JANDS

ECHELON®

Wholehog II® Operating System

Handbook

Version 2.30

Featuring the

Mini Effects Engine

EMC COMPLIANCE

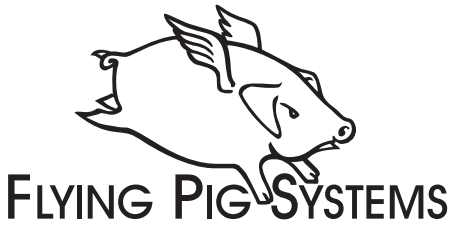
This product is approved for use in Europe and Australia/New Zealand and conforms to the following standards:

European Norms	Australian / New Zealand Standards
EN 55103-1	AS/NZS 4251.1
EN 55103-2	AS/NZS 4252.1
EN 60950	AS/NZS 3260

To ensure continued compliance with EMC Directive 89/336 and the Australian Radiocommunications Act 1992, use only high quality data cables with continuous shield, and connectors with conductive backshells. Examples of such cables are:

DMX, MIDI, Keyboard cables: Belden 8102 100% Aluminium foil screen, 65% Copper braid.

Video, Printer: Amtron FR2651 Flat round cable, woven shield.



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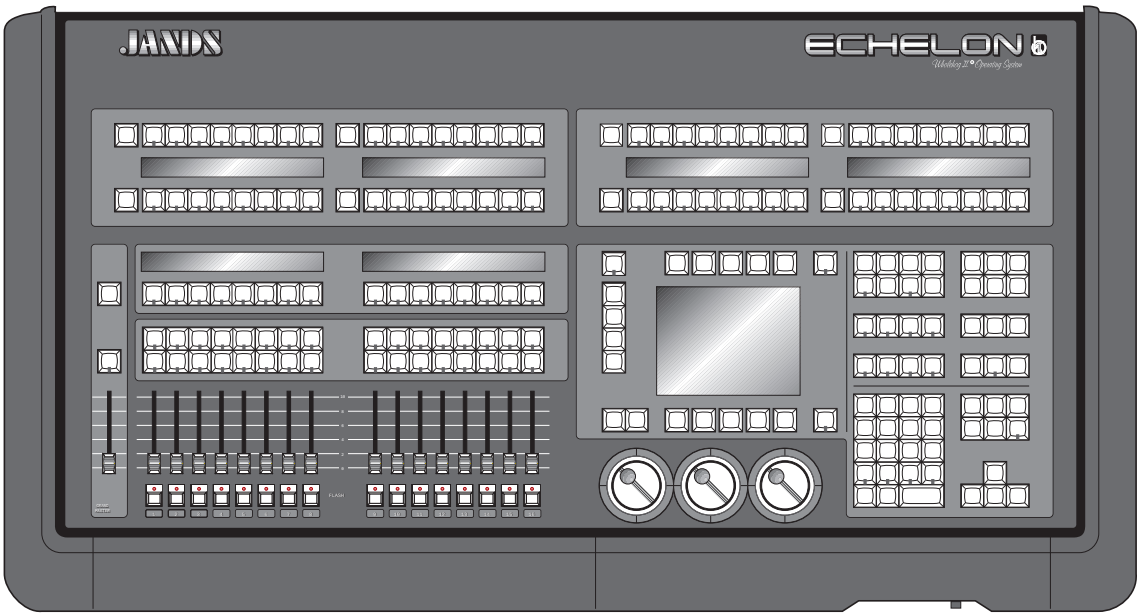

Introduction

The ECHELON has emerged through a collaborative effort between Jands Electronics and Flying Pig Systems, resulting in a console that combines the strengths of both companies: flexibility, power, and ease of use, without overwhelming your budget.

The ECHELON 1K consoles offer a range of powerful features. This console features the unique operating syntax of the WHOLEHOG II: logical, quick programming and playback, without confusing function names. Just like the WHOLEHOG II and the Jandshog, the ECHELON handles any combination of fixtures, moving or static, with moving lights as simple to program as conventional fixtures.

The configuration of the desk makes programming a snap, with preset groups and focuses at your fingertips in a series of menu banks. Liquid Crystal Displays provide continuous feedback on programming and playback status. The flexibility and functional range of the ECHELON make it ideal for handling the entire spectrum of lighting design, from complex theatrical shows, to unstructured television or touring events.

Operational Overview

For WHOLEHOG II Users

The ECHELON is a quick jump from the WHOLEHOG II, with almost all of the syntax and programming the same as on the HOG II. There are a few hardware design differences, but in a short time, the ECHELON should feel natural. The ECHELON and the WHOLEHOG II are so similar, in fact, that shows programmed on the WHOLEHOG II are fully transferable to the ECHELON, and vice versa.

For Theatre Console Users

The ECHELON has been designed to be similar to a traditional theatrical memory console. In particular, cues are programmed in much the same way as on a theatre console. The keypad gives access to dimmer levels, fade times, and cue numbers. Plus, the editing keys and programming operations are similar. The playback uses cuelists and multiple part cues, and timing can be split into in and out times.

However, in some respects the ECHELON is different:

- An individual fixture is viewed as a fixture and not as a collection of separate parameters.
- Fixtures have meaningful parameter names and level settings, for instance “blue” instead of 53%.
- Parameters automatically respond appropriately to programming: for instance, the console will automatically snap change a colour wheel while crossfading a dimmer—there is no need to set up two fade times.

- There are three parameter Palettes for creating looks quickly.
- Most parameters use Latest Takes Precedence (LTP), but Intensity channels can playback in both Highest Takes Precedence (HTP) and LTP on different Masters at the same time.
- Multiple cuelists can be executed simultaneously. This means that there can be more than one "Cue 1," for instance.
- Two types of blocking cues. The first uses the *State* function and only blocks fixtures found in that cuelist. The second uses the *Everything* function and blocks all fixtures on the console.
- The console always operates in what is often referred to as *Live* mode on a theatre console.

For Television Users

The ECHELON's versatility makes it ideal for television applications, where flexibility in unstructured situations is paramount. Up to sixteen independent cue lists can be run simultaneously on their own Masters, each one with its own active cues and timings. For example, when working on sets, this allows each set to have its own cue list. Cue lists can be quickly copied from memory onto a fader, or sixteen can be replaced—with crossfading—in one button press by changing the page. This makes it easy to access and reorder programming to cope with running order changes.

Powerful programming functions allow programming changes to be executed quickly; fixtures can be automatically updated in their cues and presets, and snapshots can be taken to combine the output of several cue lists. Additionally, cues and cue lists can be imported from old shows and incorporated into the current show.

For Touring Dimmer Console Users

The ECHELON is a step up from the traditional touring console, but you'll soon find that accessing fixtures on the ECHELON is as quick as reaching for a fader. The differences are the same as those for theatrical consoles, but also include the following:

- There are no preset faders for direct access. Instead, use the keypad to select a fixture, and the Palettes or parameter wheels to grab the position, beam or colour parameter you want.
- You set fade times as you program cues. Each parameter in a cue can have its own fade time.
- The Wait time comes before the cue, and the Delay time (can be different for different parameters) comes before a parameter crossfades.
- Masters control a full cuelist rather than an individual scene or simple chase.

Using the Handbook

Where to Start

There are a few different ways to approach this Handbook when learning to use the ECHELON. If you're a seasoned board operator—or just impatient—jump right to the *Quick Start* section (after reading this chapter) to create looks right away. You can then use the *Index* to quickly find the information you need. There's also a *Frequently Asked Questions* chapter to assist you with responses to the most common questions/problems and an *Extended Key Chart* which summarises certain function buttons.

For a thorough overview, begin with the *Getting Started* chapter, which shows how to prepare the console for programming. Continue with the following chapters which explain the basics of programming and playback.

Terminology

The following terms are used on the ECHELON:

Cue Tells one or more fixtures to change settings for intensity, beam, colour, and/or focus using their delay and fade times. Theatre designers will recognise this term, Jands ESP2 users know this as a "scene," Event users will know this as a "memory", while others may refer to this as a "look."

Cuelist Cues grouped in a specific order to run one after another, or even simultaneously. These may or may not be linked. Jands Event users refer to this as a "stack." A chase is one type of cuelist.

Page A group of cuelists residing on the faders. Pages can be changed, allowing the sixteen faders to be used for many cue lists. The number of faders can be expanded by using a DMX console plugged into the DMX Input.

Parameter An attribute of a fixture. A PAR can has one attribute: intensity. Moving lights also have pan and tilt and usually several others such as colours and gobos.

ICBF ICBF stands for **I**ntensity, **C**olour, **B**eam, **F**ocus, and is an easy way to keep track of the parameters for an fixture or a group of fixtures.

- **Intensity** also known as level, or percentage.
- **Colour** the colour wheel, the gel string, and colour mixing.
- **Beam** the pattern and quality of the light; this includes such specifics as gobo, gobo rotation, sharp or soft edge, iris and diffusion. An *open* beam is full iris, no pattern, no diffusion, and sharp edges.
- **Focus** also referred to as position. Indicates the *placement of the beam on stage*, as opposed to sharp or soft optical focus.

Palette A stored parameter setting—such as a colour—for one or more fixtures. Fixtures of different types can share a palette. Changing a palette changes all the cues using that palette. A palette is also known as a preset.

Timing The timing elements used by the ECHELON are:

- **Fade Time** The time, in seconds or minutes, for a cue to execute a crossfade.
- **In Time** The fade time for fixtures which are fading intensity *up*.
- **Out Time** The fade time for fixtures which are fading intensity *down*.
  In time = out time, unless otherwise specified.
- **Delay** The time that the console waits before starting a cue's crossfade.
- **Wait** The time a cue will wait to execute after **GO** is pressed.

Path The type of crossfade used by a cue or fixture. Path is sometimes known as a dimmer curve or a profile.

Toolbar The 10 buttons (5) above and (5) below the main LCD. The function of these buttons changes with the display, and their function at any time is displayed at the top or bottom of the main LCD panel.

Symbols and Text conventions used in this Handbook

Different fonts are used in this handbook to indicate different actions:

This text for buttons to press on the console.

`This text` for buttons or text appearing on the LCD.

Particularly important information will be shown on a black background with a Stop sign in the margin.

Useful ECHELON tips will be boxed with a pointing finger in the margin.

Several of the buttons on the ECHELON have symbols rather than words:

The Flying Pig is a shift key, used in conjunction with other buttons; we'll refer to it as **PIG**. It's used like the apple symbol on a Macintosh®; it must be held down while pressing another button.

The @ key means "at" and is used for patching and setting levels on the keypad.

Safety Information

Please keep in mind the following safety instructions:

- ***Do not use the ECHELON if the power cord is damaged or not properly connected to an Earthed socket.***
- ***Protect the system from extremes in temperature and wet weather. Operating temperature range for the console is 0 to 40° Celsius (32 to 104 F).***
- ***Keep drinks away from the console. More than one console has been destroyed by having a drink knocked into it.***
- ***Always handle the system with care and use a flight case when moving. Certain components are sensitive to shock and a drop could break them.***
- ***Only people with electrical expertise should open the front panel. There are exposed power items inside which can shock.***
- ***Repairs should only be undertaken by an authorised service representative. The warranty is void otherwise.***

As long as these instructions are followed, and the system is treated with care, the ECHELON should last for many years.

Problem Solving

If you're having trouble with the ECHELON, there are several places to look for answers. If you have a specific question regarding a function or a feature of the ECHELON, use the *Table of Contents* or the *Index* to find information on it. If you're not sure where to look, or the console just seems to be acting strangely, look through the *Frequently Asked Questions* section for a problem which matches your own.

Crashes

As with any software product, crashes do happen on occasion, so while we do everything possible to make sure that they happen rarely, we can't guarantee that they won't happen at all. Please help us eliminate any problems by reporting them back to us.

There are two types of crashes: fatal errors and program faults.

- When a fatal error occurs, the LCD will say **`I'm sorry I've croaked`**. Please write down the entire message and what you were doing at the time, such as: "1. Trying to edit a cue list. 2. The cue list was on a template page."
- If you get a program fault, a stream of information will appear on the display screen. The top line will start with **`Fault at`** and the second line will say **`Trace`** with several numbers following. Please write down all of the numbers on the **`Trace`** line and send them to us along with a description of what you were doing just prior to the crash.

If you've had a crash, reset the console by turning off the power and turning it back on while holding down the Enter key on the keypad. Press 1 to perform a **`Clean Start`**. Because your show may have been corrupted by the crash, you'll need to load your most recent backup from disk. This is why it's important to back up to disk *frequently*.

If you have time, try to reproduce the problem by repeating your actions. If you can send us a description of how to repeat the problem reliably, then we are much more likely to be able to solve it rapidly.

Bugs

A bug makes the console behave strangely but does not crash. For example, you might find that a function button does not work properly in certain circumstances, but works fine otherwise. This is a bug. If you find bugs in the software, please let us know; the only way we can fix them is if our users tell us about them.

Reporting Crashes and Bugs

The more information you can give us about the problem, the faster we can sort it out. Please use the following format to report bugs:

Reported By:	Your name.
Your reference:	If you report more than one, please number them.
Model:	ECHELON
Software version:	You can find the number in the Control Panel title bar, or on the start up screen.
Date:	
Is the Bug repeatable:	Can you reliably reproduce the problem?
Description:	The steps from reset needed to reliably reproduce the problem, or failing that, what you were doing to make the problem happen.

Please fax the bugs reports to +44 181 579 8469 or preferably e-mail them to *support@flyingpig.com*.

Software Updates

Over time the ECHELON software will be updated with new features and enhancements. The software will be available from your dealer or over the Internet. In addition, revised fixture libraries will be released as we generate personalities for new fixtures. To ensure that you can take advantage of updates, please complete and return to Jands Electronics the registration card that was shipped with your ECHELON. If you include your e-mail address, we'll notify you when new versions are released.

The URL for Jands is *http://www.jands.com.au.* Once you've reached the Jands home page, download new software by choosing the ECHELON page, and selecting Download New Software.

Getting Additional Help

If you have questions or need help, contact your local dealer. They're trained to give you the support you need.

If for some reason you aren't getting the answers you need, or if you have comments or suggestions related to the ECHELON, call Jands at +61 2 9582 0909. Someone is always available to field questions from 9:00 AM to 5:00PM (local time) Monday through Friday. Problems can also be e-mailed to Jands at *jandsinfo@jands.com.au*.

You can also e-mail Flying Pig directly at *support@flyingpig.com*.

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Quick Start

This chapter gives a quick overview of how the ECHELON operates. Here you'll find what's minimally required to setup the console, program a cue, and play it back. This chapter is deliberately brief; for a complete explanation of how the console works, start with the next chapter.

Set Up the Console

1. Connect the keyboard and/or monitor to the appropriately marked ports on the back panel. DMX leads should be plugged into the ports.
2. Plug in the power lead and turn the power switch on.
3. Insert a Library Disk into the floppy drive.
4. Press **`Load Show`** once the startup screen appears.
5. If a keyboard is being used, set it up for use by pressing the **setup** button, then **`Panel`** on the toolbar, and finally, highlight **`External keyboard`**.
6. Press **`Okay`** to leave window.

Select the Fixtures for Use

1. Open the Patch window by pressing the **setup** button, then **`Patch`** on the top toolbar.
2. Press **`Add Fix`** to see the list of available fixture types.
3. Select a fixture, such as Desk Channels, by using the lower RHS cursor keys to move around the window.
4. Press **set** to change the number of fixtures to be used from 0. Use the keypad to type the new quantity (such as 24) into the edit box which appears.
5. Press **ENTER**.
6. Repeat steps 3 – 5 for each fixture type to be used.
7. Press **`Okay`**.

Patch the Fixtures

1. Press **`Add Fix`** in the upper left of the screen.
2. Select the fixture type you'd like to patch (e.g., Desk Channel..) by using the cursor keys and pressing **ENTER**.
3. Select a destination for the desk channels; typing **1 Thru 24 @ 1 ENTER** patches the 24 desk channels consecutively from channels 1 through 24 on DMX output 1.
4. Repeat for each fixture to be used.
5. Press **`Okay`**.

Establish Auto Menus

The Auto Menu function sets up standard palettes for the fixtures you've chosen.

1. Press **`Auto Menus`** on the patch toolbar and the ECHELON will generate them automatically.
2. Press **`Okay`** twice to return to the programming toolbar.

Palettes have now been created on the menu banks. The LCD screen adjacent to the palette button displays the corresponding palette label. If a palette button contains palette information that has no effect on currently selected fixtures, the LCD will show four dots. Empty palette buttons will be indicated by a single

dash. Palettes that are currently being used in the programmer are indicated by a red led in the palette button.

Program a Cue

Select Fixtures

Press a group button from the group menu bank or select individual fixtures by typing them in on the keypad. (For the purposes of this example, using a moving light.)

Set Intensity

To get light output from the group you've selected, press **@ Full**. This brings them up to 100% intensity.

If you don't want your fixtures at full, enter a different percentage on the keypad instead: press **@ 65 ENTER** to program 65% intensity. When choosing a level other than full, you must press **ENTER** after your selection.

Set Focus

Now, aim the fixtures.

1. Type **1 ENTER** to select the first fixture in your group. (You can also press **Next** to select the first fixture).
2. Adjust focus position—pan and tilt—by moving the centre and right parameter wheels.
3. To select the second fixture, press **Next**.
4. Continue until all fixtures have been aimed.

Colour

1. Re-select the entire group of fixtures, so that the colour selection applies to them all. Pressing **All** is a quick way to do this.
2. Select a colour palette from the Colour Menu Bank. Alternatively, press **Colour** and select a colour with the parameter wheel.

Beam

Beam parameters are changed in the same manner as colour parameters.

Record the Cue

Once a look has been created in the programmer it's easy to record it as a cue. To record cue 1 on the first Playback Master:

1. Press **Record**.
2. Press the **choose** button above Playback Master number 1.

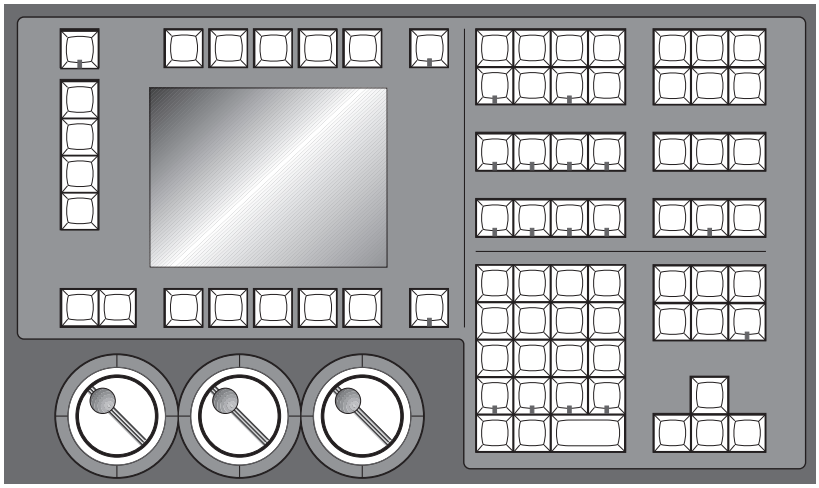
Playback the Cue

Press **clear restore** to empty the programmer. Press the **GO** button above Playback Master 1. The **Halt** button stops playback. To turn off a cue list on fader 1, first press fader 1's **choose** button to select it and then press **Release**.

Finding Your Way Around

This chapter gives an overview of the console's three main sections—the programmer, the playback masters, and the displays—and the external items which connect to the console.

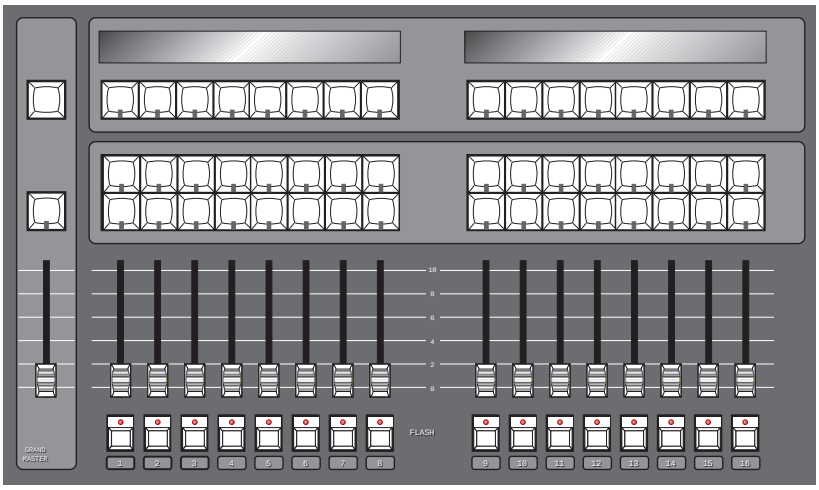
Programmer



The programmer section of the ECHELON selects fixtures and parameters to create looks on stage. The programmer contains a numeric keypad and a standard set of buttons including **thru**, **full**, @, etc., which are useful for programming fixtures and cues. Grouped nearby are the most frequently used programming functions, such as **Copy**, **Delete**, **Undo**, etc. In addition, the programmer contains four buttons not found on other consoles—**Group**, **Position**, **Colour**, and **Beam**. These buttons allow presets to be chosen quickly from the keypad and are an easy way to create a cue.

Below the display screen are three Parameter Wheels, which offer another choice when programming. All parameters can alternatively be set using the wheels to roll through until you find a colour, position, etc, that you like.

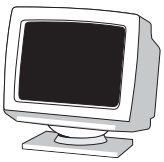
Playback Masters



There are sixteen playback masters on the ECHELON, each of which can independently play back its own cue list. All masters can run simultaneously with various custom settings. Actions such as add/swap, and button response can be individually set on each fader.

The Playback Masters can be recycled through the use of Pages, with each new page bringing up a clean group of sixteen faders to accept new cues and cue lists.

Displays



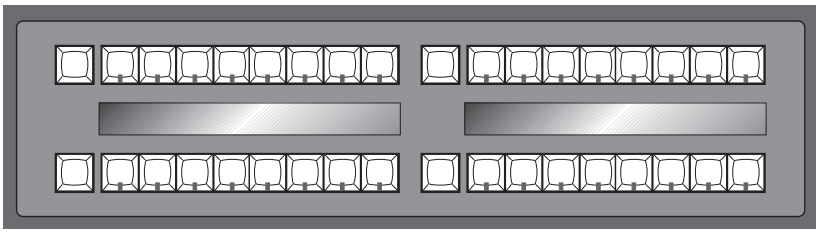
The ECHELON has a central Liquid Crystal Display, located to the left of the keypad, which displays programming activity, menus for functions not found directly on the console, and windows to view cue lists or palette lists

Near the bottom of the main LCD is the Command Line. This will tell you what fixtures are currently selected for programming, and what palettes have been assigned to them thus far. To *deselect* an item that's up on the Command Line, simply backspace over it with the backspace arrow on the keypad.

Along the top and bottom of the main LCD are Toolbars; functions relevant to the current application will appear here, and are accessed by pressing the buttons directly above or below them.

There is also the option for one external display (a standard PC VGA monitor may be used) which connects to a port at the rear of the console and shows more information.

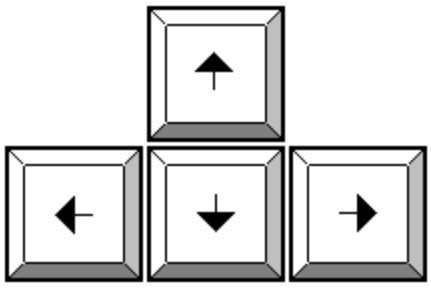
Menu Banks



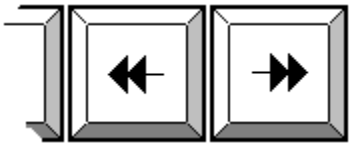
The ECHELON has four Menu Banks for access to all presets and palettes, providing fast and efficient programming. Each Menu Bank has sixteen preset buttons that can be programmed with specific Groups, Colours, Positions and Beams. Buttons that have been assigned palettes will indicate this with a red LED. Those buttons with the LED off are empty. To the left of each bank is a page selection window with **+** and **-** buttons to cycle through all 10 pages; a clean set of sixteen more presets is available with each new page. To access each preset, simply press its button. A list of the presets can be called up for naming by pressing **PIG** and **Position**, **Colour**, **Beam** or **Group** as appropriate.

Navigation

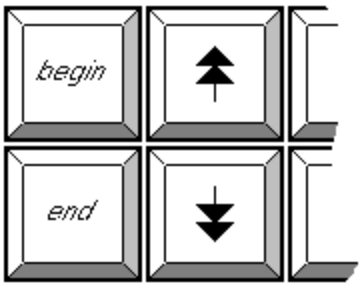
Navigation through the ECHELON's displays is achieved primarily through use of the Cursor Keys, located beside the Keypad.



To move through a display window without altering the selection at the same time, use the Paging Arrow keys above the cursor keys. They will move the display one screen at a time, like Page Up and Page Down on a PC. The **Begin** and **End** buttons will select the first and last parameter respectively.



Page Left and Right Buttons



Page Up and Down, Begin and End Page buttons

Getting Started

This chapter covers everything you need to know to get the console ready for programming. In general, it only takes four steps:

1. Connect together the accessories, cables, and console.
2. Select the fixture types to use.
3. Patch them.
4. Program them.

Connecting the Cables

First, connect the keyboard or monitor to the appropriately marked connectors on the back panel. DMX leads should be plugged into the ports.

1. Connect the DMX data leads into the ports marked **DMX-512 1** and **DMX-512 2** on the rear of the desk.
2. If using an external monitor, connect it into the port marked with the VDU icon on the rear of the desk.
3. If using an external keyboard, connect it into port marked with the keyboard icon. After powering the console, it must be set up for use with a keyboard by pressing the **setup** button, then **Panel** on the toolbar, and finally highlighting **External keyboard**.
4. If using a mouse or trackball, connect it to the port marked with the mouse icon.

Power on

Plug in the power lead, making sure the lead is properly earthed and shares the same earth as the fixtures.

As with any DMX system, the console and the fixtures must share the same ground (i.e., be run off the same power), otherwise signal corruption can occur. If this is not possible, then the console should be used with an optically isolated DMX buffer box.

Now turn the power switch on. If there's a show resident in memory, the console will be ready for use. The start up screen will say **Show Loaded**. Press **Okay**. Press **setup** and **Shows** to load another show from disk.

If there is no show in memory, the start up screen will say **No show in memory**, and there will be a **Load Show** button. Insert a show disk in the floppy drive and press **Load Show**. Since there is no fixture library information stored on the console, you must have a library disk to start a new show.

Always keep a library disk (or a blank show disk) with your console. A library disk is required to start programming a show from scratch.

Setting Contrast and Brightness

If the LCD's don't appear as easy to read as they should be, try adjusting either the contrast or brightness:

1. Hold down the **setup** key.
2. Rotate the right parameter wheel to adjust the menu and playback contrast, and the centre wheel to adjust the main display contrast.

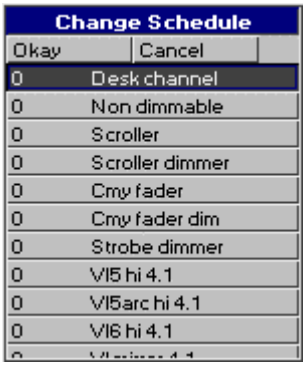
Fixture Selection and Patching

To select and patch the fixtures for a show, press the **setup** button and then **Patch** on the top toolbar.

Adding Fixtures to the Schedule

Once you've opened the Patch window, first tell the console how many fixtures of each type you'll be using:

1. Press **Add Fix** to see a list of the fixture types available. This opens the Change Schedule window.
2. Select a fixture type using the cursor keys to move around the window.



3. Press **set** to change the number of fixtures to be used from 0. Use the keypad to type in the new quantity in the edit box which appears over the current quantity of that fixture.
4. Press **ENTER**.
5. Repeat steps 2 to 4 for each fixture type to be used.
6. Press **Okay** to return to the Patch window.

The fixtures listed in the schedule are all contained in the *Fixture Library*, which has personalities for most major multi-parameter fixtures. If you aren't able to find the fixture type, look in the uncommon directory to see if the fixture you are looking for is no longer considered current, otherwise you will need to , either contact your dealer to receive a personality, or see *Appendix B* to set it up yourself.

The examples in this Handbook use the following fixture schedule. You may want to set up your own console this way and follow along.

24 Desk Channels for conventional fixtures
6 Vari*Lite® VL5™ (Vl5 m3)
6 Cyberlight® (Cyber m2 litho)
6 Roboscan™ CMYR (Robo 1220 cmyr m)
6 Superzoom™ x (SuperScan Zoom. The x is for extended protocol.)

Patching Fixtures

Now that you've chosen the fixtures to use, you can patch them.

In general patching fixtures is a three stage process:

1. Change to the correct type of fixture by pressing **Add Fix**, select the appropriate fixture type (e.g. Desk Channel,..) with the cursor keys. Press **ENTER**.
2. Type **1 Thru 24** to select the 24 desk channels.
3. Type **@ 1 ENTER** to patch the 24 desk channels consecutively from channels 1 through 24 on DMX output 1.
4. Repeat for each fixture type.

While the Patch window is open the **@** key means "patch at address," rather than the normal "set at intensity."

Patching multiple times

Fixtures can also be patched to multiple locations. For example, typing **11 @ 200 ENTER** will patch desk channel 11 to DMX channel 200 of the current output, in addition to its first patch location. Or, **2 @ 301 @ 302 @ 303 ENTER** will patch desk channel 2 to addresses 301 to 303.

Patching to a different output

Any fixture can be patched anywhere on either of the two outputs. Every time you use the **@** key, it will patch onto the *current output*, indicated by the highlighted **1 DMX Output** or **2 DMX Output**. To select the other output, press the **Output>** button and continue patching.

Patching Split Fixtures like VL5s

Let's proceed by patching the VL5's onto the next DMX output. Press **Output>** to activate output 2.

VL5s differ from most other fixtures in that they must be patched twice: once for intensity and once for the other parameters. Press **Fixt Part...** to toggle between the two. The command line on the display will display either **Patch VL5 m3 Intensity...:** or **Patch VL5 m3 Pan...:**

To patch the VL5s:

1. Press **Add Fix**, and then select **VL5 m3** using the cursor keys and **ENTER**
2. Type **1 thru 6 @ 1 ENTER** on the keypad. This patches the VL5 intensities to channels 1 through 6.
3. Press **Fixt Part** to select the other parameters for patching.
4. Type **1 thru 6 @ 7 ENTER** on the keypad to patch the rest of the parameters.

Different Patch Views

The patch window now shows where the VL5s are patched. To see the patch in more detail, press the **View** button on the patch tool bar. This displays a choice of views allowing some or all of the parameters, not just the first one for each fixture. Move up and down the patch list by using the up and down arrow buttons and press **ENTER** to select.

It's also possible to view the patch display on the external monitor. Press **setup** followed by the bottom toolbar **Patch** (or **setup** and **5**) to do so. Move up and down the external display using the cursor keys.

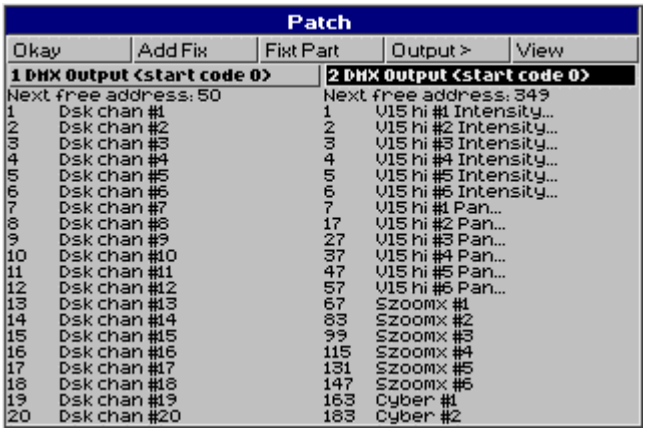
Now patch the rest of the fixtures on output 2:

Patch the Superzoom x's @67.

Patch the Cyber m2 litho's @ 163.

Patch the Robo1220 cmyr m's @ 283.

When you're done, the patch list window will look similar to the one shown on the next page.



Clearing Fixtures from the Patch

To eliminate fixtures from the patch:

1. Select the fixtures - just as if you were going to patch them, but do not press the **ENTER** button.
2. Select the output you want to clear them from.
3. Press **Unpatch** On the bottom toolbar. This will remove the chosen fixtures from the selected output.

To clear an entire output, select the desired output to clear, press **Unpatch** while no fixtures are selected (i.e., after you've pressed the programmer **clear restore** button). The console will ask for verification. Press **Okay** to finish.

Note: Unpatched parameters will not be executed by masters, including the programmer. Thus a cue with entirely unpatched fixtures will have no effect on the state of a master's LEDs (i.e. they will not turn on). In addition, unpatched parameters will be shown on the Output window at their default values.

Auto Menus

It's a good idea to use the Auto Menu function to set up standard palettes for the fixtures to be used. While these palettes may not cover all your needs, they'll give you a good base to start with. While in the patch screen press the **Auto Menus** toolbar and the ECHELON will generate them automatically. Press **Okay** when finished to return to the Patch Window.

It's best to do this only once, after you have set up your schedule with all the fixtures you are likely to use.

Fixture Alignment

Occasionally it's necessary to hang a moving light upside down or sideways. To have all of the fixtures moving in the same direction regardless of how they're hung, use the fixture alignment features on the bottom toolbar.

To change an alignment:

1. Make sure that the fixture type that you wish to modify is set as the current fixture type.
2. Select the fixtures to modify by entering the fixture number(s). (e.g. **1 thru 5 - 2 - 4** will select fixtures 1 through 5 inclusive except 2 and 4).
3. Select *any or all* of the toolbar functions - **Pan Inv**, **Tilt Inv**, and **Swap Axes**. To remove a function, hit the button in the toolbar again. Changes can be best seen by changing the patch view to Fixtures (press **View** on the top toolbar and select **Fixtures**).
4. Press **Okay** when you're done.

Pan and **Tilt Inv**(ert) make the pan and tilt parameters respond in a reverse manner to normal, and should be used for fixtures hung in reverse orientation to the others. **Swap Axes** swaps the pan and tilt parameters for sideways-hung fixtures.

Saving and Loading Shows

To avoid any potential loss of programming, save your show periodically while programming and at the completion of every programming session. Shows should be saved on 3.5 inch 1.4 MB HD floppy disks, formatted for IBM, just like those used with a PC. Disks can be formatted in the **Setup-Shows** window.

IMPORTANT: Always back up your shows to floppy disk. Do so frequently while programming and always after completing a programming session. Also, we recommend having several sets of backup disks and alternately saving to each one.

Note: Do not save to a disk that contains files you wish to keep, as the saving process deletes the contents of the disk prior to saving the show.

Saving shows

To save to floppy disk:

1. Press **setup** on the desk.
2. Insert a disk into the drive. If it hasn't been formatted yet, the console will do so automatically.
3. Press **Save Show**.
4. Press **Okay**.
5. When save process is finished, press **Okay**.

Loading Shows

When you start up the console, the last show in use will be in memory. If you'd like to work on a different show, it must be loaded from floppy disk:

1. Insert the floppy disk with the show you wish to load.
2. Press **setup** on the desk.
3. Press **Shows.**
4. Press **Load Show.**
5. Press **Okay** to lose current show in memory and load new show.
6. When load process is finished, press **Okay** twice.

Battery-Backed RAM

The RAM in the console is battery-backed, so that if you lose power accidentally, your programming will normally be preserved. However, it is recommended that you always save your show to disk.

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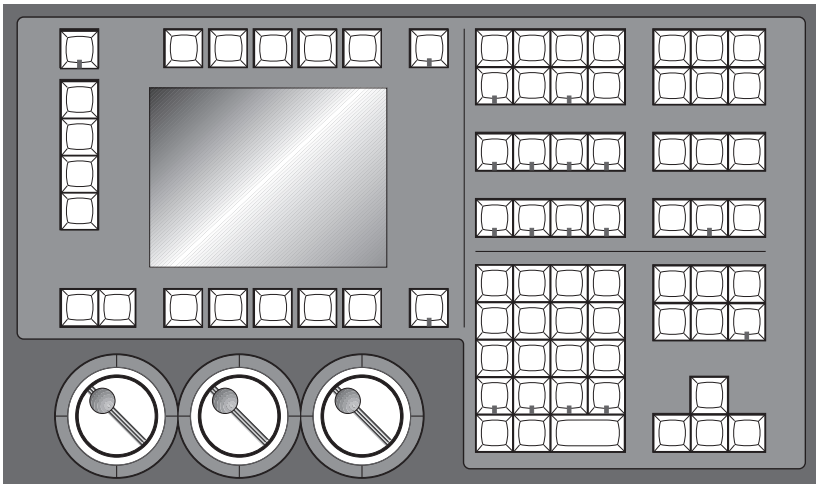
Programming

This chapter covers the basics of programming. Once you've read it, you should be able to create and record cues. This chapter assumes that you have patched the console as covered in the previous chapter.

Programmer Overview



The Programmer is where cues are created and manipulated. Here, fixtures are selected, levels are set, and commands are executed. Programming is a three step process:

1. ***Select*** the fixtures or group(s) to program.
2. ***Adjust*** the parameter settings in one of 3 ways:
   - **Wheels**
   - **Keypad**
   - **Palettes**
3. ***Record*** the cue using **Record** or **Update**.

It's important to note that the programmer has priority over everything else on the board (with the exception of the Grand Master and the Dead Black Out button). This makes it easy to see what's happening as cues are created, plus it makes it possible to quickly grab a fixture during a show and over-ride the playback masters.

Selecting Fixtures

The first step in programming is always to select fixtures.

For example, to select all Desk Channels:

1. Find the Group palette button labelled **`All desk chan`** and press it. The LED will light to indicate that it's selected. You can see what each button contains by pressing **Pig** and **Group**. This group was created when the **`Auto Menus`** function was used during set up.

All desk channels are now selected.

Alternatively:

1. Type **Group 1 ENTER** on the keypad.

Or you can select fixtures individually:

1. Type in the numbers you want, e.g. **1 thru 24**, or **1 thru 5 + 9 - 3**, or **Group 1 - 13**

You'll notice that after you selected the All Desk Channels group that some of the palette button labels in the Focus, Colour and Beam windows changed to a dotted line. This indicates that those palettes have no effect on your current selection

To program VL5's, select them in the **Set Type** window using the cursor keys and **ENTER**. You can avoid opening the Set Type window by specifying the *fixture type* number (determined by the order of the fixtures in Set Type window) followed by a slash and the fixture number. For example, **1 / 5** would select Desk Channel 5 (fixture type 1 **/** fixture number 5.) You can use **thru**, **+** and **-** with this as well. e.g. **1/1 thru 5 -1/3 + 9**. (Note: This will only work if you have 9 fixtures patched of the currently selected fixture. i.e. if you have a bank of Desk Channels in your patch list and also have VL5's currently selected and have 9 of them, start with the programmer clear, and you will finish up with Desk Channels 1,2,4,5 and VL5 9 selected.)

Selecting different types at the same time

You can select different fixture types simultaneously. For example:

1. Press **Set Type**, Select **Desk channel**, type **ENTER, 1**, **ENTER.**
2. Press **Set Type**, Select **Cyberlight**, type **ENTER, 1**, **ENTER.**

This selects Desk Channel 1 and Cyberlight 1 together. You can also press the **All Desk Channels** and **All Cyberlights** group buttons. Once again the **/** button can be used to select different types. Later, we will see that you can record different types into one group and select them with just one button push.

Deselecting fixtures

Use the back arrow key to backspace over unwanted groups or fixtures.

Or you can deselect Groups by

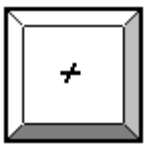
1. Press **PIG** and hold it down.
2. Press the group button to deselect

Finally, you can also press **clear restore**, but this will also erase any other information currently in the programmer.

The Keypad functions

The keypad selects fixtures, groups, palettes, and times.

On the keypad, you'll find the following keys in addition to the numbers:



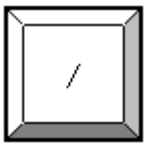
Selects more than one item: **Group 8 + Group 12**.

Selects a series of items: Intellabeams **6 thru 15**.

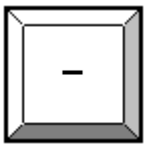
Backspaces through the previous item on the command line, which shows the most recent selection you have made in the programmer. Selections become deleted as you backspace through them. We call this key **Backspace**.

Sets the intensity at 100%. It's not necessary to press **ENTER** after **Full**, it enters automatically.

Sets an intensity level or a patch location: VL5 **6 @ 40**.



Used for split fade times and sometimes fixture and cuelist selection: **Time 5 / 7**.



Subtracts one item from a series: fixture **1 thru 10 - 5**.

Completes an operation.

The four buttons above the keypad—**Group**, **Position**, **Colour**, and **Beam**—are used to select specific groups or palettes (like group number 19).

Adjusting Parameters

Setting Intensity

Select Desk Channels as above, then

- Move the left parameter wheel. The labels above the wheels indicate what the wheels control and their current setting.

  OR:

- Press **Full** to set to 100%.

  OR:

- Press **@65 ENTER**. It is possible to skip the last digit for levels ending in zero. For example, **@ 6 ENTER** sets the fixtures to 60%. For 6%, type **@ 06 ENTER**.

Further selections can then be made and intensities set for other fixtures.

Intensities can also be set using the bottom toolbar functions **`+10%, -10%, Out`**, and **`Rem Dim`**. (**`+10%`** and **`–10%`** are only found on the default toolbar.) **`+10%`** and **`–10%`** adjust the intensity up or down by 10%, **Out** brings the intensity of all selected fixtures to 0%, and **Rem Dim** brings the intensity of all fixtures in the programmer that aren't selected to 0%.

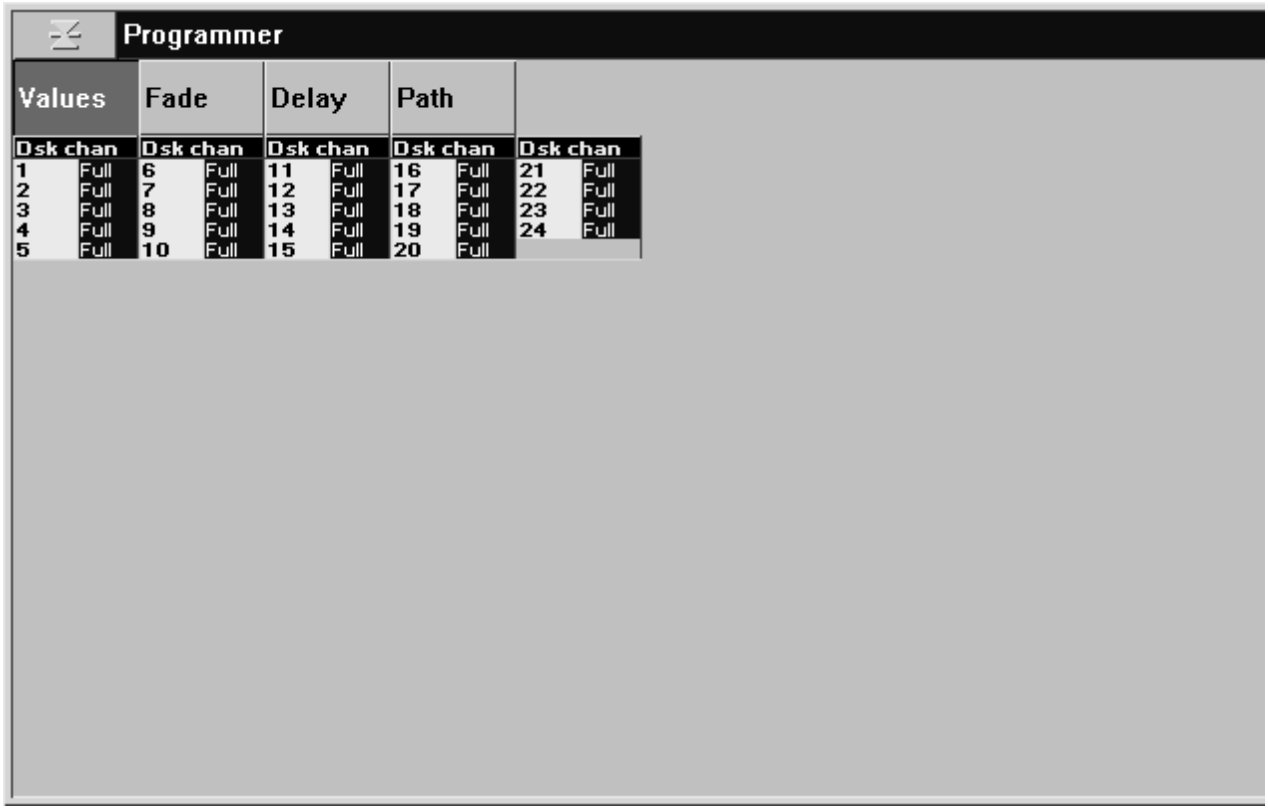
We will see how to change other parameter types later on in this chapter.

Blind

If you don't want the programmer to output its contents, press **Blind**. The **Blind** LED illuminates until the button is pressed again, when the programmer returns to normal.

Programmer Contents Display

The easiest way to keep track of what's actually in the programmer is to use the *Programmer Contents* window. Open it by pressing **setup** followed by **`Progrm`** (or **setup** and **2**):



The Default setting is to show output values. To see fade times, delay times, or crossfade paths press **Pig** and either **2**, **3**, or **4** on the keypad. Alternatively, if you have a mouse or trackball connected, you can point to the setting you wish to view and click on the left mouse/trackball button to select it. Pressing the **monitor** button or clicking on the right mouse/trackball button will toggle between the console and the external screen.

The fixtures and parameters are shown in different colours to indicate their status:

Blue background	Parameters currently selected in the programmer
White background	Parameters of selected fixtures that have not been programmed
Black text	Parameters still active in the programmer, but part of a previously recorded palette or cue.

Selecting the menu buttons at the top of the window shows more information:

Values	Shows the values programmed for each parameter.
Fade	Shows the fade time programmed for each parameter.
Delay	Shows the delay time programmed for each parameter.
Path	Shows the crossfade path programmed for each parameter.

Another display useful while programming is the Output display. It shows the output of the entire console, not just the programmer, and is accessed by pressing **setup** followed by the **`Output`** button on the lower toolbar (or **setup** and **1**).

Recording a Cue

Once a look has been created in the programmer you can record it as a cue. To record cue 1 on the first Playback Master:

1. Press **Record**.
2. Press the **choose** button above Master number 1.

Cue 1 has now been recorded on fader 1. The time for cue 1 will automatically be the default times specified in the Control Panel. Don't worry about setting your own times for now.

When cue 1 was recorded on the fader, a cue list for that cue was automatically created. To see this cuelist, open the cue list window by pressing **Pig** and **choose** above fader 1. Note that this also selects fader 1, as indicated by a lit red LED on the **choose** button. The selected fader becomes the default fader for all cue list actions. To see this display on the external monitor, press **setup** followed by **`Qlist`** (or **setup** and **3**).

Other ways of Recording

- Pressing **Record** followed by **ENTER** appends the cue to the end of the cue list on the selected master.
- Pressing **Record** followed by **choose** appends the cue to the end of the cue list on the chosen master.
- Pressing **Record 1.5** and **ENTER** inserts a cue numbered 1.5 into the cuelist on the selected master.
- Finally, typing **Record 3/1.5 ENTER** inserts cue 1.5 on fader 3.

Cue Numbers

Every cue that's created is given a number and assigned to a cuelist. Numbers can be up to 5 digits to the left of the decimal and 4 digits to the right of the decimal, such as cue 12345.0001. These numbers refer to cues in a specific cuelist, *not the entire console*. So there can be a cue 1 for cuelists 1, 2, and 3, which are completely different and not linked in any way. Nevertheless, it's possible to copy or move cue 1 into any other cuelist.

It's important to remember that cuelists are not attached to a fader forever. Sixteen new cuelists can be loaded on the faders by changing page. Cuelists can also be copied and moved around just like cues. But more on these items later.

Cue Names

Cues can also be given text names by pressing **set** immediately after recording the cue. Enter a name in the Quick Name box and press **ENTER**. If you wish to name a cue that was previously created, press **Pig** and **choose** above the master containing the cue, cursor to the cue that is to be named, press **set** and enter the required name followed by **ENTER**.

Cue Storage

Although the programmer retains all selections made since pressing **clear restore**, only the parameters which have changed since the last record are recorded into cues. In most cases, this has no effect on running the show; during playback the console automatically calculates what a cue should look like based on what comes before it in the cuelist. Nevertheless, it's possible to play back cues without this function enabled. There's also an option to record the entire *state*—not just the changes—to allow for a variety of playback styles. More on these features in the *Cues, Cuelists, and Pages* chapter.

Clearing the Programmer

The programmer retains everything that's loaded into it until **clear restore** is pressed. For example, if you select some dimmers and record them into a cue then select some VL5s, the programmer will contain both fixture types. Once **clear restore** is pressed, the programmer becomes empty and the LED in the **clear restore** button turns off.

To restore the most recent contents back into the programmer, press **PIG** plus **clear restore**.

It's a good habit to always press* clear restore *before starting to program new cues. This ensures that lingering items from previous unrelated cues won't be included in your new cues.

A Brief Playback Overview

Let's take a look at the cue we've made. To do so, you'll need to clear the programmer since it has priority over the rest of the console: press **clear restore**. Or press **Blind** to stop outputting the programmer contents.

First, bring up the fader on cue 1 to full. The fader acts as a submaster for intensity only. It has no impact on colour, beam, or focus. Now press the **Go** button above Fader 1. The cue fades in with the programmed time. If you didn't see anything happen, make sure that the Grand Master is at full.

To freeze the fade at any point, press **Halt**. Pressing it again will fade back to the previous cue.

Press **Release** to deactivate (i.e., turn off, or remove from stage) the selected cue list, namely the one with the **choose** button LED lit

To see the cues in a cuelist, press **PIG** and **choose**.

If you used **Blind** while inspecting the cue, don't forget to turn it off before continuing.

Programming with Focus, Colour, and Beam

Let's create a new cuelist that controls the Intensity, Focus, Colour and Beam of Cyberlights.

First press **clear restore** to empty the programmer to make sure that the desk channels don't get included in the new cue. Then press the **choose** button above fader number 2 to select it as our programming destination.

Start by selecting the **`All Cyber`** group and set them **Full**.

Position

Typing **1 ENTER** selects the first Cyberlight. (You can also select the first fixture by pressing **Next**). Its focus position—pan and tilt—can now be adjusted with the centre and right parameter wheels.

To select Cyberlight number 2, press **Next**. Adjust its focus settings and then press **Next** again to select the next Cyberlight. Continue this cycle until all of the Cyberlights have been focused.

Colour

Re-select all the Cyberlights by pressing **`All Cyber`**. Press **Colour** to make the parameter wheels swap to controlling colour. If at any point you want to go back to adjusting focus parameters, simply press **Position** to return the focus parameters to the wheels.

The parameter wheels are now ready to mix a colour for all the Cyberlights. By using the three parameter wheels red can be generated. It's also possible to access the red Colour Wheel settings with the parameter wheels. Since there are more than three colour parameters on the Cyberlight, you will have to press **Colour** again to scroll the wheels to show the Colour Wheel parameter. To return to the colour mixing wheels, press **Colour** one more time.

Alternatively, select the **Red** palette from the colour menu bank to put the colour wheel in its red setting. Alternatively, type **Colour 3 ENTER**.

To deselect palettes, hold PIG and then press the palette button.

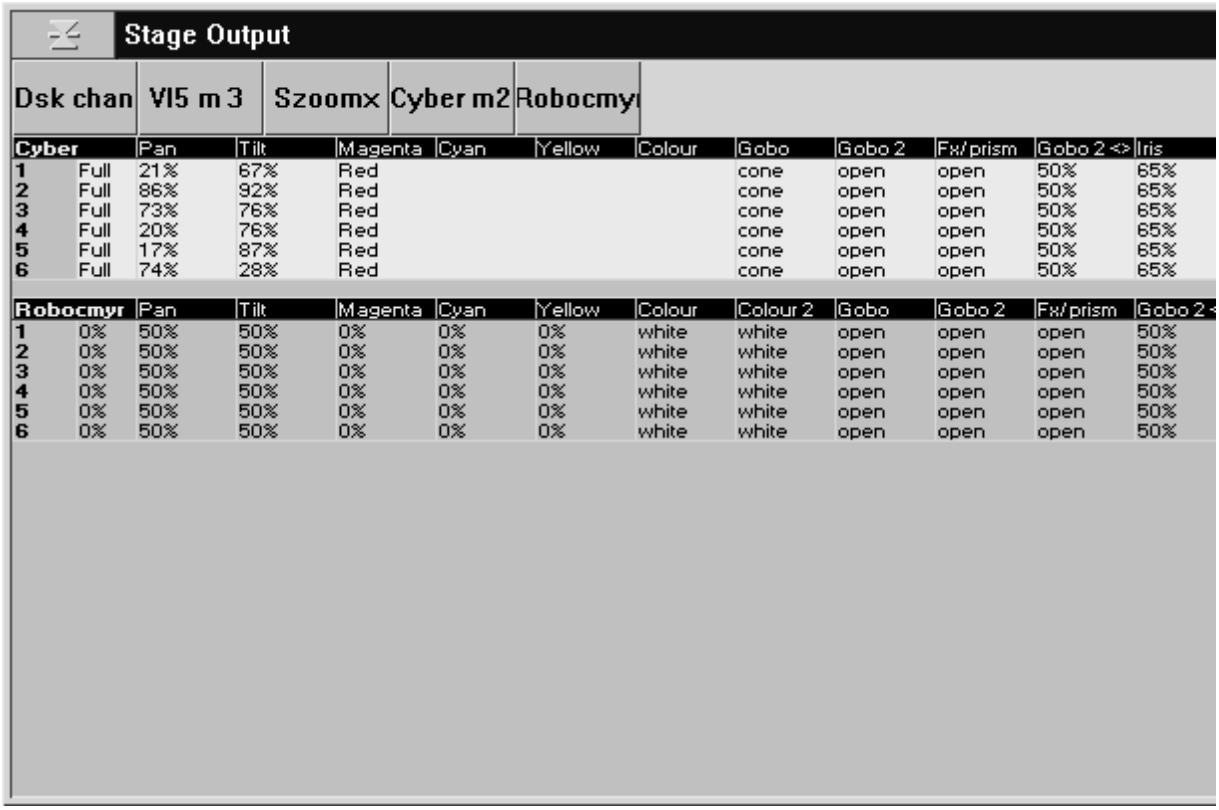
As you can see, there are several ways to set parameter levels:

- **Wheels**
- **Keypad**
- **Palettes**

Beam

Beam parameters include such things as iris, gobos, gobo-rotators, and edges. To access them on the wheels, press **Beam**. Fixtures such as Cyberlights have a number of beam parameters, so it's necessary to press **Beam** several times to scroll through all of them.

Beam parameters are adjusted the same way colour parameters are, i.e. using either the wheels, palettes or keypad. After selecting some beam settings the VDU will look similar to the picture on the following page.



Cyber		Pan	Tilt	Magenta	Cyan	Yellow	Colour	Gobo	Gobo 2	Fx/prism	Gobo 2 <>	Iris
1	Full	21%	67%	Red				cone	open	open	50%	65%
2	Full	86%	92%	Red				cone	open	open	50%	65%
3	Full	73%	76%	Red				cone	open	open	50%	65%
4	Full	20%	76%	Red				cone	open	open	50%	65%
5	Full	17%	87%	Red				cone	open	open	50%	65%
6	Full	74%	28%	Red				cone	open	open	50%	65%

Robocmyr	Pan	Tilt	Magenta	Cyan	Yellow	Colour	Colour 2	Gobo	Gobo 2	Fx/prism	Gobo 2 <
1	0%	50%	50%	0%	0%	0%	white	white	open	open	open	50%
2	0%	50%	50%	0%	0%	0%	white	white	open	open	open	50%
3	0%	50%	50%	0%	0%	0%	white	white	open	open	open	50%
4	0%	50%	50%	0%	0%	0%	white	white	open	open	open	50%
5	0%	50%	50%	0%	0%	0%	white	white	open	open	open	50%
6	0%	50%	50%	0%	0%	0%	white	white	open	open	open	50%

The white background in the output window shows what's active in the programmer. If you can't see a certain fixture, press **Pig** plus a keypad number to bring the chosen fixture type to the top. In the above example, press **Pig** plus **2** to bring the VL5 information to the top of the screen.

Once you're happy with the cue, record it: press **Record** and then **ENTER**.

You may notice that with some fixture types, like Cyberlights, there's more than one wheel for Gobo, and that one of these is followed by this symbol: **<>**. This indicates a gobo rotator. The > and < signs on the parameter settings point in the direction that the gobo will rotate.

Similar symbols appear when programming colour and gobo wheels for certain fixtures; these symbols, **>>** and **<<**, refer to colour wheels, and point in the direction of the wheel's rotation. This symbol, **+**, indicates split colours.

Linked parameters

In contrast to focus and colour, only the altered beam parameters were recorded in the cue. While it usually doesn't make sense to record pan without tilt or magenta without cyan and yellow, beam parameters are best recorded separately. Regardless, these default setting can be over-ridden if necessary in the Control Panel, allowing a pan chase to be programmed independently of a tilt chase.

Now try saving your show to disk:

1. Press the **setup** key.
2. Insert a 3.5" 1.44MB floppy disk into the drive at the front of the console.
3. Press **Save Show**.
4. Press **Okay** to confirm that you'd like to save.
5. Press **Okay** to exit save window.

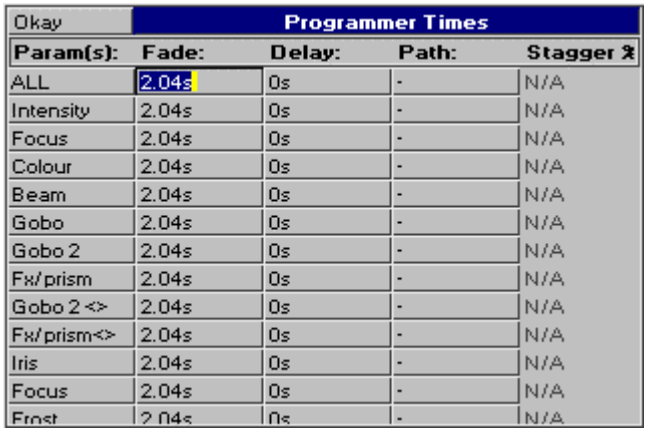
Remember to SAVE OFTEN.

Recording Cues with Time

In most cases using the default fade time isn't satisfactory and it's necessary to enter different times. This is easily accomplished during the programming process by pressing **Time**:

1. Select fixtures and set levels.
2. Press **Time 2.04 ENTER** to select a fade time of 2.04 seconds.
3. Press **Record** and **select** button to record the cue on the selected Master.

When **Time** is pressed, a window opens showing all the parameters for the programmed fixtures, like this one for the Superzoom X:



The **All** line in this window sets times for all parameters. Use the **Intensity**, **Focus**, **Colour**, and **Beam** lines to set times for all parameters of those types. Below these lines, times can be entered for specific parameters. (Time values can have up to 2 decimal places of precision (e.g. 5.11 seconds).)

To set different delay times, use the cursor keys to change to the Delay column.

Once you're done adjusting the times, press **ENTER** to close the Time window. To keep the Time window permanently open, press **Pig** and **Time**, but you will need to press **set** before editing times.

Different times for different fixtures

If different fixtures need different timings, repeat selecting fixtures / setting times, for as many different times as you need. For example, to create a peel off where fixtures move from a point, one by one:

1. Create the starting position and record it as a cue.
2. Select fixture 1, press **Time** and use the cursor keys to select the Delay column. Type **1 ENTER** to give it a delay time of 1 second.
3. Press **Next** to select the next fixture then press **Time** and do the same as in step 2 but with the new delay time.
4. Continue for all fixtures.
5. Record this as the second cue.

Note: if you want to leave the timing window open, you can do so by holding **PIG** and pressing **Time**. In this case, you need to press **Set** to insert new times

Checking your cue before you Record

You don't have to record a cue to check to see how the timing will work out.

1. Press **Try Cue** to fade out the programmer (note this is an alternative to the snap change of **Blind**).
2. Press **Try Cue** again to fade the cue in with time.

Changing timing after Recording

After recording, it's possible to globally adjust a cue's time in the cuelist window with the **set** button. However, to set different times on individual parameters—and not one time for the entire cue—it's necessary to first **Load** the cue back into the programmer. More on these items in the chapters to come.

Split timing

Split timing means that when the cue executes, fixtures whose intensities are going up ("In" fixtures) will have different timing to those fixtures whose intensities are going down ("out"). So a split time has both an In time and an Out time.

Use **/** to enter a split fade time (one with both an in and out time). For example, **2/4** would have an in time of 2 seconds and an out time of 4 seconds. **/** can also be used to enter a split delay time.

Specifying minutes

1. Insert a time in the Wait box.
2. Hold the **PIG** key and press . to get minutes.

Or

1. Hold **PIG** and press **Choose**.
2. Insert a time value.
3. Press **Set** and hit **Minutes**.

Time values can have up to 2 decimal places of precision (e.g., 5.11 seconds).

Changing the default cue times

You can change the default times for fade and delay in the Control Panel window (**setup Panel**). The console will automatically use these for your cues unless you make a change while programming. See *Customising the Console*.

Path

Path is the type of crossfade a cue, a fixture, or a parameter executes; it defines how a cue will change over time. Some console users will recognise path by a different name such as a dimmer curve or channel profile. For example, a PAR can may fade from zero to full in five seconds nine ways:

Defaults	The default path setting for the fixture as defined in the fixture library.
Linear	Smooth, proportionate fade over time.
Start	Snap change at the beginning of the cue.
End	Snap change at the end of the cue.
Damped	Slower crossfading at the beginning and end of a cue.
Brake	Slower crossfading at the end of a cue.
SpeedUp	Slower crossfading at the beginning of a cue.
Under	The fade first goes in the opposite direction of its destination.
Over	The fade overshoots its destination and then returns to it.
Shake	Chaotic, sawtooth fade over the course of the cue.

Path settings can be changed in the Cuelist or Programmer Times windows. Use the cursor and **ENTER/set** keys to set fade in and fade out paths:

Default paths for fixtures are set in the fixture library. Future versions of software will have fully customisable paths**.**

More on Selecting Fixtures

All, Odd, Even

The **All, Odd**, and **Even** buttons act on the selection already in the programmer. **All** is found on the bottom toolbar in both Rock mode and non Rock mode while **Odd** and **Even** are only found on the no Rock Mode toolbar. **All** re-selects all fixtures currently in the programmer. **Odd** and **Even** select the odds and evens of the most recently selected fixtures in the programmer. For example, to select the even desk channels in your rig:

1. Select the **All Desk** group.
2. Press **Even** on the Programmer toolbar.

To change between the non Rock mode toolbar and the Rock mode toolbar, press** setup, Panel **and use the cursor and** ENTER **keys to toggle the highlight over** Rock mode toolbar**. For further detail see** Customising the Console**.

Invert

Invert captures the fixtures *not* chosen in the previous selection. For example, if all VL5's are first loaded in the programmer and then number five is selected, pressing **Invert** selects all VL5's except number five.

Next

Pressing **Next** automatically selects the next fixture in the currently selected group of fixtures, cycling within that group of fixtures. If you've just selected a group or groups, pressing **Next** gives the first fixture in that group or groups, cycling around only the fixtures in the groupor groups.

Pressing **PIG** plus **Next** moves backwards.

Highlight

Highlight temporarily brings the currently selected fixture(s) to 100% intensity and an open beam, without this information being stored in the cue. It's useful for updating preset focuses or for focusing a specific fixture in the middle of a cue. Highlight will not affect the settings within the programmer even though the Stage Output screen will show different values.

Highlight remains active until turned off by pressing **Highlight** again.

Custom highlight settings can be created by modifying the fixture library.

More on Adjusting Levels

Fan

Fan automatically programs several fixtures at once to create symmetrical looks. When used with pan and tilt, fixtures placed in a line will be aimed so they form a fan or a knot. To use Fan:

1. Select the fixtures to program.
2. Press and hold **set**.
3. Use the parameter wheel That controls the parameter you wish to "fan". E.g. use the Pan and Tilt parameter wheels to fan the position of moving fixtures.

Although mainly intended for pan and tilt, *Fan* can be used on other parameters as well. For example, a nice rainbow effect can be created across colour mixing fixtures by choosing **Colour** and holding down **set** while adjusting the parameter wheels.

Fine Wheel Movement

Some fixtures, for instance Cyberlights, have 16 bit resolution for pan and tilt channels. In order to access the fine level of resolution, hold **Pig** while turning the parameter wheels. The levels will be adjusted at the finest setting possible. Note that although the parameter wheels generally work at 8 bit resolution, all crossfades in the ECHELON are performed at full 16 bit resolution.

Flip

Flip rotates a moving-head fixture so that it hits the same point on stage, but from the other end of its movement range. To achieve this, select the fixtures you want to flip and press **Flip**.

Active

Active combines the output of several faders to create a new look. When you press **Active** followed by **ENTER**, the console takes a "snapshot" of the console's current output. For example, if four cues are active with their faders at various levels, **Active** will combine the states of all the cues into the programmer. This can then be recorded as a cue anywhere on the console.

To use **Active**:

1. Set the look you want with the Masters.
2. Press **Active.**
3. Press **ENTER.**

In addition, you can use **Active** to load a subset of the console's output. For example, to pull into the programmer all fixtures which are currently red, press **Active**, the red palette button, and then **ENTER**. This syntax can be used with fixtures, groups, and palettes.

Grabbing all parameters of a fixture

Sometimes it is handy to grab all the parameters of an active fixture to make sure that they will be recorded in a cue. You can do this by

1. Select fixtures to grab.
2. Press **Pig** and **Active.**

Instalook

Instalook is a random cue generator. Select fixtures and press Instalook. To limit the pan and tilt to be around a certain range, press a position preset first.

Use it when you're desperate for ideas; some call it the 5 AM button. While it's not terribly sophisticated in its present form, it will evolve over time.

Removing Programming

Cancelling your latest modifications

If you change your mind about a level adjustment, press the backspace key. The current selection and any changes you just made will be cancelled.

Undoing individual parameters

Holding **Undo** while moving a parameter wheel knocks out any programming for that parameter out of the programmer.

Undoing Parameters of a Certain Type

You can knockout parameters of a certain type by holding Undo and pressing the appropriate key from **Group** (for intensity), **Focus, Colour, and Beam**.

Knockout

This function removes selected fixtures and their programming from the programmer:

1. Select the fixture(s).
2. Press **Knockout**.

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Groups and Palettes

In addition to the palettes created by Automenus, you can create custom groups and palettes to meet your own specific needs. These may be combined with one another or manipulated in any way.

Creating and Modifying Groups

You can make your own groups for quick fixture selection. A group can include any number of fixtures and any combination of fixture types.

To create a fixture group:

1. Select the fixtures for the group, such as **Robo1220 cmyr 1 thru 3 ENTER + Superzoom x 1 thru 3 ENTER.**
2. Press **Record.**
3. Select the destination by pressing an empty space in the Group menu bank. (Or type in a destination group number: **Group 13 ENTER**.)

Naming a Group

To give the group a name:

1. Press **set**.
2. Type in a name, like Stage Right, on an external keyboard or by using the keyboard built into the right menu banks.
3. Press **ENTER**.

Changing an existing Group

To remove fixtures from a group or combine fixtures into a group:

1. Select the desired fixtures to add or remove
2. Press **Record**. The Programmer toolbar will be replaced by the Options toolbar.
3. Choose an option from the Options toolbar: **Merge** to combine fixture into the destination or **Remove** to eliminate them from the destination.
4. Select the group to be changed.

You can also use **Load** and **Update** to modify a group

1. Press **Load**, followed by the group you want to change.
2. Either **Knockout** existing fixtures, or select new ones.
3. Press **Update**.

Finally, existing groups can be combined to make new ones.

Creating and Modifying Palettes

Palettes are a useful programming tool giving quick access to parameter levels. There are three types of palettes: Focus, Colour, and Beam. Focus palettes are also referred to as preset focuses.

Why are palettes useful?

- They're a quick way to retrieve common positions or colour mixes.
- They automatically update: any change in the original palette will be automatically reflected in all cues that use it.

- They can be named properly. These names appear across all display types.
- Like groups, palettes can be made from any combination of fixture types. For example, a Red palette could contain red for scrollers, VL5's, Cyberlights, Super Scans, and Roboscan 1220's, assuring that colours match every time.

To create a palette:

1. Select fixtures and adjust the parameters to include in the palette.
2. Press **Record**.
3. Press the destination palette location. (Or type in a destination palette number: **Focus 21 ENTER**.)
4. To name: press **set**, type in a name, and press **ENTER** to name the palette.

If you create a palette with one fixture, this setting will apply to all of the fixtures of that type. If a palette is recorded with more than one fixture of the same type, then each fixture of that type will receive its own value.

If you try to create a palette over the top of an existing palette, a message box labelled "Choose edit" will pop up telling you that this item already exists and ask you to select between Insert, Replace, Merge and Cancel. Insert will place the new palette in the palette button you have chosen and push all palette buttons from this button onwards one place to the right. Replace will delete the current contents of the palette button and replace it with the information in the programmer. Merge combines the programmer contents into the destination palette. If there's a conflict, the information in the programmer has priority. Cancel will abort the process.Naming Palettes

To name an existing palette, open the required palette window using **PIG** + **Position**, **Colour**, **Group** or **Beam**. Select the palette to name with the cursor keys, press **set** and enter name followed by **ENTER**.

Masking

When palettes are recorded, the programmer automatically filters out parameters that are not appropriate to that palette type. For example, if intensity is at full when creating a focus palette, the intensity will not be included.

However, it's possible to over-ride this masking if you want to record intensity into a Focus palette, for instance. To over-ride masking:

1. Select fixtures and adjust the parameters to include in the palette.
2. Press **Record**. You will see that the programmer toolbar is replaced by the Edit Options toolbar.
3. Press the **Use I** and **Use F** option in the bottom toolbar. This means that Colour and Beam will not be included, but that intensity and Focus will be.
4. Press the destination palette location.

Embedded Palettes

It's possible to create a palette that is actually comprised of other palettes, making it easy to grab a palette giving different fixtures custom settings. One particularly useful application for this feature is with focus palettes. Often stage looks are built up from many individual focuses. Embedded palettes make putting multiple fixtures in their own focus positions as simple as one button press.

As an example, let's say we created a palette from the following arrangement:

Fixture 1	Drums
Fixture 2	Singer
Fixture 3	Bass
Fixture 4	Keyboard
Fixture 5	Guitar

Embedded palettes let us recycle existing focuses (Drums, Singer, etc.), so we don't have to create this new look from scratch. This not only saves work while programming, but reduces the number of focuses to be updated.

Modifying Existing Palettes

There are two ways to modify a palette: 1) use **Record** with either the **Merge** or **Remove** option or 2) use the **Load** and **Update** buttons.

The first method works just like modifying groups:

1. Select the fixtures you want to change and set the new parameters.
2. Press **Record.**
3. Choose an option: **Merge** to combine them with the destination or **Remove** to eliminate them from the destination.
4. Select the destination palette.

Merge combines the programmer contents into the destination palette. If there's a conflict, the information in the programmer has priority. It's possible to merge into multiple palettes simultaneously: select the destination palettes numerically on the keypad or hold down **Record** while pressing the palette buttons.

Remove deletes selected fixtures and parameters from a palette. It is parameter specific: if the palette has *all* parameters for a VL5 but only Intensity has been altered in the programmer, only the Intensity parameters are wiped out, while the other parameters remain in the palette. To remove fixtures from multiple palettes simultaneously: select the destination palettes numerically on the keypad or hold down **Record** while pressing the palette buttons.

In the second method, the item to modify is first selected:

1. Press **Load**.
2. Select the palette to modify.
3. Select the fixtures and modify their parameter settings as though you were setting them up in the programmer in the first place.
4. Use **Knockout** or **Undo** to remove unwanted programming.
5. Press **Update**.

Modifying Palettes while running a Show

While running a show, you can over-ride fixtures using the programmer. If you want to store the new settings permanently, you can use the auto update feature to identify what programming was over-ridden and thus where to store the changes. For example:

1. Hit **Go** on several Playback Masters with cuelists.
2. Grab some fixtures and modify their settings.
3. Hit **Update**. The command line will show **Auto Update**. A window will pop up showing all the cues and palettes that have been over-ridden. Note, the current cue of the *selected* master will always be selected by default. If the window does not pop up, then either you have not made any adjustments in the programmer, or you already had something loaded.
4. Select the items you want to update by using the cursor keys and **Enter** key to highlight them.
5. Press **okay** to update selection.

This method is useful when playing back a cuelist during a show and a preset focus position needs updating. You need only select the fixtures to modify and adjust their pan and tilt settings. Once **Update** is pressed, the update window shows the fixtures' preset focus and lets you select them for immediate updating.

As you'll see in the next chapter, cues can also be modified this way.

Manipulating Groups and Palettes

Groups and palettes are flexible items which can be moved, copied, or deleted at will. Note: all of the following edit functions also work for cues, cuelists and pages.

Copying and Moving

To copy or move a palette (or group) to a new location:

1. Press **Copy** (or **Move**).
2. Press the item to copy.
3. Press the new location for the item.

To copy or move multiple items, use this syntax:

1. Press **Copy** (or **Move**) and hold it down.
2. Select the items to copy (these must all be in the same menu bank, i.e. all Group buttons, or all Colour buttons, etc.)
3. Let go of **Copy** (or **Move**).
4. Press the new location. (The items copied (moved) will fill up the menu buttons starting at the new location and continue filling up the locations to the right until all copied (moved) locations have been placed.)

If you select a destination that is already in use, the item being copied (moved) will be given an item number with a decimal value and the existing items will move one (or more) positions to the right on the menu buttons.

Alternatively, you can use the keypad. For example: **Copy Colour 5 thru 12 ENTER @ 20 ENTER**.

Merging Groups or Palettes

Palettes (or Groups) can be combined with one another by selecting the **Merge** option

1. Press **Copy**. The Options toolbar will have opened on top of the programmer toolbar
2. Select the item to merge
3. Press **Merge** from the Options toolbar, and apply any masking options that might be necessary.
4. Press item to merge into.

Again, it is possible to Merge multiple items at a time by holding **Copy**, or using the keypad syntax. It is not possible to merge a Group into a Palette. Where there is conflict between what's in the programmer and what's in the cue, the programmer takes priority.

Deleting Groups and Palettes

To delete a group or palette:

1. Press **Delete**.
2. Press the palette to be deleted.
3. Press **ENTER**.

OR:

1. Press **Delete** and keep holding it down.
2. Press the palette to be deleted. If you select the wrong palette button, pushing the palette button a second time will deselect that button.
3. Let go of the **Delete** button.

Cues, Cuelists, and Pages

This chapter covers cues, cuelists, and pages. You'll learn how to edit, copy, and work with all three items.

Manipulating Cues

Viewing Cuelists

To see a list of the cues within a cuelist, hold down **Pig** and press **choose** button for desired fader's cuelist. Alternatively, you can hold down **setup** and press **3** on the keypad for the current cuelist to be displayed on the external monitor. (To change between cuelists, press **choose** button for desired cuelist. If the desired cuelist is not on the current page, you will need to change pages first.)

How to Select Cues During Edit Operations

Cues are selected in the same way as Groups or Palettes. After pressing the **Record**, **Copy**, **Move**, or **Load** button:

Type in the cue number on the keypad. Unlike Groups or Palettes, there is no prior "Cue" button to push. When you type in a number, the console assumes you are referring to cues in a cuelist on the selected playback master (the one with the **choose** LED lit). The **/** key can be used to select cues on other masters. For example, typing **2/3 ENTER** would select cue 3 on playback master 2.

Modifying Existing Cues

The technique is the same as for modifying palettes: 1) use **Record** along with **Merge** or **Remove**, 2) use **Load** / **Update** or 3) using **Update** without **Load** (Auto Update)

The first method uses the **Record** button in a similar manner to the way cues are created in the first place:

1. Select fixtures and adjust parameters.
2. Press **Record**.
3. Press **Merge** or **Remove** on the toolbar.
4. Type the cue number and press **ENTER**.

Merge combines the programmer contents into the destination cue. If there's a conflict, the information in the programmer has priority. It's possible to merge into multiple cues simultaneously by entering the destination cues on the keypad separated by **+**.

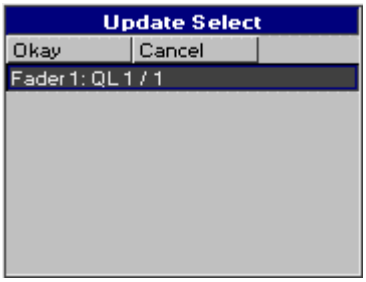
Remove deletes selected fixtures and parameters from a cue. It is parameter specific: if the cue has *all* parameters for a VL5 but only Intensity is altered in the programmer, only the Intensity parameters are wiped out, while the other parameters remain in the cue.

The second method uses **Load** to bring the cue into the programmer where it can be modified directly, before updating back to the original cue.

1. Press **Load**.
2. Select the cue to modify via the keypad.
3. All fixtures in the cue are automatically selected and ready for instant modification. To only modify some fixtures, just select them normally and only they will be changed.
4. Press **Update** to record the changes.

The third method uses **Update** on its own. **Load** must *not* be pressed for this to work.

1. Select fixtures and adjust parameters.
2. Hit **Update**. The command line will show Auto Update. A window will pop up showing all the cues and palettes that have been over-ridden. Note, the current cue of the "selected" master will always be selected by default. If the window does not pop up, then either you have not made any adjustments in the programmer, or you already had something Loaded.
3. Select the items you want updated using the cursor and **ENTER** keys.
4. Press **okay** to update.



This method is a convenient way of adjusting programming while in a live environment.

Copying, Moving, and Deleting Cues

Cues are copied, moved, and deleted with the same commands used elsewhere on the console.

To copy or move a cue:

1. Make sure that the cue's cuelist is selected.
2. Press **Copy** or **Move**.
3. Enter the source cue number.
4. Press @. (@ means "**to**").
5. Enter the destination Cue number. If the cue exists the cue will be inserted just before the destination cue.

To select multiple items, press **Copy** and use the keypad to select a range of cues, just like selecting multiple fixtures: **Copy 1 Thru 4 ENTER to 12**.

Cues can also be copied to other cuelists. For example: **Copy 2/1 Thru 4 ENTER to 5/12** will copy cues 1 through 4 in Master number 2's cuelist to cues 12 through 15 in Master number five's cuelist.

Just like manipulating Palettes, you can use **Copy** in conjunction with the Options toolbar to **Merge**, or **Mask** while copying cues.

To delete a cue:

1. Press **Delete**.
2. Enter the cue number to be deleted (Fader number **/** Cue number.)
3. Press **ENTER**.

Please note that the Delete command cannot be reversed. Unless you have the information on a backup disk, it will be completely lost.

Summary of Recording Options

State and Everything

Normally when recording a cue, only the parameters you adjusted since the last record are included in the new cue. For example, if only the pan and tilt wheels are touched before recording, the cue won't contain information for intensity, colour, or any other non-focus parameter.

This system has two advantages. One is that cue storage is extremely efficient, since programmed values are not repeated throughout a cuelist. The other is flexibility during playback. Some shows are programmed with only one parameter type in each cue or sequence, allowing them to be combined with each other in different ways to achieve a wide selection of looks. This would not be possible if the console always stored values for each parameter.

However, this system can occasionally be confusing, and sometimes recorded cues don't appear the same during playback as they did while in the programmer. This problem usually has one of two causes:

1) *Active cues on the playback masters while recording.* The look on stage is a combination of the programmer and the playback masters, but only what's in the programmer is recorded in the cue. Later, when the cue is played back, it will look different if the cues that were active while recording are now turned off.

2) *Active cues during playback outputting values for parameters not included in the recorded cue*. If a Cyberlight is programmed with only intensity, colour, and focus information, an iris setting will not be included in the cue. If this cue is activated after another cue has put the same fixtures in a tight iris, the iris will remain tight even though it was open when recorded. This is because no information was programmed for iris since it was not touched.

`State` and **`Everything`** let you avoid these problems and control how much is included when recording a cue.

Pressing **`State`** on the toolbar after **Record** will record everything that's been entered into the programmer since the last time **clear restore** was pressed.

Pressing **`Everything`** records the entire output from the console, as though a "snapshot" were being taken. This ensures that the look on stage during playback is exactly the way it looked during programming. Recording with **`Everything`** selected is the equivalent of creating a blocking cue on a conventional console. In contrast, State only creates a blocking cue for the fixtures used in the specific cuelist.

When copying cues, pressing **`State`** copies the entire state of the cuelist up to the point of the selected cue, not just the cue. This corresponds to the sum of all the cues up to and including the selected cue. When loading cues, pressing **`State`** loads the cuelist state into the programmer.

Unblock

Whenever State or Everything are used, parameters will often repeat settings programmed in earlier cues. These are known as hard commands. Hard commands are also created during the normal course of programming. Sometimes these hard commands are deliberately included, but sometimes they are the by product of cue manipulation. To eliminate unwanted hard commands, use Unblock:

1. Press **Pig** and the Choose button for the cuelist to unblock
2. Press **Unblock** on the cuelist toolbar.
3. Enter a range of cues to unblock.
4. Press **ENTER**.

Eliminating unnecessary hard commands is a good way to reduce show size on disk.

Grabbing All Parameters

To force values into all parameters for the selected fixtures in the programmer, press **Pig** and **Active**. Thus, even if a parameter is not adjusted while programming a cue, it will contain its current level upon recording. If the parameters are not controlled by any cues, then this will be the default settings from the fixture library.

Track Fwd/"Cue Only"

Use this after **Record**, **Copy** or **Update** by pushing **`Track Fwd`** button on toolbar. This button toggles between the two options:

Track Fwd On The cue will track its changes through the subsequent cues until there's a change previously programmed. This is the normal programming mode.

Track Fwd Off This is also known as **`Cue Only`**. Using the **`Cue Only`** option changes the following cue so it reverts to its previous state prior to the operation. In other words, the changes are undone in the next cue.

In addition, when you press the **Track Fwd** button to enable or disable the "**Edits Track Forward**" function, the change will stay for one edit operation only. It will revert to the default setting for the next operation.

However, you can use the control panel window button "**Edits Track Forward**" to change the default.

Merge and Remove

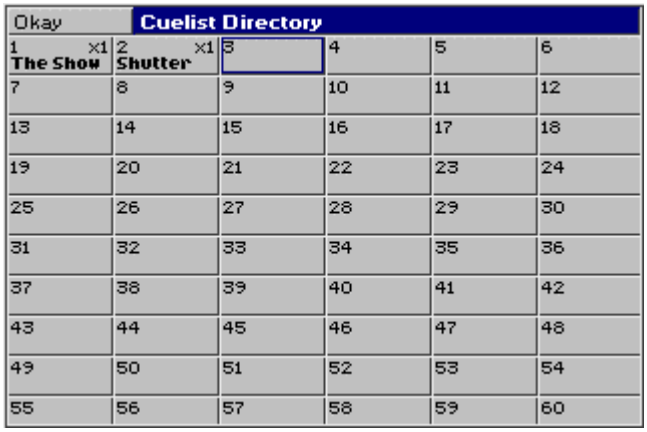
Use these options after **Record** and **Copy** (**Merge** only) to combine or remove fixtures from existing cues rather than insert new cues.

Masking/Use

As we've seen, it's possible to filter out Intensity, Focus, Colour, Beam, or Time settings by pressing the relevant Use button(s) on the toolbar while recording. (The default setting of the Use buttons is neither selected or deselected, but rather allowing the console to choose what parameters should be recorded). For example, if all parameters for a fixture are selected in the programmer and **Use C** is pressed after **Record**, colour information will be included in the cue and Intensity, Focus, Beam and Time information will be ignored. Any combination of the Use buttons can be selected/deselected when recording a cue, parameters that have not been modified in the programmer will be not be recorded even if the Use button for that parameter has been pushed.

Cuelists

Every cuelist is stored in the cuelist directory window. Open the window by pressing **PIG** and **List**:



Any cuelist can be accessed at any time from this window.

Cuelists can be selected, copied, moved, and deleted, just like groups, palettes and cues. Merging cuelists is more complicated:

Merging Cuelists

To merge two cuelists, they must both be on Playback Masters

1. Press **Copy**.
2. Select **Merge** on the toolbar.
3. Press @
4. Select the cues to merge from one cue list. Use **thru** and **+**.
5. Select the cuelist and all of the cues to merge into with the keypad (e.g., **1/2 Thru 5**). To merge into more than one, all cues must be selected.
6. Press **ENTER**.

If the selected destination has more cues than the source, the source cues will repeat themselves until the end is reached. If the reverse is true, then merging will cease once the end of the destination is reached.

Naming Cuelists

Cuelists cannot be named via the master itself. You must find the cuelist in the cuelist directory and name it there.

1. Open cuelist window using **Pig** and **List**.
2. Use cursor keys and hit **set** to select the desired cue to name.
3. Type in cue name using keyboard built into the menu banks or use an external keyboard. (Note if the external keyboard is not present but selected in the Control Panel window, you will not be able to change the name of the cuelist.)
4. Press **ENTER**.

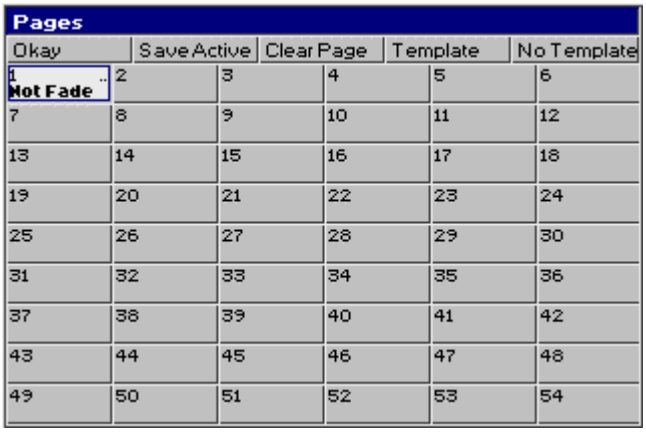
Deleting Cuelists

To delete a cuelist permanently on all pages, delete it in the cuelist directory window. To only delete it from the Master, hold **Delete** while pressing the Master's **choose** button.

1. Open cuelist window using **Pig** and **List**.
2. Press **Delete**.
3. Press **List** and then enter cuelist number.
4. Press **ENTER**.
5. Press **Okay** to close cuelist window.

Pages

Pages are a useful way to organise programming. They let cuelists be grouped and loaded quickly onto the Masters with one button press. For concert design, shows are often organised with one song per page. When the set list arrives before each show, it's a simple matter of moving the pages around so they reflect the running order. To see the available pages, press **PIG** and **Page**.



What Is a Page

Cuelists are *not* stored on masters. The masters merely reference cuelists in the cuelist directory; the referencing details are stored in a page.

When you change page, the masters receive new reference information, and hence all the cuelists on all masters change instantly.

The same cuelist can be used several times within a page or on several pages. The number in the top right corner of each cuelist box in the cuelist directory window shows the number of times the cuelist is used in pages.

Changing Page

There are three ways to change pages:

- Press **Next Page**. (To move backwards through the pages, hold the **PIG** and press **Next Page**.)
- Type **Page** number **ENTER**.
- Go to the desired page in the page directory window using the cursor keys and press **ENTER**. (**PIG** + **Page** will open the page directory window).
- Press the desired page button in the Page palette.

The page is now the *current page*. Any changes you make as to which cuelists are on which masters will now affect this page.

Creating a New Page

To create a page, just press an empty page button, or press **Page** and an unused page number. As elsewhere, you can name pages using **set** whilst in the page directory window. To get the keyboard on the menu banks, you will need to push the **Menu** button.

Naming a Page

Changing the name of a page is done in the page directory window.

To change an existing page name:

1. Hold **Pig** and press **Page** to open page directory.
2. Use cursor keys and **set** to select page to name.
3. Enter name of page using keypad (top right menu bank. Press Menu if you are relying on the keypad and it hasn't appeared) or external keyboard.
4. Press **ENTER**.
5. Press **okay**.

Modifying a Page

Change to the page to be modified, and either record cues into a brand new cuelist or add an existing cuelist to the page. New cuelists are automatically added to the cuelist directory and to the current page.

To add an existing cuelist to the current page:

1. Open the cuelist directory by holding **PIG** and pressing **List**.
2. Press **Move** or **Copy**.
3. Press **List**.
4. Select the cuelist by entering its' number on the keypad.
5. Press the **choose** button for the desired Master.
6. Press **Okay**

After a cuelist is *moved* onto a Master it's still linked to the original cuelist; any changes made to it will also affect all other uses of that cuelist in other pages.

When a cuelist is *copied* onto a Master, a brand new cuelist is made with no links to any other pages. Any changes made to it will not affect other pages (unless, of course, the new cuelist is subsequently moved onto a master in another page)

To delete a cuelist from the page, but retain it in the cuelist directory window for future use:

1. Press **Delete**
2. Press the **choose** button for the Master the cuelist is sitting on.
3. Press **ENTER**.

This will delete the cuelist from the page, but the cuelist will still be located in the cuelist window for future use:

Clearing a Page

Press **Clear Page** in the Page Window. Note: This does not delete any cuelists, it only removes them from the page.

1. Hold **PIG** and press **Page** to open page directory.
2. Use cursor keys and **Enter** to select page to delete.
3. Press **Clear Page** in toolbar.
4. Press **Okay** to confirm or **cancel** to exit.
5. Press **okay**.

Note: Clearing a page will only remove cuelists from the page that are not part of a template page. Also, it will not clear the name of the page.

Deleting a Page

Deleting a page will totally remove it from the page directory. Note: This does not delete any cuelists.

1. Press **Delete**.
2. Press **Page**.
3. Enter page number.
4. Press **ENTER**.

Note: You cannot delete the current page. If you wish to delete the currently active page, you must first change to another page and then delte the page.

Page Holdover

There is a choice between two standard ways in which the console behaves with cuelists when you change page, selectable from the Control Panel. The default mode when starting the console is that cuelists do not get held over when you change page. When you execute a page change command all active cuelists will release themselves over their programmed release time and will disappear from the playback masters. The new set of cuelists, from the incoming page, will be loaded automatically onto the playback masters without being activated. To activate any of the cuelists, just press the **Go** button for the master.

The other option in the control panel is to select Page hold if Active. With this mode selected any cuelists that are actually active as you change page will automatically be held over, whilst any no-active cuelists will be replaced with cuelists from the incoming page. A cuelist that is being held over from a previous page will display a in front of the cue name, for example, the normal name of a cue might be **Drum Solo**, if the page is held over the name will look like **Drum Solo**. To remove the holdover, release the fader and the cuelist for the new page will now appear.

At anytime, when changing page, and in either of the two modes mentioned above, you can manually holdover any particular cuelist, or cuelists, whether they are active or not. To manually holdover a cuelist on a master while changing page, hold down the master's **Choose** button whilst changing page. If you hold down multiple **Choose** buttons, all of the relevant cuelists will be held over.

To remove the holdover, release the fader and the cuelist for the new page will now appear. A cuelist that is being heldover from a previous page will display a in front of the cue name.

Crossfading between Pages

It is possible to crossfade straight from one page's look to another just by changing page. This is done by storing in the incoming page which masters must be activated on this page change (i.e., which masters have **Go** pressed automatically).

1. Change to the incoming page.
2. Press **Go** on some masters, so that the looks you want to change to are now active.
3. Open page directory (**PIG** and **Page**).
4. Press **Save Active**.
5. Press **okay**.

An **A** will appear in front of the page name in the page directory to indicate that you have turned "**Save Active**" on.

Now when you change to this page, the looks will be put on stage automatically. By using this method on multiple pages, you can now use the **Next Page** button, not only to change page, but also as a "Go" button for the first cue on the incoming page.

By using the Save Activity function with multiple pages the need for page holdover can be negated, as you will always be able to crossfade smoothly between two completely separate cuelists on two separate pages. If you are using the Echelon in a concert environment and you have the console set up so that you have the cuelists for one complete song on each page, the Save Activity function is especially useful. Remembering that the correct cuelist for the first part of that song will always be output correctly, you can quickly and confidently access any page on the console, even if a band play their set in a different order than normal.

To turn off activity for any particular page, change to the page and press **Save Active** Again in the page directory screen. The **A** will disappear from the front of the page name.**Template Pages**

A template page allows you to specify cuelist(s) that will appear in every page, without you having to Move that cuelist into all the pages. Use it when you have one master cuelist for playback, then change

page to access different special effects. Or use it to store useful manual control cuelists, items such as smoke machines or lectern lights.

To setup a template page

1. Make the page as normal.
2. Make the page current.
3. Open page window (**PIG** and **Page**).
4. Press **Template** in the Page window.
5. Press **okay**.

A **T** will appear in front of the page name in the Page window to indicate that it has been loaded as a template page.

If you now change to a different page, you should still see the template page's cuelists appearing. If both the normal page and the template page are using the same master, the normal page will over-ride the template page.

Because the template page is not a show page, it will never be accessed when you use the Next Page button to access different pages.

For the template page to operate correctly, make sure that the normal pages do not have cuelists set up where the template cuelists should be, except where an over-ride is specially intended.

To turn off the template page, go into page directory and press **No Template** at any time.

Please note that there can only be one template per show.

Mini Effects Engine

This chapter covers the Mini Effects Engine both in summary and in detail.

The Mini Effects Engine is a way of creating dynamic effects very quickly. You can use it to make circle effects, ballyhoos, shutter chases, fluctuating rainbows, and many more.

Previously, to make a dynamic effect, you had to create each static look first, turn them into a chase, and finally run the cuelist to obtain the effect. Now, only a few button pushes will create the same effects within the programmer. Effects can be recorded into a single cue and can be crossfaded from one to another in successive cues.

Using the Effects Library

The Echelon comes with a library of prerecorded effects to make programming as simple as pressing a button. As an example, let's create a circle chase:

1. Select the fixtures for the effect and put them in the desired intensity and colour settings.
2. Press **Effect**.
3. Press one of the **Circle** buttons in the Effects menu palette.

(You can also select an effect by opening the Effects Window (Press PIG + Effect) and use the cursor keys and ENTER to select the desired effect.)

A circle chase has now been generated for the fixtures. Now press **Ballyhoo** (and some of the other effects) to see what it does. If you have trouble finding them, try paging through the Effects palette.

Running Effects Across Different Fixtures And One Shot Effects

To run effects across multiple fixture types or have an effect that runs once and stops, Select the fixtures (several types of fixtures can be selected) as you would normally and then open the Effects Directory Window and press **NoFx**. Select the type of effect in the drop down menu using the cursor keys and **ENTER**.

1. Open the Effects directory window. (Hold PIG and press Effect).
2. Press NoFX on the toolbar to open drop down menu.
3. Select the type of effect setting using the cursor keys. (One Shot settings, or "X' fixtures of "Y" fixtures per group.)
4. Press ENTER to close the drop down menu.

Recording Effects

To record this look as a cue, just press **Record** as you normally would. A single cue will be created. To modify an effect after it's recorded, load it back into the programmer.

Adjusting Rate, Size, and the Center Point

The rate and size for an effect can be adjust quickly with the left and center parameter wheels.

Certain effects—like circles—use a parameter setting as the center point (or base value). The center point will be the programmer's setting for that parameter when the effect is recorded. To change the center point, either change the parameters that comprise the base value, or to see the centre point on its own, reduce the size of the effect to 0. You may need to reselect the effect from the palettes once you have changed the centre point to get the effect working properly again. If a palette is used as the center point, then the effect will change to reflect changes in the palette.

Offset
Offset refers to where in an effect cycle a fixture begins the effect. A single effect can have many looks by using different offsets. Many of the preprogrammed effects in the Effects window have several permutations with different offsets depending on the number of fixtures.

Fanning Effects
A quick way to evenly spread the offsets across a range of fixtures is to fan them; hold *Set* while turning the Offset wheel. This can generate some interesting looks. Fan also works on rate and size

Turning off Effects
To turn off an effect completely:

1. Select the fixtures.
2. Press the **Knockout** button in the Effects Menu.

This will completely remove the selected fixtures from the programmer.

OR

1. Select the fixtures.
2. Hold **Undo** and Press **Group**, **Focus**, **Colour**, **Beam**. or **Parameter** wheel.

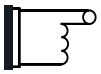
This will turn one component of an effect off. The side effect is that you will lose all programming for that component, not just the effects programming.

Real-time effects take up 8 times more memory than a normal static look. This means that you will be able to store 8 times fewer cues than normal, if all cues were made up of effects. Bear this in mind when planning your show.

Making Custom Effects
It's also possible to create effects by combining existing effects and recording the combined effect in a blank palette position. Effects are usually transferable from one fixture type to another (provided they have similar parameters), so an effect created on an Intellabeam can be used on a SuperScan.

To make your own effect:

1. Select your fixtures.
2. Select the desired effects from the Effects pallete.
3. Adjust the offset, size and rate to suit.
4. Press **Record** followed by the pallete button you wish to store the new effect into..



Sometimes the console may not be able to synchronise all your effects in the programmer correctly (if they have come from many different sources). To resynchronise, turn Blind on and off.

Base Values
Most of the effects that are provided on the blank show disk are *relative*. This means that they expect to be added to a base value.

You set the base value just like setting up a normal value, using the parameter wheels or by choosing a palette. This can be done before or after you have selected an effect.

Effects Library
Multiple fixture effects are stored in the Effects Library. You can use the pre-prepared effects from the blank show disk, or you can record your own combination of existing Effects. Effects Libraries can be merged from other shows. This way, it's possible to build up a personal library of effects which are used from show to show.

To store a new effect:

1. Create the effect as above.
2. Press **Record**, and mask out any unwanted parameters (e.g. intensity in a movement effect).
3. Choose an Effects button.

The new effect button will store the effects you set up. An IFCB indicator in the will show what has been stored.

Effects in the effects menu are not like palettes. They do not auto update.

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As well as being completely spread out, it's possible to have an entire show's programming can be placed inside one cuelist, under the control of one Master. To achieve this flexibility, cuelists are designed so that:

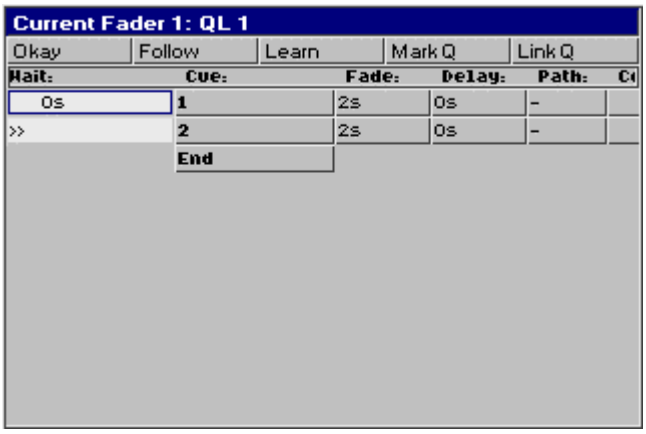
- Each cue can have many different times.
- They can run many cues simultaneously.
- Cues can be triggered manually, after a delay, or by Timecode. Timing can be over-ridden on the fly.
- Cuelists can contain loops and links.
- They can be run as chases.
- All the manual controls can be customised to tailor playback operation to your exact needs.

This chapter covers the timing control of cuelists, and the cuelist window functions. Cuelist options are covered in the *Playback* chapter.

Cuelist Window

The cuelist window is the key window to see what's going on in a cuelist. Here, timing is modified, options are selected, and cue contents are examined. To open a cuelist's window, hold down the **PIG** and press **choose** for the desired Master.

Or press **setup** and **3** to view the window on the external monitor:



Window Layout

The wait column, which is the left hand column, of the cuelist window shows the wait time for cues, and also indicates the current playback state of cues. As we'll see in the next section, this column is used to change Wait times.

On the external monitor as cues execute, the cues in this column turn white to indicate they are active. In addition,

- **>>** symbol denotes the current cue.
- **R** denotes an actively crossfading cue along with a number showing the percentage of the fade completed.
- **H** denotes a halted cue.
- Pending cues have a countdown to when the cue will execute; this is the wait time.

The Cue column, the second column from the left, shows the cue number and any name associated with the cue. This column of buttons are also the buttons used for selecting cues during edit operations.

To change a cue number:

1. Open current cuelist window by holding **Pig** and pressing **choose** button of cuelist to view.
2. Select cue by moving the cursor box over it's name/number.
3. Press **set**.
4. Type in the new number from the keypad, followed by **ENTER**.

Cue numbers can have up to 4 digits to the right of the decimal (e.g., 1.0001).

To change a cue name, type in a name instead of a number.

In further order from the left hand side of the screen, the Fade, Delay, Path and Comment columns show timing characteristics for the cues in your cuelist. Timing can be edited directly using these columns. Special cues such as Link cues or Mark cues use these columns for other purposes.

The Comment column can be used to either enter a comment relevent to the cue, or to enter Comment Macros that can be used to control other cuelists. See Macros later in this chapter. Use the **set** key and type in your comment followed by **ENTER** key.

Timing

There are three timing elements for every cue: one wait time, and one or more fade and delay times.

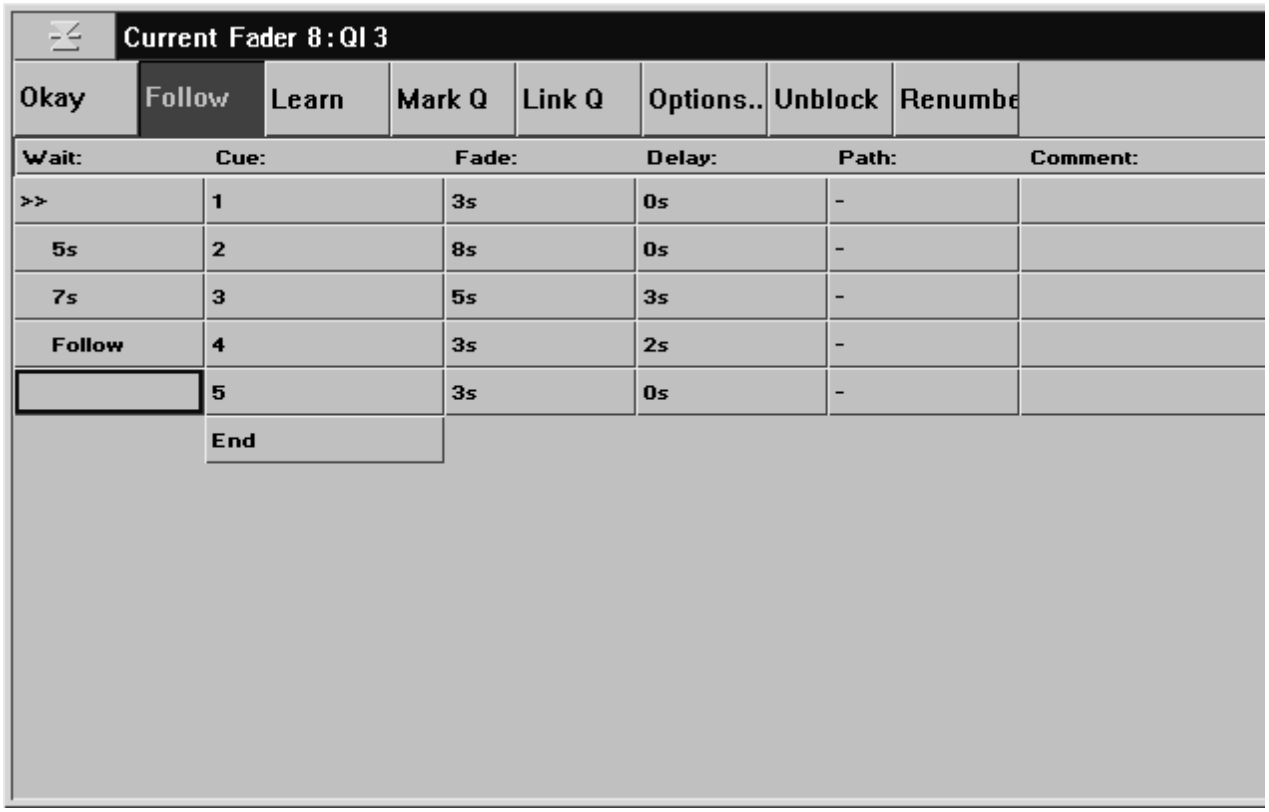
The wait time is the time between pressing the **Go** button and when the cue begins to execute.

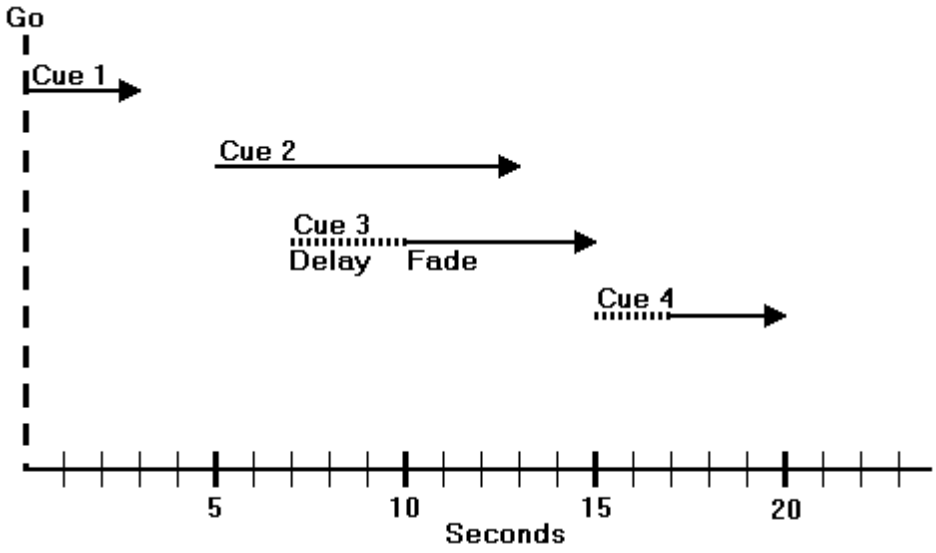
The delay time is the time in between the cue starting (after its wait has elapsed) and the crossfade starting.

The fade time is the crossfade duration.

The reason there is a distinction between wait and delay time is that the wait time schedules the execution of a cue inside a cuelist, whereas the delay time(s) schedule the execution of fades on different parameters within a cue.

If you're feeling confused about waits, delays, and fades look at the following cuelist and then compare it with the diagram below to see how the cues will react.





Setting the Wait Time

The wait time can only be adjusted using the cuelist window. There are five options for a wait time:

Halt	Represented by an empty wait box; the cuelist stops executing cues and waits for **Go**.
Wait	The cuelist waits this time after starting the previous cue before starting this one.
Follow	The cue starts immediately after the previous one has ended.
Timecode	This is discussed in the MIDI and Timecode chapter.
Learn	The console monitors the go button for the cuelist and learns the timing based on the button pushes. This is discussed later in this chapter.

To change a wait time, select a cue's wait box using the cursor keys, and press **set**. To enter a standard wait time use the keypad to type the amount of time to wait and press **ENTER**. If the time is in minutes, press **Minutes** after typing the number, or press **Pig** and **.** Timecode can be entered by typing in a frame number, distinguished by using a **/** to indicate 00/00/01.00, hours/minutes/seconds.frames. Otherwise, pick one of the options from the toolbar at the top of the screen and press **ENTER**.

Changing Several Cues at Once.

You can select several cues to change at once. Move the cursor to the start cue, then hold **PIG** and use the cursor keys to move the entry box down several wait boxes. The wait boxes will turn dark grey showing your selection. Then press **set**, edit as desired and press **ENTER**. The edits will be applied to all the wait boxes you selected.

Setting the Fade and Delay times

Fade and delay times can be adjusted by selecting the appropriate boxes, pressing **set**, and typing in a new time. Again, several cues can be adjusted at once by selecting several boxes together. Times can have up to two decimal points of precision.

Timing values that are entered in the cuelist window are applied to all parameters of the recorded fixtures. It is not possible to assign multi-part cue timings in this window, and it is not possible to edit multi-part cue timings in this window. If a multi-part cue time exists, and you enter a new value in the cuelist window, your multi-part timing structure will be lost.

To edit a multi-part cue timing, the cue must be loaded back into the programmer to modify the timing using the Time Window.

It's also possible to enter split fade or delay times (and split paths) to give different values to the fixtures whose intensities are coming up or going out in a cue. Use the **/** to enter a split time. For example, entering 2/3 in the fade window gives a 2 second fade to the fixtures going up (the "in" time) time and a 3 second fade to those going out (the "out" time).

Learn Timing

You can automatically set up cue wait times by using the **Learn** function. While this function is turned on, every time you press the master's **Go**, the console will store the correct wait time for the cues in the currently selected cuelist. If Timecode is running, it will store the current Timecode frame instead.

The Learn Timing function only over-rides empty (ie. Halt) wait boxes. It will not replace a pre-existing wait setting.

To use the Learn Timing function,

1. Open the relevant cuelist window by holding **Pig** and pressing the **Select** button on the master.
2. Press **Learn** from the toolbar.
3. Now press the **Go** button as if you were running your show. The console will automatically note the times between your **Go** button presses and insert them into your cuelist as Wait times.
4. When you are finished, remember to press **Learn** again to de-select the function and stop the console from inserting wait times.

Special Cues

Insert Mark

A mark cue is a setup cue for your cuelist. It takes all of the information from the cue following the mark cue and executes it as a follow on cue immediately after the previous cue for the fixtures that are at 0% intensity.

For example

Cue 1 fades up your fixture on the drum riser in white.

Cue 2 fades the fixture's intensities to 0%.

Cue 3 fades the fixtures up in the keyboard position, and also in red.

When you run these cues in the your cuelist, cue 1 will execute normally, cue 2 will fade the fixtures leaving them in the same position. But when you run cue 3 you will see the fixtures move and change colour as the intensity fades up.

To avoid seeing all of the movement and colour changes, you should insert a mark cue:

1. Select cue 3 by holding down the **choose** button and pressing the **Go** or **Halt** buttons to move the **>>** to point to the cue.
2. Press **Mark Q**.
3. You will see a point cue appear between cues 2 and 3.
4. Run the cues again.

This time you will notice that when you execute cue 3 the fixtures are already in the correct colour and position, and so all that cue 3 now executes is the fixtures intensity.

If the original cue changes, the mark changes automatically. Pressing **Mark Q** inserts a mark cue in front of the *current* cue – the one with **>>** in the wait box. Mark cues only preset fixtures that are at 0% intensity.

Insert Link

There are two ways in which Link cues can work, they can either jump forwards, or backwards, within a cuelist and are used to create loops, or to interrupt the normal flow of a cuelist by jumping to a different point. Note that the cuelist loops back to the first cue by default, so that there is no need to add a link back to 1 at the end of a cuelist.

Pressing **Link Q** inserts a link cue after the *current* cue – the one with **>>** ion the wait box. The fade time and delay time columns change to **Cue** and **Count**. In the **cue** box, enter the cue number that you wish to link to.

If you are using a Link cue to jump forwards in a cuelist, then this is all you need to do. No information needs to be entered into the **count** box.

If you are using a Link cue to link backwards in a cuelist, and therefore create a loop within your list then you have some extra options, using the **count** box.

The count column is used to enter the number of times that you wish to perform the link operation. Entering zero will leave the field blank, which means that the link (or loop) will run continuously until interrupted by a press of the **Go** button.

To edit the value of the **count** box and specify your loop of cues to link around a particular number of times:

1. Move the cursor to the **count** box on the cuelist screen.
2. Press **Set**, allowing you to edit the value within the box.
3. Type in a number from the keypad and press **Enter**.

To decide on the number that you enter in the box, it should be remembered that the value represents the number of times that the link cue executes, so if you want your loop to run four times, you should enter a value of three in the **count** box.

It is also possible to enter a definite amount of time in the count box, as opposed to a definite number of loops. To do this, follow the same procedure as above but when entering a value, type in the number of seconds followed by **.0** Adding these values allows the console to determine between values in seconds and values for loops. Time values within the count box can go up to two decimal points e.g. 12.86 seconds. If you wish to use minutes rather than seconds, enter the time as described above and hold **Pig** and press **.** to indicate that minutes are to be used.

Pressing **Go** during a loop will immediately jump to the first cue after the link cue and continue execution from there.

A link cue has its own wait time. When a link is taken, the console uses that wait time instead of the wait time of the cue that it's linking to.

Macros

Full macro capabilities have not yet been included in the ECHELON Software; however some functions are currently available in the meantime for triggering the **Go**, **Halt**, and **Release** buttons for other masters, as well as changing page.

The macro commands are typed into the comments box of a cue using Set. The comment box is the far right hand column for a cue in the cuelist window. They execute when the cue starts. If you don't have a cue at an appropriate point, record a blank cue.

The available commands are:

G	**Go**, use this by specifying G and the number of the master which you wish to press the Go button for, eg. **G2** to Go the second Master.
S	**Halt** (**S** is for stop), eg. **S2** to Halt the second Master.
R	**Release**, eg. **R4** to Release Master 4.
P	**Page** (Use the page numbers shown in the page window), eg. **P12.1** to change to Page 12.1.
T	GoTo cue, **T** followed by a decimal number does a "goto cue#" on the currently selected master. E.g. **T3.2** will goto cue 3.2 on the currently selected master.
C	Select master, **c** followed by the master number selects that master to be the current master, e.g. **C5** to select master 5.

To distinguish the macro from a normal comment, it is preceded by **>**. Multiple macro commands can be separated on the same line by **:**. A range can be triggered using **>**.

For example, **>G2:G4>G7** triggers **Go** buttons on Playback Masters 2 and 4 through 7.

Cuelist Contents Window

It is only possible to view this screen if you have an external monitor connected to your Echelon. To view this screen, press **setup** and then press **Content** on the lower toolbar to open the cuelist contents window for the selected cuelist (alternatively hold **setup** and press **4**):

This window shows what is programmed in the current cue of a cuelist. If you use **Go** or **Halt** to move up or down the cuelist, the window will change to show the new current cue. You can use the <<, >> screen buttons to over-ride this and look at another cue without changing cuelist position. Access them and the other screen buttons by pressing **Pig** and numbers **1** through **8** on the keypad respective to the buttons being numbered from left to right as you look at the screen. To view a specific cue, make sure the console is in monitor mode (The red led in the **Monitor** button is lit and the header bar on the external monitor is blue) and press **Set**. Type in the cue number and press **Enter**.

Alternatively, if you have a mouse or trackball connected to the console, you may use the mouse pointer to click on the buttons on the external monitor. The mouse/trackball MUST NOT be in PAN/TILT mode for this function to work.

Only programmed values are actually shown in the display, and they are displayed in different colours:

Black Programmed in the displayed cue but unchanged from previous cues.
Red Parameters changed from the previous cue; Intensity levels going up.
Green Intensity levels going down from the previous cue
White The level was programmed in a previous cue, and is not changed in this cue

In addition, the programmer contents overlay themselves over this window to aid programming:

White fixture number The fixture is selected in the programmer

Blue background The level is set in the programmer

Selecting the **Hide Prog** button with the mouse/trackball pointer or by pressing **Pig** and **8** on the keypad, will hide the values in the programmer that have a blue background and display the contents of the cue in the text colour to suit the conditions of that value. Fixtures in the programmer will still have the white background behind the fixture number.

Other Cuelist Window Functions

Cuelist Options

The button opens the Cuelist Options window, which is described in the Playback chapter of this manual.

Follow

On the cue list menu bar you'll find **Follow** which toggles in and out of "screen lock" mode like on a PC. With Follow selected, the cuelist window holds the current cue in the middle of the screen as you go

through the cue list. With Follow de-selected, you are free to page up and page down through the cuelist window as you wish.

Unblock

Use **Unblock** to eliminate hard commands (programmed parameters that are the same in a previous cue) from cues.

1. Press **Unblock** from the cuelist toolbar.
2. Select the cues to unblock.
3. Press **ENTER**.

Renumber

Pressing **Renumber** in the bottom cuelist toolbar renumbers the subsequently selected cues.

1. Press **Renumber** from the cuelist toolbar.
2. Select the cues to renumber.
3. Press **ENTER**.

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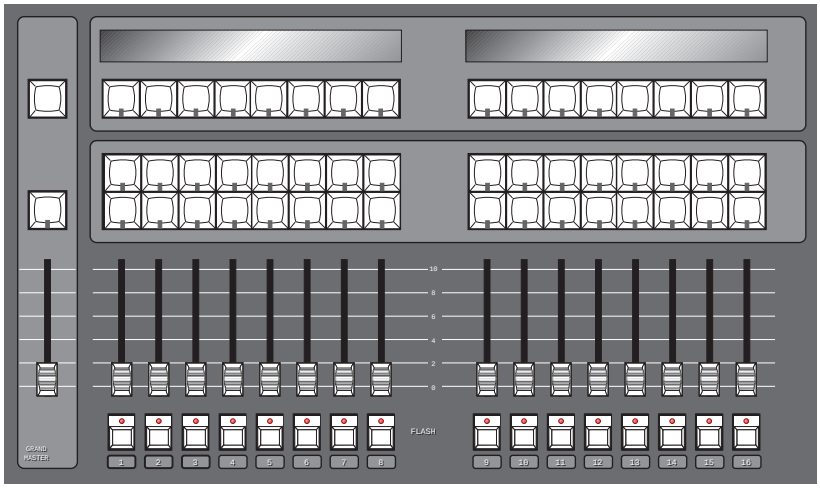
Playback

The ECHELON is designed for maximum playback flexibility:

- Cuelists provide powerful timed playback for theatrical shows. They can be fully integrated with Timecode inputs from MIDI, triggered via MIDI show control, or MIDI notes.
- Masters running independent cuelists can be operated simultaneously to control unstructured shows.
- Immediate access to fixtures via the programmer, or to looks and chases via masters.
- An instant and crossfading page changing system simplifies page changing down to one button push, and allows set list changes at the last minute.



Masters

The Masters are the bank of faders and buttons located to the left of the programmer. Each Master has the power to control a complete cuelist, a single chase, or a single cue; all of them can be run simultaneously or in any combination.

Each Master includes four buttons and a fader. They are, from top to bottom:

Choose Used to select the master during programmer mode, and to set the master as *selected*. The selected master is the master that is controlled by the Central Controls. It is also the master that is the default destination for programming operations, e.g. **Record, Copy,** etc.

Go Press **Go** to start a cue fading and start the cuelist executing cues (running). If the cuelist is already running, press it to skip cues or to exit from loops.

Halt Instantly halts any crossfading cues, and stops the cuelist from running. Pressing **Go** will resume fading and execution of cues. Once a cuelist has been stopped, after an initial **Halt** button press, pressing **Halt** again fades backwards through the cuelist.

Fader Fades the cuelist's intensity. You can configure the cuelist so that its intensity is controlled in an HTP or LTP fashion. You may also assign the fader as an ICBF fader which controls all parameters rather than just the Intensity parameter.

Flash Bumps the cuelist's intensity to full. You can configure the cuelist so that its intensity is controlled in an HTP or LTP fashion.

Alternate Actions

Holding down the **choose** button while using a Master's controls will give different actions:

choose + Go Step to the next cue without fading and without starting the cuelist running.

choose + Halt Step back to the previous cue without fading and without starting the cuelist running.

choose + Flash Activates the master. This is like pressing **Go**, but the cuelist does not start executing cues, and stays on the same cue. Use it to reassert a master that's been over-ridden.

choose + **Fader** Manually crossfades all the cuelist's programmed parameters.

Other Playback Controls

Grand Master

The Grand Master is the overall intensity control for the entire console. Most often, it's simply left at full. Only intensity parameters are controlled by the Grand Master; it has no impact on colour, beam, or focus parameters.

DBO

This button sits above the Grand Master and stands for Dead Black Out. When pressed, it immediately brings all intensity levels to 0%, where they'll remain as long as the button is held down.

Release **DBO** to immediately restore light to the stage.

Note that any changes caused by the Grand Master fader or DBO button are NOT reflected in the Stage Output display intentionally. If the display changed then you would have no reference as to what would happen when you restore the console to 100% output.

Turning Off a Fader—Releasing

Pulling down a fader only forces programmed intensities to 0%, all the other parameters of a fixture will remain active. To release *all* parameters of any particular master so that they have no effect on the output, select the cuelist master, by pressing its' **choose** button and then press **Release**.

To release all faders at once, press **PIG** plus **Release**.

Goto

To jump straight to a cue, and start the cuelist running on the currently selected master:

1. Press **Goto** button (located on the Right Hand Side of the Main Display).
2. Enter the cue number to jump to, say **45**.
3. Press **ENTER** to execute a fade to the destination. The console will use the time of the incoming cue.

Manual Crossfades between Masters

To crossfade between several masters:

1. Make sure that the incoming master's fader is at 0%. Hold down the **choose** button of the incoming master.
2. Pull down the faders of the outgoing masters. At this point, NO fades will occur.
3. Move up the incoming master's fader. This will now perform the crossfade between the outgoing masters and the incoming master.

Note: This will not work if any of the faders are set as ICBF faders.

Over-riding Programmed Timing

All programmed timing throughout the console can be manually over-ridden using the Rate Thruster. This is a console-wide rate control accessed by holding down any **choose** button and turning the right parameter wheel (Rate Thruster). With the Rate Thruster set at 100% all of the cues within the console will run exactly at their programmed time. The rate shown is expressed as a per cent; thus, 200% means that all times will be twice as long as what their programmed value, and 50% means that all times will be half as long, although all times will be adjusted proportionately As the Rate Thruster can be accessed from any choose button, it is possible to edit the value using one choose button and then adjust it back again using another choose button, even if it's on a different page..

There is also manual over-ride for individual playback masters. Hold down the master's **choose** button, and turn the left parameter wheel (Rate Override) to adjust a single cuelist's timing rate.

Master Precedence

Because the console can simultaneously run sixteen separate cuelists, there is possible conflict over which master actually has control of a parameter. In order to decide which master has control, the console applies the following rules:

For focus, colour and beam parameters:

- The console uses Latest Takes Precedence (LTP). This means, the most recently activated masters will override earlier masters. (Note: Only the specific conflicting parameters are over-ridden; non conflicting parameters on the earlier masters will be left untouched.)
- Releasing overriding masters will return the overridden parameters back to the control of the old masters.
- Masters which are fully over-ridden (ie., all programmed parameters have been overridden by other masters) are released automatically. This is called stomping.
- The Programmer always has priority over the Playback Masters. (Remember, you can press **Blind** to suspend Programmer output).

For intensity parameters:

- By default these are also controlled by LTP, but you can set cuelist options to make a master work in a Highest Takes Precedence (HTP) fashion. In this case the console will output, for a particular intensity channel, the highest programmed value of all the HTP masters and the highest priority LTP master.

Cuelist options exist for fully customising the priority scheme for a cuelist. See the Cuelist Options section of this chapter for more information.

What is an Active Master?

An active Master is a master that has had **Go** pushed, has been manually faded up, or has been activated using **choose** + **Flash**.

Masters, once activated, remain active until they are either fully over-ridden and thus stomped (automatically released), or they are manually released. Partially over-ridden masters are still active, and thus still control the remaining, non-over-ridden parameters. Cuelist options exists for customising this.

Playback Master LEDs

The Masters' LEDs give feedback as to the active and over-ride status of a master.

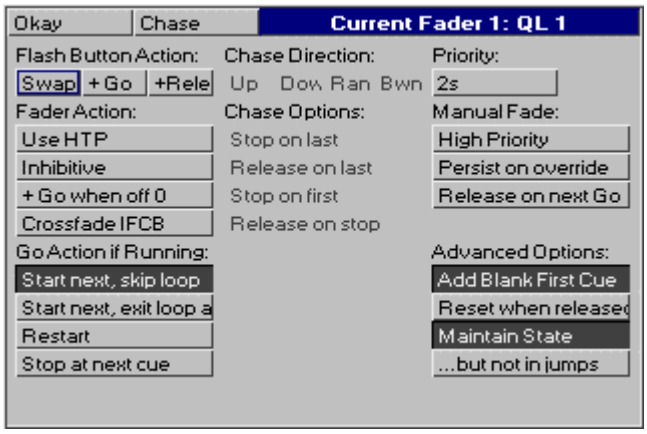
LED	*Solid*	*Flashing*
Go	Executing Crossfade	Crossfading, but fully over-ridden
Halt	Controlling Colour, Beam or Focus Parameters	All CBF over-ridden, or no CBF
Flash	Controlling Intensity	All I over-ridden, or no I

Default Values

When no playback masters are active, and nothing is selected in the Programmer, the console will output the default values for each parameter of every fixture. These values may be modified in the fixture library of each individual fixture.

Customising Playback with Cuelist Options

Hold **Pig** and press a **choose** button to open the cuelist window for that master. Press **Options** on the cuelist toolbar to customise the response of a Playback Master. Chase options are covered separately in the Chase section.



All these options are stored in the cuelist. If you change to a different cuelist (by changing page, for example), the option settings may change and the Master will behave differently.

Flash Button Action

Flash buttons are the buttons found below the row of faders, and are useful for bumping Intensity on and off. They can also be set up to operate one of the following ways:

`Swap` Pressing one Flash button turns the others off. Normally, Flash button presses are additive.

`+Go` Pressing the flash button will also press **Go**.

`+Release` Pressing the flash button will also release the cuelist.

Fader Action

Faders are used for controlling Intensity levels. Intensity from different masters is combined together according to the options set for each cuelist:

`Use HTP` Sets intensities to Highest Takes Precedence. (Normal operation is Latest Takes Precedence).

`Inhibitive` This function not yet implemented.

`+Go when off 0` **Go** is also pressed automatically as soon as the fader is moved from zero.

`Crossfade IFCB` Sets fader to control all parameters (ICBF) within the cuelist.

Go Action if Running

These options determine what happens when the **Go** button is pressed while a cuelist is already executing cues.

`Start next, skip loop` Starts next cue immediately. Or, if the cuelist is in the middle of a loop, it goes immediately to the first step after the loop.

`Start next, skip loop at end` Starts next cue immediately. Or, if the cuelist is in the middle of a loop, it completes the loop before moving on.

`Restart` Restarts the cuelist at the first cue when **Go** is pressed.

`Stop at next cue` Finishes fading the current cue, and stops at the next cue. In contrast, **Halt** freezes the current cue instantly.

Manual Fade

This is the fade time used by the cuelist for all manual operator activity, namely

- Releasing.
- Jumping to different parts of the cuelist using **Goto**.
- Using **Halt** to go backwards.

This fade time is also used for fading operations where no other appropriate time exists, namely fades for jumping inside a cuelist, where the parameters are not in the immediate next cue (i.e. the fade time used for resetting the ‘state’).

Priority

Latest Takes Precedence cuelists can be prioritised manually to prevent certain masters overrinding others. If there is a conflict between two cuelists sharing the same priority level, then normal LTP rules apply.

`High Priority` For high priority. Use this to make sure that something won’t get overridden..

Release on next Go For low priority. The cuelist releases automatically when another fader is activated, even if not fully overridden.

In normal operation, the console automatically releases masters that have been fully overridden (a process called 'stomping'). This is to make it easier for you to see what is actually active. However, in certain circumstances this is inconvenient, so it is possible to prevent this from occurring.

Persist on override Prevents the cuelist from getting stomped. This way, you can return to looks on this master when other masters are released.

Advanced Options

Further options designed to get the cuelist to respond the way you would like.

Add blank 1st cue Inserts an empty cue at the start of the cue list, as a safe place for the cuelist to rest before starting, or after the last cue in the list has been executed. This is useful when you want to start with the first cue, but don't want to have to release the master to do so. This function is turned on automatically when timecode is used.

Reset when released Resets the cuelist to the first cue when released. Normally, the cuelist will remain on the current cue, and will restart there if you press go again.

Maintain state The cuelist automatically outputs the cumulative effect of all its cues (the state), even though only changes are recorded in cues. If this option is not selected, then only the information specifically programmed in each cue will be output when that cue is active.

but not in jumps If **Goto** or a link cue is used to jump to a new cue, the state will not be recalculated to reflect the programming in the jumped cues.

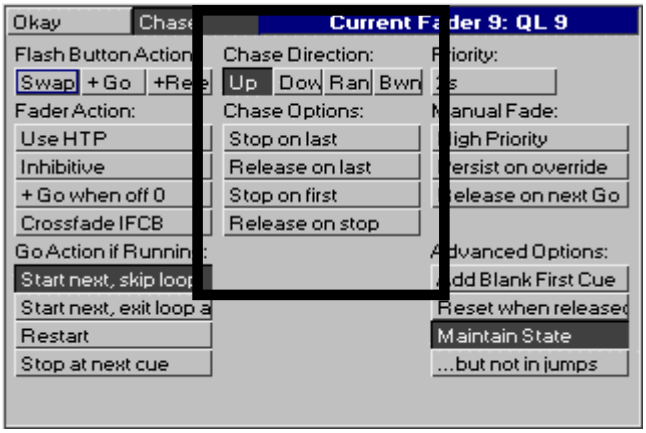
All these options are stored in the cuelist. If you change to a different cuelist (by changing page, for example), the options may change and the Master will behave accordingly.

Chases

Chases are nothing more than cuelists with the timing overridden. Each step of the chase is a cue in the cuelist.

To create a chase:

1. Record a series of steps just like you would to create a cue list.
2. Open the cue list **Options** window on the cuelist toolbar. (Hold **Pig** and press **choose** button, then press **Options** on the toolbar)
3. Press **Chase**. Your cuelist has now been turned into a chase.



Chase Timing

A chase plays back its steps (cues) using beats per minute (BPM) to control the rate, and crossfade % to control the amount of fade between steps.

There is no upper limit on rate nor crossfade %. A crossfade of 0% means that the chase will snap change. A crossfade of 100% means that the chase will fade smoothly from step to step, with no intervening

stationary time. A crossfade of 200% means that only half the crossfade will be completed before moving onto the next step.

To adjust rate and crossfade:

1. Hold down the master's **choose** button. The parameter wheel display will change to show **Rate** and **Fade %** (the right wheel becomes the *rate thruster*, a console-wide rate control).
2. Adjust the left (Rate in Beats Per Minute) and centre (Crossfade in %) parameter wheels.
3. When you are happy, just let go of the **choose** button and the settings that you have made will be stored automatically. You need press no other buttons. If you wish to re-adjust the values at any time, just hold the **choose** button down and adjust the values as before.

Cues inside a chase do not have to have simple default fade and delay times. You can adjust them parameter by parameter as though they were a normal cue.

Chase settings

In the *options window*, you can select the chase direction:

Up	The chase runs from the first to the last step.
Down	(Down) The chase runs from the last to the first step.
Ran	(Random) The chase randomly picks the next step.
Bwn	(Bounce) The chase runs from the first step to the last, then back to the first, etc.

Normally the chase loops continuously. To change this:

Stop on last:	Executes the chase once and then stops.
Release on last:	Runs the chase once and then automatically releases it upon completion.
Stop on first:	Runs the chase once and then returns to step one and stops.
Release on stop:	Releases the chase when **Halt** is pressed.

Saving and Merging Shows

Often you will want to store your show onto floppy disk. In addition, you may want to merge old programming from earlier shows into your current shows. Or, if you have been programming a show with a colleague on a separate console, you may want to combine the two shows together for playback on one console.

This chapter explains how to use floppy disks to do these things.

Saving a Show

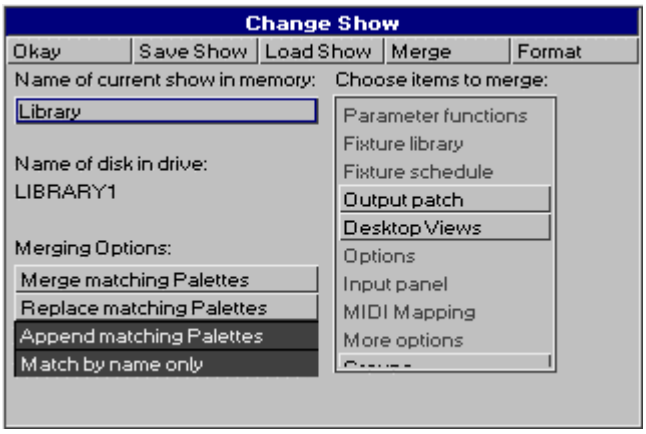
To save a show:

1. Press **setup**. You will see the usual setup toolbar.
2. Insert a standard 1.44 MB 3 1/2 floppy disk into the disk drive in the front edge. The disk need not be formatted.
3. Press **Save Show**.
4. Press **Okay** to confirm the save. A progress window will open and list the items it's saving as it goes along. **Save finished okay** appears when everything has been copied to the disk. If your show is larger than can be stored on one floppy disk, you may have to delete unused cues/lists in order to save it.
5. Press **Okay** to finish .

Change Show Window

More advanced floppy disk functions are accessed through the **Shows** window, opened from the **setup** toolbar.

When you open the window, it automatically tries to read the catalogue information off a disk in the disk drive. If none is present, you will get an error message. This can be ignored safely. It is okay to open the window without a disk in the drive.



Changing to a Different Show

If you change to a different show, make sure that you have saved your current show, since you will lose all of its programming.

To load a different show from floppy, insert the show disk and press **Load Show**. The console will ask you to confirm that it is **okay** to lose the current show. Then a progress window will open that lists each item as it is loaded. **Load Finished Okay** appears when everything has been loaded successfully. Press **Okay** to return to the shows window. Press **Okay** to exit shows window.

Naming a Show

To avoid mixing up disks and accidentally overwriting a different show, give your show a name before saving it.

To name a show, use the cursor keys to select the box labelled "Name of current show in memory", and press **Set** and type in a name.

The floppy disks on which the shows are saved are labelled with this name plus a number. The number refers to the disk number. 1 for Disk 1, 2 for Disk 2, etc. If you ever need to change a disk's label (such as when using a show downloaded from the Internet) , use a Windows PC (File Manager, Windows Explorer), or DOS (label a:), or a Mac.

Format

To format a disk, insert it into the drive and press **`Format`** followed by **`Okay`**.

It's a good idea to periodically reformat your disks. Disks can periodically develop bad sectors; reformatting can spot this and prevent you from losing data.

Merging Shows

Using the Change Show window, you can select items from a different show and merge them into your current show.

To merge items into your new show

1. Insert the floppy containing the show you are merging ***from*** into the disk drive.
2. Open the **`Shows`** window. If you do this before inserting a disk, the Change Show window will not show what is in your disk, so it will not be possible to pick items for merging.
3. Pick items for merging from the merge list below the toolbar by selecting them with **ENTER**. Note: the palettes will be selected automatically as soon as you pick something that depends on them.
4. Press **`Merge`**. A progress window will open to show you the progress of the merge.

If you merge in a cuelist, but don't merge in associated palettes, you have to make absolutely sure that the cuelist has been programmed using the palettes that are already programmed in the machine. If the console cannot find a palette when it merges in a cuelist, it will ignore all programming associated with that palette.

There are four options for merging palettes:

`Merge matching palettes`
Information from the palette on disk and the palette in memory is merged together. The palette information from disk takes precedence if they clash.

`Replace matching palettes`
Information for the palette in memory is completely erased, and the information from the palette on disk is put in its place.

`Append matching palettes`
The palette on disk is appended at the end of the palette directory. The existing palette in memory is left untouched.

`Match by name only`
Normally, palettes are matched on the basis of their names. So if a palette in the show on disk has the same name as a palette in the show in memory, they will be matched together.

Obviously this won't work if you have different palettes in the same show with the same name (e.g. two palettes called "red"). If this is the case, you can try turning off the option "Match by name only". The console will then match palettes if they have the same name AND they both came from the original show – ie a show which was saved onto two disks,

then each disk was loaded, edited and saved seperately, and now the two are being merged back together again.

Don't turn off "Match by name only" if you are trying to merge palettes that come from different shows.

If you merge in a cuelist, but don't merge in associated palettes, you have to make absolutely sure that the cuelist has been programmed using the palettes that are already programmed in the machine. If the console cannot find a palette when it merges in a cuelist, it will ignore all programming associated with that palette.

How to Combine a Show That Has Been Programmed on Two Consoles

There are two approaches:

- Split the programming into fixtures. e.g. one console does dimmers, while the other does cyberlights. To merge, save the cyberlights component to disk, add the cyberlights to the dimmer console's schedule, then merge all the Cyberlight palettes, cuelists, and pages into the dimmer console.
- Split the programming between cuelists. For this to work, each console must start with the same setup *and pallettes*. This is best done by setting up and making palettes on one console, then saving to disk and loading onto the other console. From then on, parallel programming of cues and cuelists can occur. When you come to merge back into one console, just select cuelists to merge. Do not merge the palettes back, since you will end up duplicating existing palettes, with some cuelists using one set, and the merged cuelists using the other.

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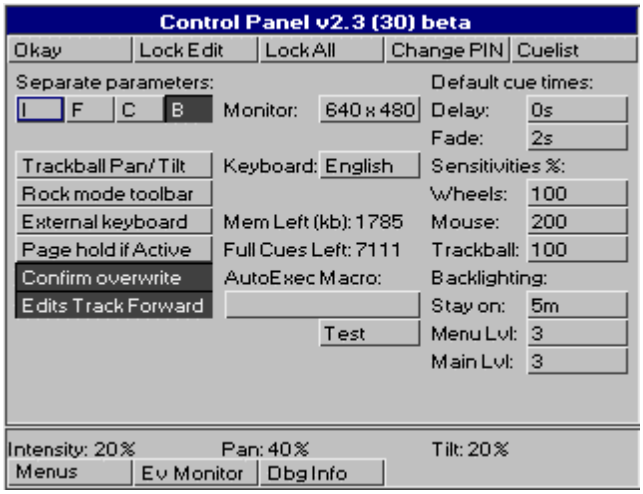
Customising the Console

The ECHELON's settings can be customised to fit your requirements. This customisation is done using the Control Panel window.



To open the Control Panel window, press **setup** followed by **Panel**.

Programming and Playback Defaults and Settings

Separate parameters

The ECHELON treats certain parameters as a group; for example, it normally makes sense to record colour mixing parameters (Cyan, Magenta, and Yellow) as a group. However, many times you don't want a parameter such as Beam recorded as a group. If it were, you couldn't have a gobo chase operating simultaneously with an iris chase. The default is Beam parameters recorded independently, and others grouped. To change the way in which the parameters are recorded, use the cursor keys and Enter key to select/deselect the relevant parameters. (Dark grey background indicates that the parameters are to be recorded seperately.)

Trackball Pan/Tilt

Allows a mouse or trackball to set pan and tilt values without having to press **position** and use the parameter wheels. You cannot use the on screen mouse with this option.

Rock mode toolbar

Toggles between the normal mode and the "rock" mode toolbars, replacing **+10%** and **–10%** with **Odd** and **Even** .

External keyboard

If you've plugged in a keyboard, use this button to prevent the internal keyboard from popping up and allow the external keyboard to be used.

Page Hold if Active

This option lets you hold over active cuelists during a page change to the a new page without having to hold down the **choose** button.

Confirm Overwrite

This option presents a confirmation dialog box (**Insert**, **Replace**, **Merge**) when a cue is about to be overwritten.

Edits Track Forward

This option sets the default for tracking of cues through subsequent cues. With **Edits Track Forward** on, a cue will track its changes through the subsequent cues until there is a change programmed. This is the normal programming mode. With **Edits Track Forward** off, (also known as "Q only" mode) all edits to cues will remain until the cue finishes, at which point the changes are undone in the next cue.

Monitor

Lets you choose the resolution of the monitor you have plugged in. Press **Enter** and use the cursor keys to set the resolution via the

	drop down pick box. Press **Enter** to accept your selection. You can choose between (None, 640 x 480, 800 x 600, and 1024 x 768)
Keyboard	Lets you select the language to match your keyboard layout.
Mem Left (kb)	Tells you how much free memory is left in the console.
Full Cues Left	This will give you an idea of how many full cues can be stored in the remaining free memory. Note: a full cue is a cue with all channels programmed – much larger than a typical cue – so the full cue number will always understate the number of cues left.
AutoExec Macro	This is a "comment macro" style sequence of commands. This will be executed after warm starts and show loads. Note: The autoexec macro should NOT have a '**>**' character at the start.
Test	Allows you to test the **AutoExec Macro**.
Default Fade & Delay times	Unless you enter a different time while programming, all cues will automatically use these times.
Wheels %	This sets the speed of the parameter wheels. At 50%, the wheel changes parameters at half the normal rate. At 200% the wheel changes parameters at twice the normal rate.
Mouse %	This sets the speed of the mouse. At 50% the mouse changes parameters at half the normal rate. At 200% the mouse changes parameters at twice the normal rate.
Trackball %	This sets the speed of the external trackball . At 50% the changes parameters at half the normal rate. At 200% the trackball changes parameters at twice the normal rate.
Stay on	Set the time after which the backlighting turns off if the console hasn't been used. If you use 0, they will never turn off. To specify minutes, and an **m** using **Pig** and '**.**'.
Menu Lvl	Sets the backlight level for the menu palette LCDs. Levels range from 0 (off) to 3 (full).
Main Lvl	Sets the backlight level for the main LCD. Levels range from 0 (off) to 3 (full).

Hardware Control

Setting the LCD Contrast

To set the contrast on the LCD screens, hold down **setup** and move the centre parameter wheel to adjust the main display, and the right wheel to adjust the menu and playback displays.

Controlling the LCD Backlighting

To set the brightness of the LCD screens, go to the Control Panel window (press **setup** then **panel**), and move the cursor to Menu Lvl (to adjust the menu palette LCD brightness) or Mani Lvl (to adjust the main LCD brightness). Enter the brightness level (0 to 3) or rotate the left parameter wheel to change the value. Unfortunately, the backlighting on the LCDs will not last forever and will die out after a certain amount of use. If the LCD screen is dark, and setting the contrast makes no difference, the backlighting has expired and needs to be replaced. Contact your local dealer.

To make the backlighting last as long as possible, you can set them to turn off when the console is on but hasn't been used for sometime. This is done by setting the "**Stay on**" time . Think of this like a screen saver on a PC.

Stay on:	Set the time after which the backlighting turns off if the console hasn't been used. If you use 0, they will never turn off. To specify minutes, add an **m** using **PIG** + **.** .

To restore the backlighting once it has turned off, press any button on the console. **PIG** is a good one if you don't want anything else to happen.

External Keyboard and Trackball/Mouse Options

The console can use any IBM-AT keyboard and microsoft compatible Trackball/Mouse.

External keyboard	If you've plugged in a keyboard, use this button to prevent the internal keyboard from popping up.

Keyboard	Set your keyboard to the correct country configuration, as well as to select whether or not you will be using an external or internal keyboard.
Trackball Pan/Tilt	Allows a mouse or trackball to set pan and tilt values without having to press **position** and use the parameter wheels. You cannot use the on screen mouse with this option turned on..

Console Locking

There are two locking options: **Lock Edit** which just locks the programming and editing functions, and **Lock All**, which locks everything.

To lock the console:

1. Press **Lock Edit** or **Lock All**
2. A prompt will appear asking you for your PIN (personal identification number)
3. Press **ENTER** to lock

With **Lock Edit**, the menu button will be dark to indicate that the lock is on. To unlock, press **Lock Edit** again and enter your PIN.

With **Lock All**, a warning window will appear indicating that the console is locked. There is an entry box for entering your PIN to unlock.

The default PIN number is 54.

To change this, press **Change PIN**.

Once the console is locked, there is no way to get back in to your show without knowing the PIN number. If you've locked yourself out, try resetting the console and reload the last saved version of your show.

If you use the locking feature, make sure you remember your number. There's no way to access your show otherwise.

Cuelist

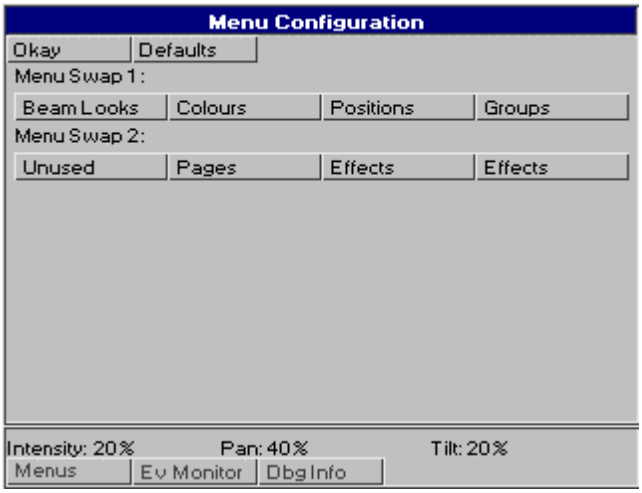
To change the default settings used for cuelists:

1. Press **Cuelist**.
2. Adjust settings as desired using cursor keys and press **ENTER**.
3. Press **Okay**.

Note: When you change the cuelist defaults, only those cuelists created after the change will be affected.

Menus

Because different console operators have different preferences with regard to the panel layout, it is possible to arrange the menu palettes in any order you like.



To change the default settings used for menu palettes:

1. From the Control Panel Window, press **`Menus`** on the bottom toolbar to open the Menu Configuration window.
2. Use the cursor keys and **Set** to select the palettes to change.
3. Use the cursor keys and **Enter** to select the desired palette type from the drop down pick box.
4. Repeat steps 2 and 3 until menus are set up as desired.
5. Press **`Okay`** when finished.

To reset the palette menus back to normal, press **`Default`** in the Menu Configuration Window.

Event Monitor

The Event Monitor is used to trouble shoot the console. It is accessed from the Control Panel Window by pressing **`Ev Monitor`** on the bottom toolbar. Pressing a button on the console or external keyboard, moving a fader, parameter wheel or the mouse trackball. To exit you hold down the **Pig** key and press **Enter** to exit the event monitor.

If you suspect that a fader or button is not working on the console, you can use the event monitor to accurately determine what works and what doesn't by looking at the information shown on the main LCD.

Debug Information

This function is for Software Development purposes and will not generally be used. It is accessed by pressing Dbg Info in the Control Panel Window. The only time when you may need to use it are if instructed to do so by a technician when trying to find and solve console problems over the phone.

Updating Software

Although future software versions will be loaded in the Control Panel, for the time being it must be done differently.

The quickest way to upgrade your ECHELON is through the Internet; to access the Jands page on the World Wide Web, use http://www.jands.com.au. Select the ECHELON page, then choose Download New Software. Transfer the new files to an IBM-formatted floppy diskette. (If you choose the zipped versions, you'll need to unzip it first.)

Loading these upgrades is simple:

1. Insert the new disk into the disk drive.
2. Hold down the **ENTER** key on the keypad
3. Turn on the console power.
4. When the menu appears on the screen, press **2**, **`Reload SW`**.

Be careful when loading new software in the middle of a show's run. In general, if you have a show that works and don't need any of the new software's features, then leave things as they are. Even though we go to great lengths to test new software, a bug might get accidentally introduced.

Memory Control

Before performing an operation, the console checks to see if it has enough memory. If memory is running low, it will give an alert saying **`Not enough memory`**. In some instances, you may not have enough memory to save your show—in this situation, you will have to delete items until you have enough memory. In low memory situations, playback may also get disabled. User alerts will tell you when this has happened. Again, to restore playback, delete unessential programming.

To help prevent low memory situations, a memory counter in the control panel shows the total memory left. Also shown is the corresponding number of full cues you can program. Note: a full cue is a cue with all channels programmed—much larger than a typical cue—so the full cue number will always understate the number of cues left.

Custom Options

An options text file called "\setup\moreopts.txt" is now saved as part of the show. Edit it to change the more esoteric console options. Current options supported are:

`version = 28`	the format version of this file (don't change this).
`MIDI_step_back = 0`	set to 1 to enable MIDI output from cue comments on stepping back (default = 0).
`ignore_same_page = 0`	set to 1 to prevent a page reload if you change to the page that you are already on (default = 0).
`release_needs_choose = 0`	Set to 1 only allows Release to work in combination with Choose or Pig. Set to 0 allows Release to work as normal, on its own or in conjunction with Choose or Pig. (default = 0)
`delay_before_repeat = 20`	Value in hundredth of a second. If you hold down the cursor and scroll keys, the keys will now repeat after the amount of time specified here. (default = 20)
`repeat_interval = 5`	Value in hundredth of a second. The repeat interval between automatic key repeats when holding down a cursor or scroll key. (default = 5)

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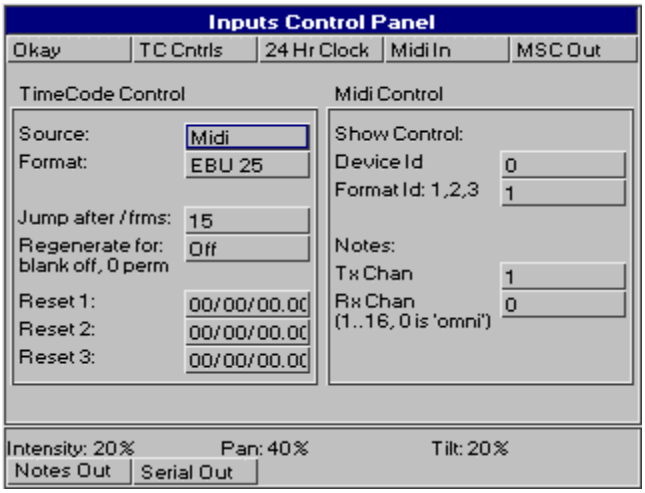
Console Inputs

This chapter covers the use of MIDI, and Timecode inputs. These features are accessed through the Inputs Control Panel window

To open the Inputs Control Panel window, press **setup** and **Inputs**.



MIDI Timecode

The ECHELON can only receive MIDI Timecode. It has programmable error correcting features. The console can also simulate Timecode to help with programming when the Timecode source is not ready.

Setting up the console to read Timecode

Before using Timecode, the console must be configured to accept Timecode:

1. Press **setup**.
2. Press **Inputs** to bring up the options window for Timecode input.
3. Connect the MIDI signal to the MIDI Input.
4. Move the selection box to **Source:** and press **Enter**. Now use the cursor keys and **Enter** to choose either **Midi** or **Simulate** from within the drop down pick box..
5. Move the selection box to **Format:** and press **Enter**. Now use the cursor keys and **Enter** to choose the type of input; **Film 24**, **EBU 25**, **NTSC 30** and **SMPTE 30**, from within the drop down pick box.
6. Press **TC Cntrls** on the top toolbar to open up the timecode control panel at the bottom of the screen. (This panel will remain open until you close it by pressing the **Okay** button on the bottom toolbar).
7. Press **Tcode On** to allow the console to simulate or read timecode from the MIDI in port. Pressing **Tcode On** a second time will turn this off again.

Timecode Error Correction

Entering a time in the **Regenerate for:** box turns on automatic generation of Timecode should the signal drop out. This will continue for the amount of time selected in the **Regenerate For:** box. If you enter 0, regeneration will be continuous. To turn automatic timecode regeneration off, set the value in the **Regenerate for:** box to a blank.

Bad Timecode tapes will have drop outs that look like Timecode jumps to the console. Increase the value in the **Jump after /frms:** entry box to reduce the sensitivity of the console to jumps in Timecode signal. (The default value is 15 frames).

Programming Timecode into Cuelists

Timecode functionality is built into the normal cue list timing structure (wait), making it very easy to run programmed cues to Timecode. Any cue list active on a master on the console can receive Timecode.

To setup a cuelist to use Timecode, program the cuelist as normal, but instead of using normal cue wait times, use Timecode frame numbers:

1. Select a cue wait box.
2. Press **set**.
3. Enter a Timecode number in the form hh/mm/ss.ff, e.g. 1/0/10.02, or 0/0.5 You need to use at least one slash **/** for the console to interpret it as a Timecode value.
4. Press **ENTER**. The console automatically turns on the **Add Blank First Cue** option when you use Timecode, to prevent the cuelist from wrapping around at the end.

You don't have to use Timecode frames for the waits of all the cues. You can mix them with normal wait times, follows and halts. This is useful to avoid having to synchronize every cue to frame times. Instead, the first cue can be synchronized, and then subsequent cues set with normal wait times relative to the first.

Loops can be triggered with Timecode, ***but do NOT put Timecode inside a loop***.

Instead of entering numbers by hand, it's possible to use the **Learn Timing** function (found in the current cuelist window) to enter them automatically, editing manually later for fine tuning. Simply turn on the function and press the **Go** button to signal when cues are meant to execute. Only cues set to Halt (Wait is blank) will receive values.

Playing back with Timecode

To playback cuelists under Timecode control.

1. Select Timecode **Source** as **Midi**.
2. Press **TC Cntrls**
3. Press **Tcode On** on the Timecode control panel (Bottom toolbar)
4. Start the tape running.
5. Press **Go** on the playback master. This is needed since the operator still has overall manual control.

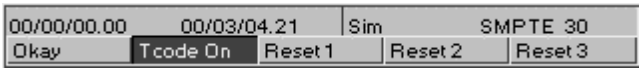
Cues will now be triggered by Timecode.

Rewinding

There is no need to do anything to the master when rewinding the tape. When you start playing Timecode again, all active masters will reposition their cuelists to the correct position in the cuelist.

Simulating Timecode

If you don't have a Timecode source available, you can simulate Timecode in order to test /run your show. From within the Input Panel Window, select the Timecode Source as **Simulate**. Open the Timecode Control panel by pressing **TC Cntrls**, and press **TCode On**. This will start simulating Timecode. To stop the Timecode, press **TCode On** again.



To reset the Timecode to one of three preset Reset values, Press either **Reset 1**, **Reset 2**, or **Reset 3** on the Timecode control panel (Lower toolbar).

To change the Timecode start frame, use the cursor keys and the keypad to alter the respective **Reset**: value. If Timecode was not running, start it pressing **TCode On**.

Cues will now be triggered by Timecode.

MIDI

MIDI Receive

The console can receive

- MIDI note data, such as from a MIDI keyboard, another ECHELON or a Whole Hog II.
- MIDI show control (MSC) messages, such as from a show control sequencer, or another console with MSC support.
- MIDI Timecode, such as from a Timecode converter box.

Any or all of these kinds of messages can be received simultaneously.

To turn on MIDI reception, press **`MIDI In`** (found in the Input Panel window.)

MIDI Transmit

The ECHELON can transmit

- MIDI note data (to send to a slave backup console, for instance). Press **`Notes Out`** to turn on.
- MIDI show control messages (to trigger other show control equipment). Press **`MSC Out`** to turn on.

MIDI Notes

To trigger the console from a piece of MIDI equipment

Select **`MIDI In`** from the Input Panel, and make sure that the console and the MIDI equipment agree on which channel is being used under **`Rx chan`** (setting the console to channel 0 puts it in 'omni' mode, so that it responds to all channels).

To trigger other MIDI equipment using the console

Select **`Notes Out`** from the Input Panel, and set the MIDI channel to the correct channel for the receiving equipment under **`Tx chan`**.

To setup another console as a tracking backup

Slave together two consoles as follows:

1. To make sure both start from the same point, reset both consoles and load the *identical* show onto both machines.
2. Open the Input Panel on both, and make sure that the two consoles agree on which MIDI channel is being used.
3. Select **`Notes Out`** from the Input Panel on the master console.
4. Select **`MIDI In`** on the slave console. It will now track the master console fully.

Changing the Notes messages

If your MIDI equipment does not use the same messages as the standard ECHELON set up, you can rearrange which notes messages get sent on which button press, fader move or wheel move.

By default, all console actions are mimicked using low MIDI note numbers and MIDI controllers. The MIDI mapping information is held in the file "setup\MIDImap.txt" on the show disk and you can edit this file on a PC.

Here is the default MIDImap.txt file from a ECHELON show disk:

```
version = 28
; NB: MIDI Note & Controller numbers range from 1 to 128
group_menu = note:1
position_menu = note:2
colour_menu = note:3
beam_menu = note:4
macro_menu = note:5
page_menu = note:6
choose = note:7
```

```
go = note:8
halt = note:9
flash = note:10
fader = note:11
rh_tool = note:12
lh_tool = note:13
keypad = note:14
wheel = note:15
touchpanel = note:16
others = note:17
coord_x = controller:1
coord_y = controller:2
fader_val = controller:65
wheel_val = controller:66
```

Example: “go = note:8”

This means that all go keys are transmitted as MIDI note # 8.

The note velocity is used to indicate which of the **go** buttons are being transmitted; e.g. if fader 3’s **go** button is pressed, a ‘note on’ event for note #8 with a velocity of 3 is transmitted. When the key is released, a ‘note off’ event for note #8, velocity 3 is transmitted.

If you wanted to send a particular **go** button over a unique note (and not use velocity to differentiate buttons) then you could add the line ‘go:3 = note:50’. In this case a ‘note on’ for note #50, velocity = 63 will be sent when the key is pressed, and a ‘note off’ for note #50, velocity = 0 will be sent when it is released. All other **go** keys will use the prior mapping, i.e. via note #8.

MIDI Map File Format

The console events that can generate MIDI and their map file name are listed below:

Whole Hog II	Echelon	JandsHog	Map file name
Choose buttons	Choose buttons	Select Buttons	choose
Go buttons	Go buttons	Go buttons	go
Halt buttons	Halt buttons	Halt buttons	halt
Flash buttons	Flash buttons	Flash buttons	flash
Faders	Faders	Faders	fader (preceded by value sent by fader_val)
Tool buttons above right hand lcd	Tool buttons	Tool buttons	rh_tool
Numeric keypad	Numeric keypad	Numeric keypad	keypad
Parameter wheels	Parameter wheels	Parameter wheels	wheel (preceded by value sent by wheel_val)
Next page button			next_page
DBO button			dbo
Release button			release
Step up			skip_up
Step down			skip_down
Main stop			main_stop
Main go			main_go
Tool buttons above left hand lcd			lh_tool
Touchpanels pressed			touchpanel (preceded by X and Y coords sent by coord_x, coord_y)
	Fourth Menu Palette	Group menu buttons	group_menu (for all menus, index 21 & 22 are the scrollup & down keys)
	Third Menu Palette	Position menu buttons	position_menu
	Second Menu Palette	Colour menu buttons	colour_menu
	First Menu Palette	Beam menu buttons	beam_menu
		Macro menu buttons	macro_menu
		Page menu buttons	page_menu
All other buttons		All other buttons	others
			The following are used to encode continuous values, and precede other messages as listed above:
			coord_x
			coord_y
			fader_val
			wheel_val

The possible MIDI messages that you can map to are:

Map file name	Index	Console events which can be mapped to the MIDI event
note	note number, e.g. ‘note:34’	All button events
polyatouch	note number, e.g. ‘polyatouch:34’	All button events
controller	controller number, i.e. 1 > 32 [14 bit] & 65>128 [7 bit]	Value events
progchange	program number	All button events
pitchwheel	none	Value events
chanatouch	none	Value events

Controllers 33 to 64 are the LSB parts of controllers 1 to 32, so are unavailable.

Console button events can only map to MIDI notes, polyphonic aftertouch and program change (note that faders are also button events as they refer to which fader was used, the actual values are sent separately).

Continuous values (like a fader position) can only be sent via a controller, pitch wheel or channel aftertouch. In addition, coord_x & coord_y must be mapped to a 14 bit controller, i.e. controller 1 to 32 or pitchwheel.

All console numbering starts at 1 rather than 0, e.g. use fader 1, not fader 0.

When several buttons are mapped to one note (e.g. choose = note:7) then the velocity data of the note is used to index the actual choose button being pressed.

Some keys cause events to occur when they are released as well as when they're pressed - if a single key is mapped to a note then the console will respond to either a note off or a zero velocity to release the key. If a key that needs a release message is mapped to a non-releasable MIDI event (like program change) then a warning will occur when the show disk is loaded.

MIDI Show Control Messages (MSC)

For a full description of how MIDI Show Control works, we recommend reading the latest MIDI Show Control Recommended Practice from the MIDI Association.

MSC messages contain a device ID and a format number. Make sure that you setup these numbers in the window entry boxes correctly.

MSC has been implemented on the console to send "absolute" messages (i.e., not depending on current cue positions, arrangement of cuelists on masters, or keys being held). This means that the greatest playback accuracy can be achieved, even if manual over-riding leads to cuelists being in the wrong place or out of order.

The following is an implementation chart for seeing how console actions lead to transmitted MSC commands:

Console Action	**MSC Command**	**Data Description**
Console actions which MSC commands can reproduce exactly:		
Activate (choose+go)	Open cue list	1B Q_list
Go	Go	01 Q_number Q_list
Go - Skip	Go	01 00 Q_list
Go - Resume	Resume	03 Q_number Q_list
Goto	Go	01 Q_number Q_list
Halt - Stop	Stop	02 Q_number Q_list
Release	Go Off	0B Q_number Q_list
Step Up	Standbye_+	11 Q_list
Step Down	Standbye_-	12 Q_list
Page Change	Open Cue Path	1D Q_path
Grand Master / DBO	Set	06 FE 01 value
Rate Thruster	Set	06 FF 01 value
Console actions which MSC commands can not reproduce exactly:		
Move Fader *(Choose button held ignored)*	Set	06 0..7 00 value
Halt - Back	Standbye_- (*no MSC command for fade backwards)*	12 Q_list

Q_list is the cuelist decimal number

Q_number is the cue decimal number

Q_path is the page decimal number

Note: cues which are triggered automatically via wait times or follow do not cause an MSC command to be sent.

The following is an implementation chart showing how received MSC Commands map onto console actions:

MSC Command	**Data Description**	**Console Action**

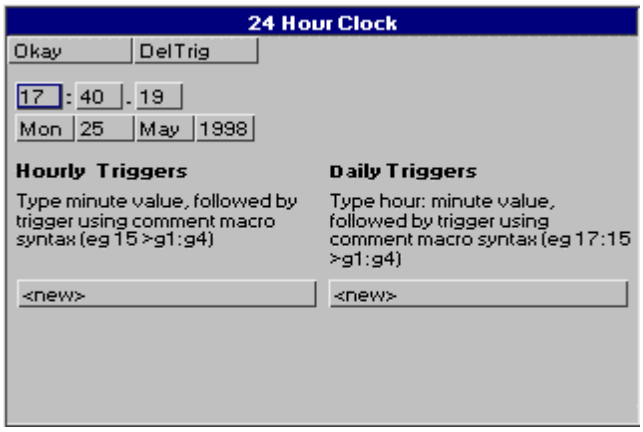
For a command expecting a Q_list, if none is sent then the cuelist on the 'selected' master is assumed.

Go	01 Q_number Q_list	Goto cue
	01 00 Q_list	Press Go
Stop	02 Q_number Q_list	Halt cuelist (cue ignored)
	02 00 Q_list	Halt cuelist
Resume	03 Q_number Q_list	Resume cuelist (cue ignored)
	03 00 Q_list	Resume cuelist (cue ignored)
Set	06 FE 01 value	Grand master move
	06 FF 01 value	Rate thruster move
	06 0..7 00 value	Fader move
Standbye_+	11 Q_list	Step Up
Standbye_-	12 Q_list	Step Down
Open Cue List	1B Q_list	Activate cuelist
Open Cue Path	1D Q_path	Change page
Reset	0A	Ignored - use Open Cue Path command instead

All other MSC commands are ignored

24 Hour Clock

The 24 Hour Clock and time related functions are also accessible through the Inputs Panel.



The 24 Hour Clock panel allows you to set the time and date in the console, as well as program daily and hourly triggers for comment macro style commands. The 24 hour clock and calender in the Echelon is not affected by the Millenium bug, also known as the year 2000 bug. It will correctly change from the year 1999 to 2000, and it correctly identifies the year 2000 as a leap year.

Daily Triggers

Daily triggers allows you to leave the console running unattended and at a set time (or times) each day, the console will trigger a comment macro. To set a daily trigger;

1. Move the selection box to the Daily Triggers box and press **Set**.
2. Type the hour: minute value, followed by the trigger command using comment macro syntax (See Macros in Cuelist Chapter for more information)
3. Hit **Enter** when finished.
4. To enter another daily trigger, press the down cursor key and another trigger box will appear. Repeat steps 1 to 3.

You can enter multiple daily triggers, although only 4 triggers will show on screen at any one time. By using the cursor keys, you can scroll through the list of triggers

Hourly Triggers

Hourly triggers allows you to leave the console running unattended and at a set time (or times) each hour, the console will trigger a comment macro. To set an hourly trigger;

1. Move the selection box to the Hourly Triggers box and press **Set**.
2. Type the minute value, followed by the trigger command using comment macro syntax (See Macros in Cuelist Chapter for more information)
3. Hit **Enter** when finished.
4. To enter another hourly trigger, press the down cursor key and another trigger box will appear. Repeat steps 1 to 3.

You can enter multiple hourly triggers, although only 4 triggers will show on screen at any one time. By using the cursor keys, you can scroll through the list of triggers.

Frequently Asked Questions

If you're having difficulty figuring out how to do something or why the console is behaving the way it is, look through the following section to find a problem that matches your own.

Hardware

I have to reload a show from disk every time I turn on the power.
It's likely that the battery is flat. Return to your authorised service agent for a replacement battery to be installed.

The screens are black and I can't see anything.
Try pressing Setup and turning the middle or right parameter wheels to adjust the contrast.

During disking the DMX signal drops causing a flicker in the fixtures. Can that be fixed?
This will eventually be corrected with software modifications.

Setup

The console is sending out erratic DMX.
Make sure the fixtures and the ECHELON are receiving power from the same source. If this is not possible, use a DMX opto isolator between the console and the fixtures.

Try terminating the end of the DMX line with a DMX terminating plug.

I've patched my fixtures, but they aren't responding as they should (or they're not responding at all).
There are a few things worth checking:

- Make sure the grand master is up.
- Make sure **Blind** is not on.
- Make sure the switches and addresses on the fixtures are set correctly. Consult Appendix A for further information on this.
- Make sure the console is properly grounded and that it's on the same power source as the fixtures.
- Test the cabling. Use a DMX tester and work your way down the data line from the console to the fixtures.
- Make sure the fixtures have the correct EPROM's on board. Manufacturers sometimes include new software in fixtures that changes the channel definitions.

How do I access a fixture that's not shown in the schedule?
See Appendix B to learn how to set it up yourself or contact your dealer for further assistance.

The blank show disk I downloaded from the Internet can't be read by the console.
Make sure you've labeled the disk "library1." This needs to be done in File Manager in Windows or on a Mac.

I've lost my PIN. How do I get back into my show.
Clean start the console and reload the show.

I can move my VL5's, but I can't get any Intensity.
Make sure that you've also patched the Intensity, and that the Grand Master is up.

How can I have my colour changer display my colour in steps instead of %. OR: How do I get DMX values to appear on the parameter wheels?
Change its settings in the fixture library. Refer to Appendix B.

If I type desk channel 1 @ Full while the patch window is open the offending item gets patched to 100.
This isn't a bug. Full is interpreted as 100, whether the patch window is open or not.

When you go into the Control Panel and change the keyboard to "US", the "English" option disappears.
It's still there; you just need to use the cursor keys to scroll the list back up

Disks and Fixture Library

Are show disks recorded on an early version of software compatible with later versions of software?
Yes.

Are show disks recorded on a later version of software compatible with earlier versions of software?
Typically no.

In my library file, why does Douser = b still allow the channel to be controlled on the fader?
It is set as htp8bit. All HTP parameters are fader controlled.

How do I change fixtures so that they fade colour wheels?
Edit the fixture library for relevant fixtures: change crossfade = 1 under colour parameter to crossfade = 0. You can also use the time window to over-ride on a cue by cue basis

Programming

I can't see all the Beam parameters in the Programmer Time window.
Make sure that Beam has been selected in the Control Panel **`Keep Parameters Separate`** section.

I recorded a cue, but nothing appeared in the cue list.
Make sure the desired cuelist was chosen.

The clear restore button stays on even when programmer is cleared.
Make sure you've patched all your fixtures.

I have selected Cybers & VL5 groups. When I select a colour, the Cybers change, but VL5's don't.
You pressed a palette that only contained information for the Cybers.

My I-beams or Cybers will not respond to colour or gobo timing, even through I'm using the M speed.
Make sure the fixtures are set to the correct personality setting.

I'm trying to create a palette with ICBF in it, but I only get colour (or focus or beam)?
Adjust the Masking settings while recording.

If I program colour mix channels, the colour wheel gets programmed as well even though I didn't touch it
All the colour parameters are linked; recording one records the others. You can unlink them by using the control panel **`Keep params separate`** option. If you do unlink them, watch out! People usually become confused by forgetting to touch all the wheels when recording looks.

My colour changer will not crossfade to the new colour even though I have I've put timing on the cue.
The colour parameter may be set to snap change in the fixture library. Either change it there or set the path to 0.

If I change a cuelist on one page, will it change on the other pages.
Yes.

If I change the cuelist option settings, does this apply to all cuelists or just this one?
Just the one being changed. The options are specific to each cuelist. To change all, use the control panel **`Cuelist defaults`** function.

How can I copy a palette created for x amount of lights to another light if I decide to add it to the patch afterwards.
When making the palette, make sure that you specify for one fixture only. All fixtures will then use this value, as will all additional fixtures added later (of same kind).

How do I knock out individual parameters from a Q or a pallet?
Load cue/palette, select the fixture, hold **Undo**, move the relevant parameter wheel, **Update**, **ENTER**.

How do I remove fixtures from a cue?
Load the cue, select the fixtures, press **`Knockout`**, press **Update**.

How do I remove a fixture from a cuelist?
Select the fixtures to remove, press **Pig** and **Active** to grab all parameters, record with the **`Remove`** option, select all cues in the destination cuelist.

Can I give a cuelist a name?
Yes. Go to the cuelist window. Select the cuelist. Press **set**. Type in the name. Press **ENTER**.

Do I have to keep pressing Back space after set to erase what's already there.
No. Just start typing and the old items get wiped out.

If I accidentally hit Update, how do I get rid of it?
Press **Backspace**.

Do I need to press the @ before Full, i.e., 6 Full.
You can hit **Full** straight off, provided that that you've just done a selection.

Is there a way (besides using the open white palette) to record values into all parameters?
Select fixtures, PIG+Active grabs all parameters of selection. Or Record with 'Everything'

How I can change the Open White parameters.
Either edit the palette itself or edit the parameter default values in the library file.

Move choose **syntax does not move a cuelist from one fader to another. It gets copied instead.**
This is correct. Actually, it doesn't get copied, it gets *referenced* again. It is as though you had "moved" from the cuelist directory in the first place.

When I merge in new times to my cue, the times don't get changed
You need to merge values and times at the same time. You cannot currently merge time on its own. Also, make sure you turn off the time mask when you do the merge.

When do you see the Update Dialogue box?
If you over-ride lights in the programmer with first pressing **Load**, then hit **Update**, it gives you a window of things to change.

Playback

My timing seems all screwed up and the actual fade time is not what I have entered in the cues.
Check to make sure that the rate over-ride and thruster settings are at 100%.

I created a chase on my fader, but want to adjust the rate on the fly.
Hold down **choose** on the chase's Master and dial the parameter wheels.

I have an Intensity Only cue on a fader, but nothing happens when I bring up the fader.
If it's an LTP fader, you must press **GO** first. Otherwise, set it to be HTP. Also, make sure that the **Add blank first cue** option is off.

My cues are playing back differently than how I programmed them.
This is likely a State problem. See the Summary of *Editing Options* section in the *Cues, Cuelists, and Pages* chapter.

I've recorded a cue to a fader, but when I advance to the next cue it stays in the same look.
Try clearing the programmer.

I have only one page. How do I create more?
Press an empty page in the page window or press **Page** and the page number followed by **Enter**.

When I change pages all my cues fade out. How can I hold a few over?
Hold **choose** while changing page for the cuelists to hold over.

Can I run cuelists from the cuelist directory window?
No. They must sit on a fader.

When I change pages, my cuelists get released even though they're on a template.
Make sure you haven't re-recorded your template cuelists into your normal pages. If so, the template gets continually over-ridden by new pages.

I can't get Save Activity to work.
Save Activity only works on current page.

When I'm playing back a long cuelist, the page does not scroll automatically when you hit the GO.
Turn on the **Follow** option on cuelist display.

I'm unable to scroll through a cuelist. It always jumps back to the top of the list.
Turn off the **Follow** option

I really need a way to jump to any point within my cue list and continue on from there.
Try **Goto 100 ENTER**. Make sure the master is selected.

I have a chase Master running strobe chases. If Q8 then goes on my main Master it seems to dim all the fixtures and change their position focus. Why does it do this? Q8 does not have any Trackspot data in it at all.
This is because you have the cuelist option **Maintain state** on, and **...but not in jumps** off. When **but not in jumps** is off, the cuelist will reassert its state on cue execution (in case parameters have been over-ridden by other masters). The Trackspots may not be in the cue 8, but they are in earlier cues, and it is this that causes the problem. To prevent this, turn **but not in jumps** ON.

I want to use MIDI to trigger a 2nd ECHELON as a tracking backup. However, if you had a crash on the main desk would it trigger a crash on the backup?
MIDI show control will do tracking fine, apart from the fact that Halt/back will not fade on the backup, it will snap. Plus it will not track any over-rides using the programmer. MIDI notes will do full tracking correctly. Regarding crashes: it depends what the crash was caused by. If it was due to a window problem, then not having the window open on the backup would mean the backup won't crash either. Other software bugs may be reproduced. The backup will cover for hardware failures very nicely though.

A fixture's intensity is at full no matter where fader is
Check that the intensity parameter isn't set as htp8bit in the fixture library.

Hitting Go to exit a loop zaps fade time of other running cues. How do I stop this?
You can fix this problem by turning on the **...but not in jumps** cuelist option.

I can't get Learn Timing to work with Simulate in SMPTE.
Learn timing will only replace wait times that are currently set to Halt (blank in the cuelist). This is to allow you to build up the timing over several passes, and not have your previous work eradicated every time.

Extended Key Chart

This chapter gives a quick reference to keystroke commands.

Pig functions

The chart below shows what happens when **PIG** is pressed in combination with other items:

Parameter Wheels	Fine movement for parameters larger than 8 bit.
Palettes and Groups	Deselects chosen palettes and groups.
.	Minutes
Active	Puts values into all parameters for currently selected fixtures in programmer
clear restore	Restores programmer to its previous state before **clear restore** was pressed.
Next	Goes backwards (Same as **PREVIOUS**)
Next Page	Goes backwards (Previous page)
Release	Releases all Playback Masters
1 through **9**	Select buttons (left to right) located on the external monitor

Setup functions

setup also has special functions when used with other items:

Left Parameter Wheel	Adjusts desk lamp brightness
Centre Parameter Wheel	Adjusts main LCD contrast
Right Parameter Wheel	Adjusts other LCD contrasts

External Keyboard

When using the keyboard, the letter keys obviously let you type names, which may be easier than using the menu buttons to name items. The following also duplicate console keys:

Arrows	the arrow keys on the keypad.
Num Lock	**set**.
Control	**PIG**
Esc	**Cancel**

Choose

choose also has added functionality when used in combination with the following:

Go	Step up
Halt	Step down
Flash	Activate without “going”
Fader	Fade all parameters

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Appendix A: Fixture Information

Cyberlight

The standard library uses mode 1; set Address switches 7 to off and 8 to on. It's also possible to create a fixture for mode 2 operation. Remember that Cyberlights can only be patched to certain addresses in DMX. Make sure you're using EPROM version 6.9 or higher.

Fixture #	Address	DMX Address
1	8	001
2	1,8	021
3	2,8	041
4	1,2,8	061
5	3,8	081
6	1,3,8	101
7	2,3,8	121
8	1,2,3,8	141
9	4,8	161
10	1,4,8	181
11	2,4,8	201
12	1,2,4,8	221
13	3,4,8	241
14	1,3,4,8	261
15	2,3,4,8	281
16	1,2,3,4,8	301
17	5,8	321
18	1,5,8	341
19	2,5,8	361
20	1,2,5,8	381
21	3,5,8	401
22	1,3,5,8	421
23	2,3,5,8	441
24	1,2,3,5,8	461
25	4,5,8	481

To home or douse a Cyberlight:

1. Select fixtures
2. Bring Intensity to Full
3. Control at "Arm" (100%)
4. Intensity at 0 %
5. Within 3 seconds, bring Control channel to "Home" (25%) or "Douse" (50%)
6. Hold above for additional 3 seconds
7. Clear programmer

Golden and Super Scans

Operate with personality switches 1 and 2 on. If the extended modes are being used, personality switch 4 must also be on.

Intellabeam

Runs in 12 channel High resolution mode. Set personality switches 5, 6, and 8 to on. Also select 3 for channels 1 through 256 and 4 for 257-501. Switch 7 toggles between oscillating and half colours.

Fixture No.	Address	DMX Address
1 (22)	None	001 (257)
2 (23)	3,4	013 (269)
3 (24)	4,5	025 (281)
4 (25)	3,6	037 (293)
5 (26)	5,6	049 (305)
6 (27)	3,4,5,6	061 (317)
7 (28)	4,7	073 (329)
8 (29)	3,5,7	085 (341)
9 (30)	6,7	097 (353)
10 (31)	3,4,6,7	109 (365)
11 (32)	4,5,6,7	121 (377)
12 (33)	3,8	133 (389)
13 (34)	5,8	145 (401)
14 (35)	3,4,5,8	157 (413)
15 (36)	4,6,8	169 (425)
16 (37)	3,5,6,8	181 (437)
17 (38)	7,8	193 (449)
18 (39)	3,4,7,8	205 (461)
19 (40)	4,5,7,8	217 (473)
20 (41)	3,6,7,8	229 (485)
21 (42)	5,6,7,8	241 (497)

RoboScan 518

Uses Mode 3. Don't forget that Martin fixtures require a special adapter lead which reverses the wiring.

RoboScan 1220 CMYR and XR

Uses mode 2. Don't forget that Martin fixtures require a special adapter lead which reverses the wiring.

Scrollers and Colour Faders

Come with dimmers attached.

Trackspot

Personality switches 3 and 5 should be up for channels 1 through 256. Use switches 3 and 4 for channels 257 and above. Remember that Trackspots can only be patched to certain addresses in DMX.

Appendix B: Fixture Library

The console uses “fixture library files” to find out about the different fixtures you might be using. The files contain information such as the number of channels, whether the channels are 8 bit or 16 bit resolution, any important step values for a channel, and their associated names, etc.

All this information is stored in a text file on your show disk. To change the way fixtures are controlled by the ECHELON, use a PC to edit these text files; or create new personalities by making new text files and adding them to your show disk. This chapter explains how to do this.

The files, and what they do

Standard library files are shipped with every ECHELON in the form of a “library disk”; this is essentially a normal show disk without programming and an extra file JNT2.BIN which is a copy of the console operating software. All commonly used fixture library files are amalgamated into one library file, “_lib.lib”, for faster loading..

If you were to look at the directory of a library disk on a PC, this is what you would see:

`_zcat.dat`		system catalogue file (binary)
`library`		subdirectory containing library files
`_lib.lib`		library file (text file)
	`function.txt`	file which lists parameter function types
	`types.txt`	catalogue of all the ‘.lib’ files
	`history.txt`	list of all updates made to the library files
	`uncommon`	subdirectory containing ‘.lib’ files for less common fixtures, for you to include if you wish
`setup`		subdirectory containing show setup information (binary)
`old`		subdirectory containing information for loading show into an older console (binary)

Functions are listed in “function.txt”

The console reads in a list of functions such as “pan,” “tilt,” or “intensity” from the file “function.txt.” With this list, the console can make sure that a “pan” channel for a cyberlight operates in the same manner as “pan” for a roboscan, and it can tell what types of channel to group together into the 4 kinds: I, C, B, F.

In addition, it uses the list order to determine the order in which functions turn up on the wheels and on the display screens.

For example:

```
version = 1
Intensity = +
Pan = f
Tilt = f
Pan mode = f
Tilt mode = f
Tilt >> = f
Tilt << = f
Red = c
Green = c
Blue = c
Amber = c
Magenta = c
Cyan = c
```

```
Yellow = c
Colour = c
Colour 2 = c
Colour <> = c
Color = c
Color 2 = c
Color <> = c
Gobo = b
Gobo 2 = b
Prism = b
Fx/prism = b
Gobo <> = b
Gobo 2 <> = b
Fx/prism<> = b
Iris/gob<> = b
Iris = b
Focus = b
Frost = b
Zoom = b
Strobe = b
Shape 1a = b
Shape 1b = b
Shape 2a = b
Shape 2b = b
Shape 3a = b
Shape 3b = b
Shape 4a = b
Shape 4b = b
Shape <> = b
Mode = b
Mode 2 = b
Xy rotate = b
Control = b
Duration = b
Speed = b
Arm = b
Focus Time = b
Colour Time = b
Color Time = b
Beam Time = b
```

Once a show has been programmed, do not change the order of the functions within function.txt; otherwise data will get corrupted.

Fixtures are listed in fixtures.txt

To control the order in which the ECHELON manages fixtures, the fixtures.txt file provides a list of all the library files to be read. This file will not exist on a show disk, since all the library files are amalgamated into the one file "_lib.lib".

For example:

```
count = 29
Dsk_chan.lib
Scroller.lib
Scroldim.lib
Vl5.lib
Vl6.lib
Vlm.lib
GscanHPE.lib
Gscan3x.lib
Gscan3.lib
Gscan2.lib
Szoomx.lib
Szoom.lib
Super2.lib
Super.lib
Miniscan.lib
Cyber.lib
```

```
Cybercx.lib
Ibeam.lib
Trakspot.lib
Robocmyr.lib
Roboxr.lib
Robo518.lib
Robo812.lib
Robo400.lib
Nat1200.lib
Nat2500.lib
Colfade.lib
Solar.lib
Summa.lib
```

Making a new fixture

Edit your new fixture file

Using a text editor on a PC, create a new fixture file. The next section describes the format of these files, but to save time you can copy an existing one and edit it. Save your fixture file under a shorthand name for the fixture, for instance “robo400.lib”.

The fixture has new functions which are not already in functions.txt

If the new functions are of Beam kind, they will be added automatically - there is no need to edit functions.txt. Otherwise, they will need to be added to the file by adding more function lines.

FunnyCol = c

The name must be unique, and 10 characters or less. Try to maintain similar naming conventions, e.g. <> indicating rotation.

Indicate the function kind using the symbols :

- + is for the primary intensity parameter of the fixture
- I,C,B,F denote Intensity, Colour, Beam, and Focus
- X is for non-editable, undisplayed parameters.

Add the fixture file to the disk, and to types.txt

Copy the fixture file into the library directory. Then edit “types.txt”: increase the number on the “count =“ line, then add the name of the library file on a new line.

Or, cut and paste onto the end of _lib.lib

Show disks differ from library disks in that they have the library information in a condensed, one file form. If you are updating a show disk, you can edit this file instead of adding a separate “.lib” file. Edit “_lib.lib”: increase the number on the “count =“ line, then cut and paste the entire text of your new fixture onto the end of the file.

Test the changes

Try loading the disk into a Hog II to see if you have all of the library commands right. The console will pop up a user alert box if it detects an incorrect line. Finally, test each parameter individually to make sure all values are accessible, since these sort of errors won’t be spotted at the disk load stage.

Writing a fixture file

Fixture files are saved under a shorthand name for the fixture, which is used in some Hog II windows, e.g. vl_5.lib will show “vl 5”.

The following is a dissection of a typical library file:

`version = 1`	Internal file format id. Some optional syntax lines will require version number greater than 1. The notes will indicate whether this is needed.
`manufacturer = 2`	Unique manufacturer code. These are allocated by Flying Pig Systems. Contact Flying Pigs if you need a new code.
`product = 1`	Unique product code. As above.
`name = intellabeam`	The name of the fixture. Limit names to 15

		characters.
`yoke = yes`	optional	Indicates that the fixture is a yoke light and that 'flip' will work.
`// a comment`	optional	Comments must be on their own line.
`output = dmx`	optional	Specifies the output type, and the start of a patch group (viz VL 5's.)
`parameter = intensity`		Parameters are listed in the order they appear in dmx (or other protocol.) Indicates the start of a new parameter. Use standard names as per "functions.txt" if possible. Names will be assumed to be type 'beam' if not found in "functions.txt."
`default = 0`		Give the value to be output at power on.
`highlight = 255`		Give the value to be output when "highlight" pressed.
`type = htp8bit`		The specifies the control method and resolution... For fader controlled parameters (ie intensity) • htp8bit - highest takes precedence 8 bit • htp16bit - highest takes precedence 8 bit For pan, tilt, colour, etc... • ltp8bit - latest takes precedence 8 bit • htp16bit - latest takes precedence 16 bit
`crossfade = 0`	optional	Default crossfade path: 0 is linear; 1 is snap change at start; 2 is snap change at end
`kind = +`	optional	If the parameter name is new (i.e. not in "function.txt"), you can specify a kind using "i,c,b,f,+,x"
`range = 0, 255, %`	optional	The parameter will access any value between 0 and 255. The value will be displayed as a percent. This is the default (or 0, 65535 for 16bit) if no range is given.

`parameter = colour`
`default = 0`
`highlight = 0 crossfade = 1`
`type = ltp8bit`
		A new parameter starts

`range = 0, white`		Specifies a specific point and label for the parameter. Keep your labels consistent, since they are used to generate palettes automatically by "AutoMenus". The maximum label size is 8 characters.
`range = 8, 24, split, centre`		Specifies a range of values corresponding to "split". The range will be offset from the centre (rounding down.)

`range = 25, 41, red, centre`
`range = 42, 58, congo, centre`
`range = 59, 74, bluehole, centre`
`range = 75, 89, yellhole, centre`
`range = 90, 107, warm, centre`
		The full available syntax is
		
		range = min [,max], % | label | nothing [, centre][, noauto]
		
		You can omit the label and %. "noauto" prevents the range from being used by "AutoMenus."

`range = 108, 123, cold, centre range = 128, 255, spin >>`		Values in a set of ranges MUST NOT OVERLAP. For split intensity functions (eg GoldenScan), specify the intensity range first so that the "@" key works
`constant = 0`	optional	To insert a non controllable constant in the output stream. Currently, the range of supported values is 0.125
`checksum = 0`	optional	To insert a byte size checksum in the output stream, since the start of the current output group. The 0 is not used, but must be included.
`output = dmx`	2nd is optional	Start a new output group. Second useage is optional.

`parameter = pan`
`default = 0`
`highlight = 255`
`type = ltp8bit`
		A new parameter starts

`movement = invert`	optional	For pan and tilt only. If the head movement is non standard (defined as Clay Paky), use this command to invert the movement.
`deflection = 355` `range = 0, 255`	optional	This specifies the degrees for a full scale deflection of a yoke or mirror. Currently, it is used in the calculations for flip.

Automatic palettes created by "AutoMenus":

The "AutoMenus" menu option in the patch window uses the library information to compile palettes for the fixtures you select.

A palette will be generated for every "range" entry in a library that

- is for a parameter of type "beam" or "colour"
- has a valid label, i.e. not blank or %
- does not have noauto set

The value stored in the palette will be the minimum of the range, unless "centre" is specified.

Since "AutoMenus" combines ranges across different fixture types into one palette, it is important that you use consistent label names. In addition, use "noauto" against non useful ranges.

Guidelines

- Use function names that exist already.
- Use red/green/blue or magenta/cyan/yellow.
- The Intensity display area is small, so don't use any labels in ranges for 'intensity'; use 'str' for strobe.
- Use continuous ranges where possible; where it is an increasing then decreasing value (or vice versa) put in a 'centre' option. eg wheel spins that are clockwise, then counterclockwise
- Use standard range labels. If in doubt, search existing libraries to see what has been done already. In particular...
    - >> for rotating, spinning wheels (i.e. colour and gobo)
    - red+ for split colours
    - congo, not uv
    - lt blue, lt green
    - use index and spin for rotating gobos (i.e. not spinning wheels)
    - prism 1 (even if only one prism); don't use 3 facet etc.
- Check other fixtures to see how they have been done
- Align mirror movement to Clay Paky

- Multi range intensity - have you got the intensity control first?
- Do not set strobe as an htp8bit intensity channel (because that would mean that you could not dim cuelists with programmed strobes without the strobe rate changing). If you want strobe on faders - hold "Select" and then fade. Fader/flash does ICBF cuelist is an option that can be set in the cuelist window under **`options`**. However, some people prefer the Trakspot with shutter set up this way in order to get a faster flash bump.

Tips on making a Fixture

The guiding philosophy should be to make the fixtures as simple as possible. So instead of...

```
range = 206, stop, noauto
range = 210, <<slow, noauto
range = 215, <<med, noauto
range = 220, <<fast, noauto
range = 225, >>fast, noauto
range = 230, >>med, noauto
range = 235, >>slow, noauto
```

do

```
range = 207, 235, >>, centre
```

Also, don't add new function names unless absolutely necessary; so

```
parameter = Gobo/wash
parameter = Focus/whisper
```

should be

```
parameter = Gobo
parameter = Focus
```

You must provide an Intensity parameter:

`parameter = Dimmer/Strobe` should be `parameter = Intensity`

Finally, there's no point in giving a range of values when the result is the same across the range:

```
range = 0, 26, white, noauto
range = 244, 255, shutter closed, noauto
```

should be

```
range = 0, open          (Since a gobo param, not colour.)
range = 255, closed      (Label name lengths can only be 8 characters long.)
```

Current Fixture Codes

Here are the fixture codes in use with Fixture Library version 2.1. Please contact FPS if you'd like to give a fixture a new code.

Fixture	Manufacturer	Product	Fixture File	Other
Desk Channel	0	0	_lib.lib	Dsk chan
Scroller dimmer	0	2	_lib.lib	Scroldim
Scroller	0	4	_lib.lib	Scroller
Non Dimmable	0	5	_lib.lib	NonDim
Strobe dimmer	0	8	_lib.lib	Strobdim
Cmy fader	0	9	_lib.lib	Cmy
Cmy fader dim	0	10	_lib.lib	Cmy dim
Miniscan	1	0	cpaky.lib	Miniscan
Goldenscan 2	1	1	_lib.lib	Gscan2
Superscan	1	2	_lib.lib	Super
Goldenscan 3	1	3	_lib.lib	Gscan3
Superscan MRG	1	4	_lib.lib	SuperMRG
Superzoom	1	5	_lib.lib	Szoom
Goldenscan 3x	1	6	_lib.lib	Gscan3x
Superzoom x	1	7	_lib.lib	Szoomx
Tiger	1	8	misc.lib	Tigerscan
Goldenscan hpe	1	9	_lib.lib	Gscanhpe
Combicolor	1	10	_lib.lib	CombiCol
Stage Scan	1	11	_lib.lib	StgScan
Miniscan hpe	1	12	_lib.lib	Minihpe
Trackspot	2	0	_lib.lib	Trakspot

Intellabeam	2	1	highend.lib	Ibeam12
Cyberlight m1	2	2	highend.lib	Cyber m1
Cyberlight Cx	2	3	highend.lib	Cybercx
Emulator DMX	2	4	highend.lib	Emu DMX
Intellabeam-Lo	2	5	highend.lib	IbeamLo
Ibeam 13ch	2	9	_lib.lib	Ibeam13
Dataflash	2	10	_lib.lib	Dataflas
Studiocolor	2	11	_lib.lib	Studio
Cyberlight m2	2	12	highend.lib	Cyber m2
Cyber m2 Litho	2	13	_lib.lib	Cyber m2
Cyber m1 Litho	2	14	highend.lib	Cyber m1
Cyber Cx m3	2	15	highend.lib	Cybcx m3
Trakspot main	2	16	highend.lib	Traksp m
Technobeam hi	2	17	_lib.lib	technop
CyberCx m3 litho	2	18	_lib.lib	Cybcx 3
Technopro hi	2	19	_lib.lib	technopro
Technoray hi	2	20	_lib.lib	technoray
Vl5	3	1	vari_4_0.lib	Vl5
Vl6	3	2	vari_4_0.lib	Vl6
Vlm	3	3	vari_4_0.lib	Vl mirror
Vl5a	3	4	vari_4_0.lib	Vl5a
Vl5 Hi	3	5	vari_4_0.lib	Vl5 Hi
Vl5a Hi	3	6	vari_4_0.lib	Vl5a Hires
Vl6 Hi	3	7	vari_4_0.lib	Vl6 Hires
Irideon AR500	3	8	_lib.lib	AR500
Irideon AR5 Hi8Ch	3	9	_lib.lib	AR 5 Hi
Vl5 Hi	3	10	vari_4_1.lib	Vl5 Hi 4.1
Vl5a Hi	3	11	vari_4_1.lib	Vl5Arc Hi 4.1
Vl6 Hi	3	12	vari_4_1.lib	Vl6 Hi 4.1
Vlm	3	13	vari_4_1.lib	Vl mirror 4.1
Vl5 m1	3	20	vari_4_2.lib	Vl5 m1
Vl5 m2	3	21	vari_4_2.lib	Vl5 m2
Vl5 m3	3	22	vari_4_2.lib	Vl5 m3
Vl5 m4	3	23	_lib.lib	Vl5 m4
Vl5 m4	3	23	vari_4_2.lib	Vl5 m4
Vl5a m1	3	24	vari_4_2.lib	Vl5 Arc m1
Vl5a m2	3	25	vari_4_2.lib	Vl5 Arc m2
Vl5a m3	3	26	vari_4_2.lib	Vl5 Arc m3
Vl5a m4	3	27	_lib.lib	Vl5 Arc m4+SPC36
Vl5a m4	3	27	vari_4_2.lib	Vl5 Arc m4+SPC36
Vl6 m1	3	28	vari_4_2.lib	Vl6 m1
Vl6 m2	3	29	vari_4_2.lib	Vl6 m2
Vl6 m3	3	30	vari_4_2.lib	Vl6 m3
Vl6 m4	3	31	_lib.lib	Vl6 m4+SPC36
Vl6 m4	3	31	vari_4_2.lib	Vl6 m4+SPC36
Vlm m1	3	32	vari_4_2.lib	Vlm m1
Vlm m2	3	33	vari_4_2.lib	Vlm m2
Vlm m3	3	34	vari_4_2.lib	Vlm m3
Vlm m4	3	35	_lib.lib	Vlm m4
Vlm m4	3	35	vari_4_2.lib	Vlm m4
Colfader	5	0	misc.lib	Color fader
PanaBeam	5	2	misc.lib	Pana Beam
Roboscan 218	6	0	_lib.lib	Robo218
Robo1220 cmyr m2	6	3	_lib.lib	Robocmyr
Robo1220 xr m2	6	5	_lib.lib	Robo xr
Roboscan 518	6	6	_lib.lib	Robo518
Roboscan 812-5c	6	7	_lib.lib	Robo812
Robocolor pro 4	6	8	_lib.lib	Robo400
Pal 1200 m2	6	9	_lib.lib	Pal1200
Pal 1200A	6	9	martin.lib	Pal1200A
Mac 1200 m2	6	10	_lib.lib	Mac1200
FxPal 1200 m2	6	11	_lib.lib	fxpal1200
Robo1220 rpr m2	6	12	_lib.lib	Robo rpr
Robo1220 RoGo	6	13	martin.lib	1220RoGo

Imagescan Mode 2	6	14	martin.lib	Imagesc
Mac 600 m2	6	15	_lib.lib	Mac600
Mac 500 m2	6	17	_lib.lib	Mac500
Roboscan 518 ml	6	18	martin.lib	Robo518
Nat 1200	7	0	_lib.lib	Nat1200
Nat 2500	7	1	_lib.lib	Nat2500
MM1200DX	7	2	coemar.lib	mm1200dx
MM1200 zoom	7	3	coemar.lib	mm1200
Samurai	7	4	_lib.lib	Samurai
Nat1200DX	7	5	coemar.lib	Nat12dx
Pchmi	7	6	coemar.lib	Pchmi
Microscan 3	7	7	coemar.lib	Micro3
Solar	8	0	misc.lib	Solar System
Summahti	9	0	_lib.lib	Summa
Xescan	10	0	misc.lib	Xescan
Sky Art	11	0	misc.lib	Sky Art
Rim1200	12	0	xy.lib	Rim 1200
Yoke XL	12	1	xy.lib	Yoke XL
MN400wsh	12	2	xy.lib	MN 400 Wash
Mn400spt	12	3	xy.lib	MN 400 Spot
MN600wsh	12	4	xy.lib	MN 600 Wash
MN600spt	12	5	xy.lib	MN 600 Spot
Controlite	13	0	misc.lib	Controlite pml mk2
ConwshHX	13	1	misc.lib	Controlite Wash HX
Prince	14	0	sagitter.lib	Prince
Infinity	14	1	sagitter.lib	Infinity
DHA Light Curtain	15	0	dha.lib	DHA Lc
DHA P light curtain	15	1	dha.lib	DHA Plc
DHA Network	15	2	dha.lib	DHA Net
Xenotech	16	0	misc.lib	Xenotech
Colormag	17	2	lsd.lib	Colormag
Molemag	17	3	lsd.lib	Molemag
Star 2G	19	0	misc.lib	Starlite 2G
Starlite mk5	19	1	_lib.lib	Star5
RamPsu	21	0	wybron.lib	ColoRam PSU
Auto Con	21	1	wybron.lib	AutoPlt Control
Auto Off	21	2	wybron.lib	AutoPlt Offset
goboram	21	3	wybron.lib	Goboram
Omicron	22	0	misc.lib	Omicron laser
G300Smok	23	0	misc.lib	G300 Smoke
Stratos Hires	25	0	_lib.lib	Startos
StrtsCMY	25	1	misc.lib	Stratos CMY
Giant6c	25	4	misc.lib	Giant 6ch
Giant 16ch	25	5	_lib.lib	Giant
JEM2000	26	0	misc.lib	JEM Hydrosonic 2000
Galileo4	26	0	sgm.lib	Galileo 4
Galileo3	26	1	sgm.lib	Galileo 3
Newton	26	2	sgm.lib	Newton
Cllab250	26	3	sgm.lib	Color Lab 250
Galileo2	26	4	sgm.lib	Galileo 2 HP
Victory	26	5	sgm.lib	Victory 250
Victory2	26	6	sgm.lib	Victory 2 250
MotorHead	28	0	misc.lib	MotorHead
Mini Ultrascan2	32	0	coemar.lib	mini ult2
Miracle	33	1	future.lib	Miracle
Duke 1200	33	2	future.lib	Duke
Promotion Scan	33	3	future.lib	Promo
Genesis	33	4	future.lib	Genesis
Advert Scan	33	5	future.lib	Advert
CC-200	33	6	future.lib	CC-200
H-150	33	7	future.lib	H-150
RT-150	33	8	future.lib	RT-150
Voyager	33	9	future.lib	Voyager
Future H250	85	0	future.lib	futr 250

Appendix C: Hardware Notes

MIDI Ports

There are three MIDI ports on the back of the Echelon. MIDI In, MIDI Thru and MIDI Out. The connectors are 180° 5 Pin DIN type. They are wired as follows:

Pin 1 Not Used

Pin 2 Digital Ground

Pin 3 Not Used

Pin 4 Data +ve

Pin 5 Data -ve

Note: MIDI cables are wired 1:1 – purchase/make dedicated cables as audio cables may not work.

DMX-512 Ports

There are two DMX-512 Output ports on the back of the Echelon. DMX-512 1 and 2 refer to the Output patch listings 1 and 2 respectively. The connectors are 5 Pin XLR female panel sockets and are wired as follows:

Pin 1 Digital Ground

Pin 2 Data -ve

Pin 3 Data +ve

Pin 4 Not Used

Pin 5 Not Used

RS-485 Standard USITT DMX-512 Protocol

Desklight

2 ports are provided for a desklight. A maximum load of 10 Watt @ 12 volts (2 x 5 Watt lamps) can be connected to the console. The connectors used is a 3 Pin XLR female socket and are wired as follows:

Pin 1 Not Used

Pin 2 0V

Pin 3 +ve 0-12V

RS232 Serial Port

The RS232 serial port is used for connecting a mouse or trackball to the Echelon. The connector used is a 9 pin male “D” Sub-Connector and is wired as follows:

Pin 1 Carrier Detect

Pin 2 Received Data

Pin 3 Transmitted Data

Pin 4 Data Terminal Ready

Pin 5 Ground

Pin 6 Data Set Ready

Pin 7 Request to Send

Pin 8 Clear to Send

Pin 9 Not Used

Parallel Port

The Parallel port is used for connecting a parallel printer to the Echelon. The connector is a 25 Pin female “D” Sub-Connector and is wired as follows.

Pin 1 Strobe

Pin 2 D0

Pin 3 D1

Pin 4 D2

Pin 5 D3

Pin 6 D4

Pin 7 D5

Pin 8 D6

Pin 9 D7

Pin 10 ACK

Pin 11 BUSY

Pin 12 PAPER END

Pin 13 SELECT

Pin 14 AUTOFEED

Pin 15 ERROR

Pin 16 INIT

Pin 17 SELECT IN

Pin 18 Ground

Pin 19 Ground

Pin 20 Ground

Pin 21 Ground

Pin 22 Ground

Pin 23 Ground

Pin 24 Ground

Pin 25 Ground

VGA Port

The VGA port is used to connect a VGA monitor to the console. The connector is a 15 Pin High Density female “D” Sub-Connector and is wired as follows.

Pin 1 Red

Pin 2 Green/Mono

Pin 3 Blue

Pin 4 Not Used

Pin 5 Not Used

Pin 6 Red Ground

Pin 7 Green Ground

Pin 8 Blue Ground

Pin 9 Not Used

Pin 10 Ground

Pin 11 Not Used

Pin 12 Not Used

Pin 13 Horizontal Synchronisation

Pin 14 Vertical Synchronisation

Pin 15 Not Used

Keyboard Port

The Keyboard port allows an IBM AT style computer keyboard to be connected to the Echelon. The port is a 180^{o} 5 Pin female DIN connector and is wired as follows

Pin 1 Keyboard Clock

Pin 2 Keyboard Data

Pin 3 Not Used

Pin 4 Ground

Pin 5 +ve 5V

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