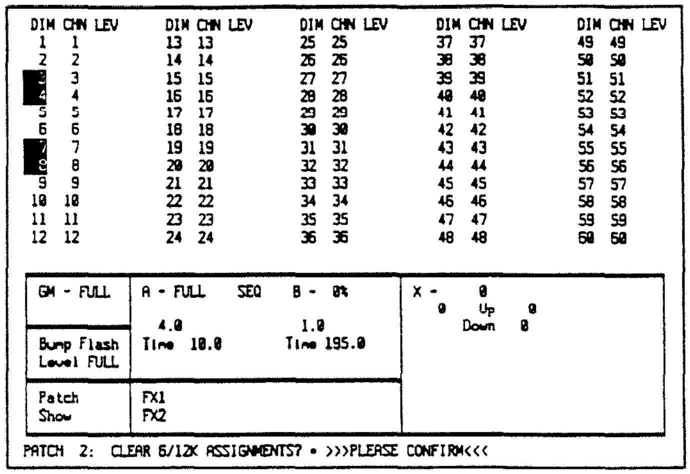
to change dimmers 5 and 6 back to 2.4Kw dimmers.



Press

[*]

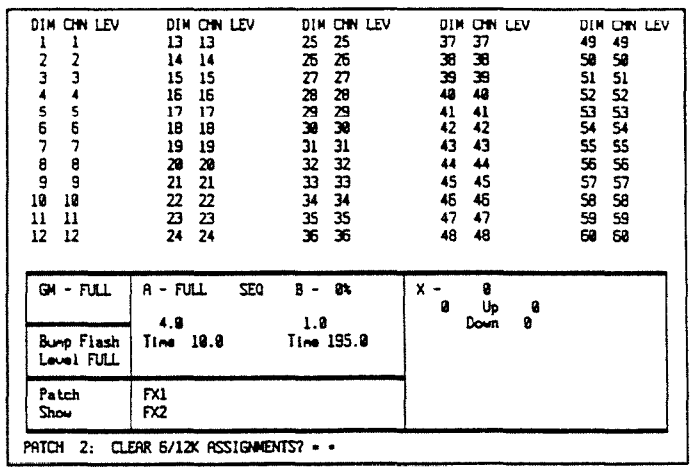
to request all dimmers be changed back to 2.4Kw dimmers.



Press

[*]

to confirm that all dimmers should be changed back to 2.4Kw dimmers.



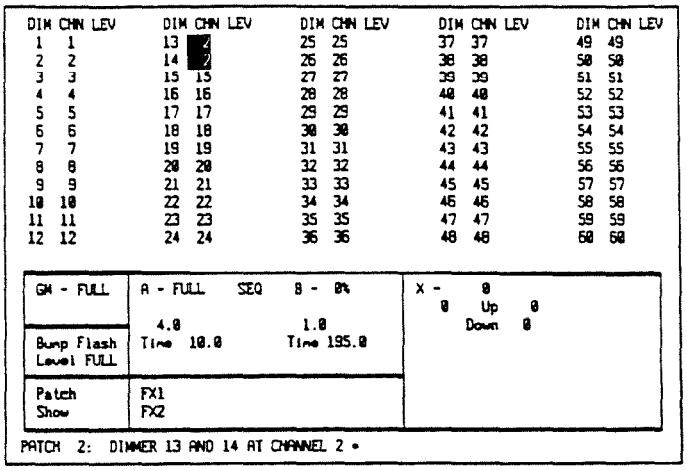
Patch Dimmers to Channels

Any or all dimmers can be patched to any channel in each of the dimmer patch tables. Each dimmer has an associated maximum (proportional) level, which may differ between patch tables. When a channel is at FL on the monitor, actual stage level of each dimmer on the channel is the maximum level set in Patch. The system does not display maximum levels of 100% (the default).

Press

1 3 AND 1 4 @ 2 *

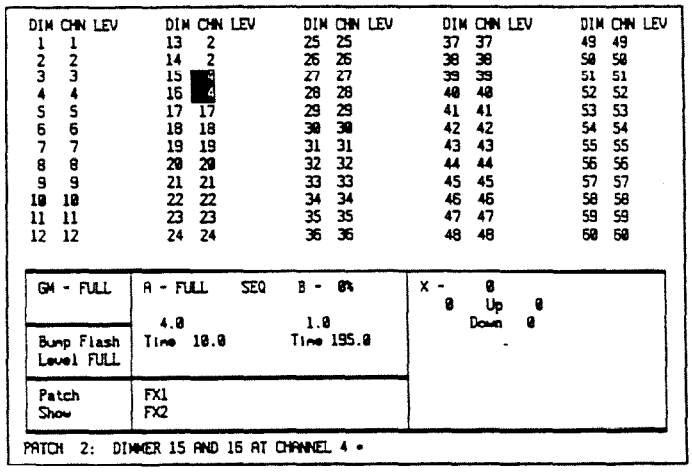
to assign dimmers 13 and 14 to channel 2.



Press

1 5 AND 1 6 @ 4 *

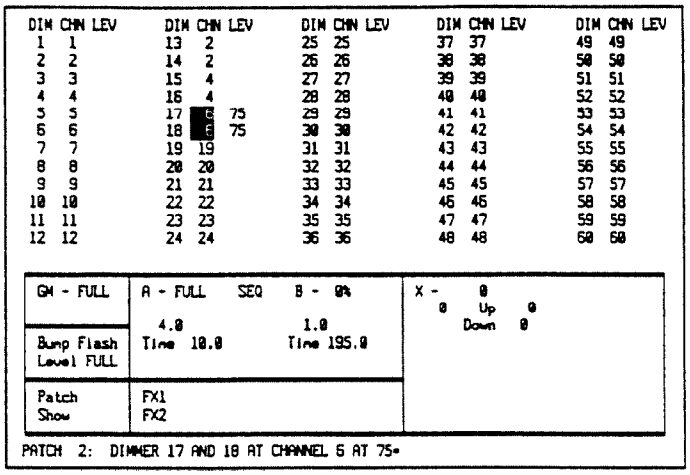
to assign dimmers 15 and 16 to channel 4.



Press

1 7 AND 1 8
@ 6 @ 7 5

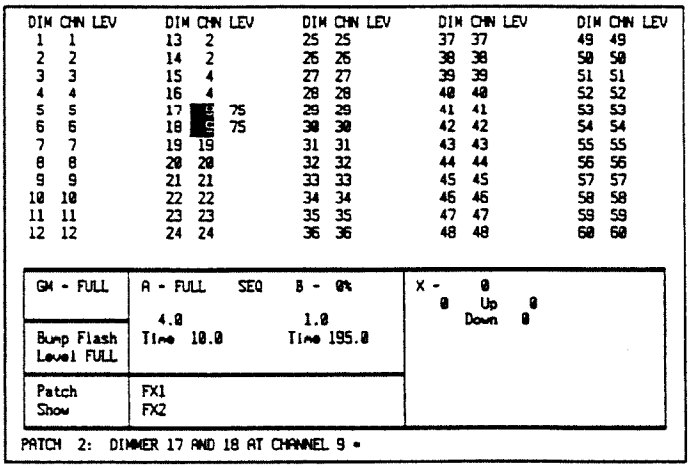
to assign dimmers 17 and 18 to channel 6 with a maximum level of 75%.



Press

1 7 AND 1 8
@ 9 *

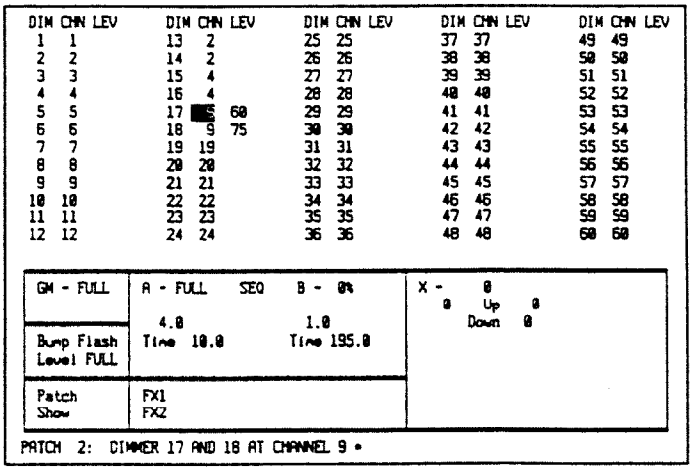
to reassign dimmers 17 and 18 to channel 9 with no change in their maximum level.



Press

1 7 @ @ 6 0 *

to reset the maximum level for dimmer 17 to 60%.



Proportional levels can be cleared by setting the level to FULL.

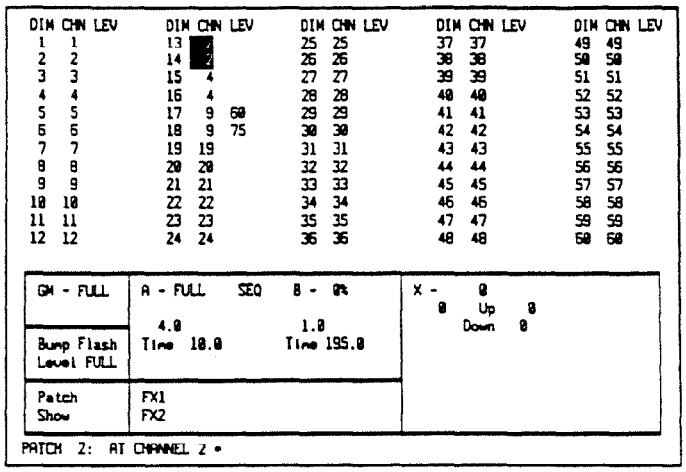
Flag Channels

Channel flagging lets you flag all dimmers on a specified channel.

Press

@ 2 *

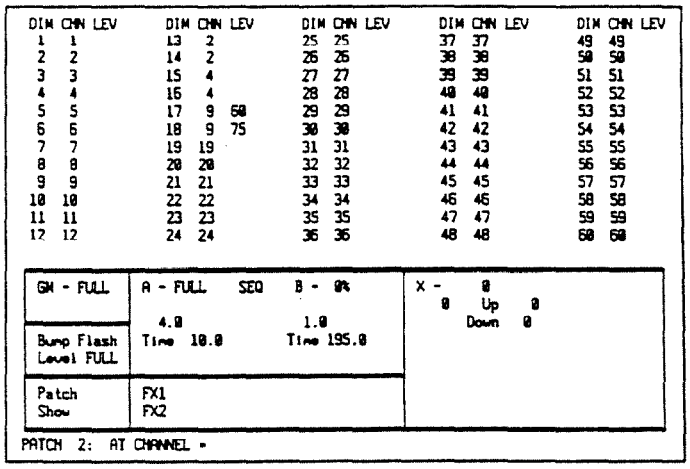
to flag all dimmers assigned to channel 2.



Press

CLEAR

to clear dimmer flags.



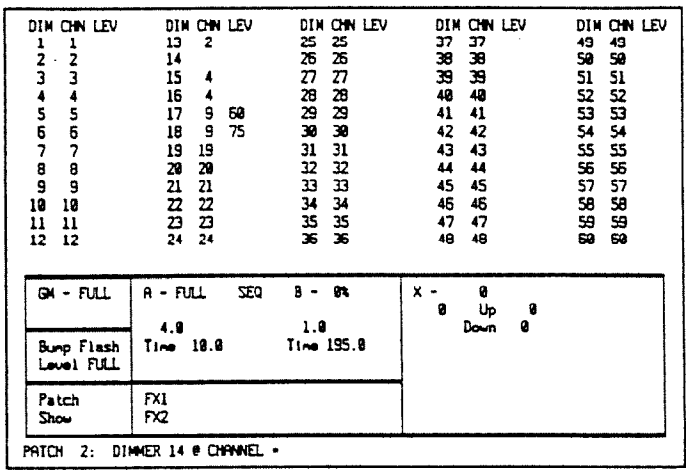
Unpatch Dimmers

You can unpatch a dimmer completely by assigning it a null channel.

Press

1 4 @ *

to unpatch a dimmer.



Clear All Dimmer Assignments

To clear all dimmer assignments, press 1 THR [#] @ * where "#" is the highest dimmer number in system).

Reset the Patch Table

Patch Tables can be set to a one dimmer to one channel correspondence only by doing a "Clear Patch" in the Setup Menu, by re-entering the dimmer/channel data individually, or by loading a new disk.

Check Dimmers

The dimmer check lets you check individual dimmers without bringing up other dimmers patched to the same channel. Dimmers may be brought up at any required level, and are live on stage. A sequential scan of dimmers may be made by bringing up a single dimmer to an assigned level, and then using NEXT +1 and LAST -1 to sequence through the dimmers.

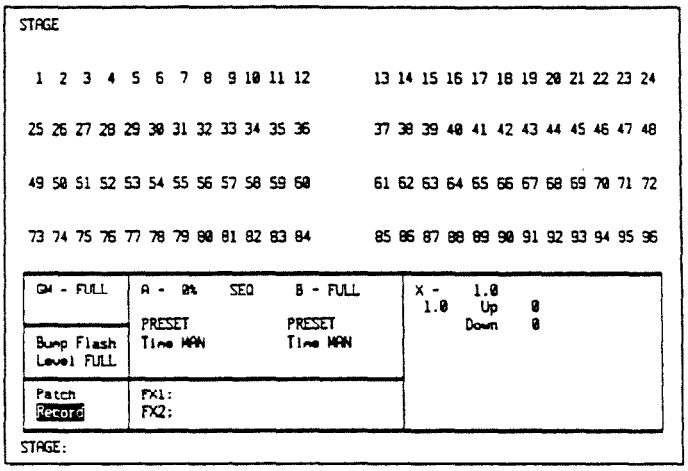
Press

STAGE

to return to the *Stage* display.

Make sure that

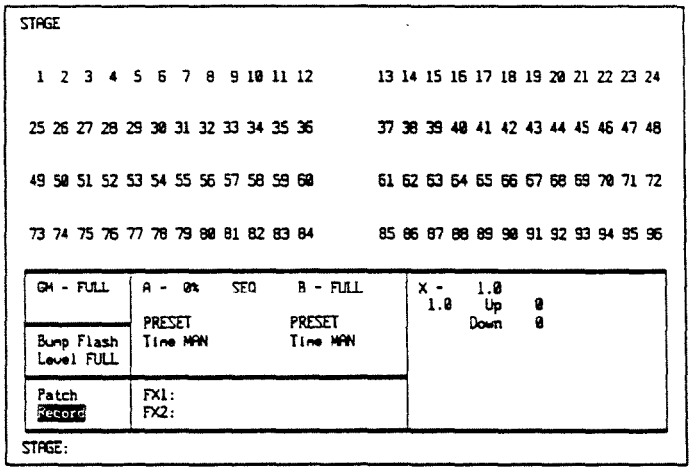
all lights are OFF on stage.



Press

DIM 1 @ FULL

to bring dimmer 1 on stage at FULL.



Since there is no dimmer display, nothing shows on the Stage display. The dimmer is disconnected temporarily from its channel and brought up on stage only.

Press LAST -1 or NEXT +1 to move to other dimmers in sequence.

Press DIM [#] @ [level] ★ to move to a dimmer that is out of sequence.

Press DIM or select any other function button or display to exit from dimmer check mode.

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