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1. Introduction

1. 1. GENERAL

Galaxy is a memory lighting control system designed to meet the diverse needs of the Entertainment Lighting Professional. It is a flexible system explicitly designed for the demands of BOTH Studio and Theatre environments.

Galaxy is capable of controlling up to 999 channels, and up to 1536 dimmers. Systems are created by selecting a combination of control panels best suited to the performance requirements of each installation. These are fitted together to create a "control surface"(see fig.1.1 & 1.2) and are supplied in conjunction with a separate Electronics unit.

Galaxy provides obvious and direct controls to the operator and the basic procedures are extremely simple.

The selected Galaxy control panels are contained within a 'desk pod'; a low profile metal chassis designed for recess into control room desk furniture. Custom control suites can be built to individual requirements.

A Memory Backup/Library storage disc system is supplied in a similar pod.

For the rigours of touring or studio floor, theatre stalls installations, the Galaxy 'pod' is also available in flight case form.

Sufficient space should be allowed in any installation for the required number of free standing colour VDUs, and peripherals such as a printer and a PC type alpha–numeric keyboard.

Main processing electronics cards are contained within a rack–mount crate assembly, supplied with a suitable rack. This may be integrated with other control equipment and backup systems as required.

Desk pods and flight–cased pods may be located up to 1km from the electronics crate.

System status displays are provided on all control surfaces. Overall Channel data display is by colour video mimic (VDU). Remote colour or monochrome videos may be provided for Stage Management or Dimmer room use.

Galaxy can be supplied with the VDU displays in a range of languages: English, French, German and Italian are available as standard; other languages are available to order.

Fig. 1.1 Typical Theatre System

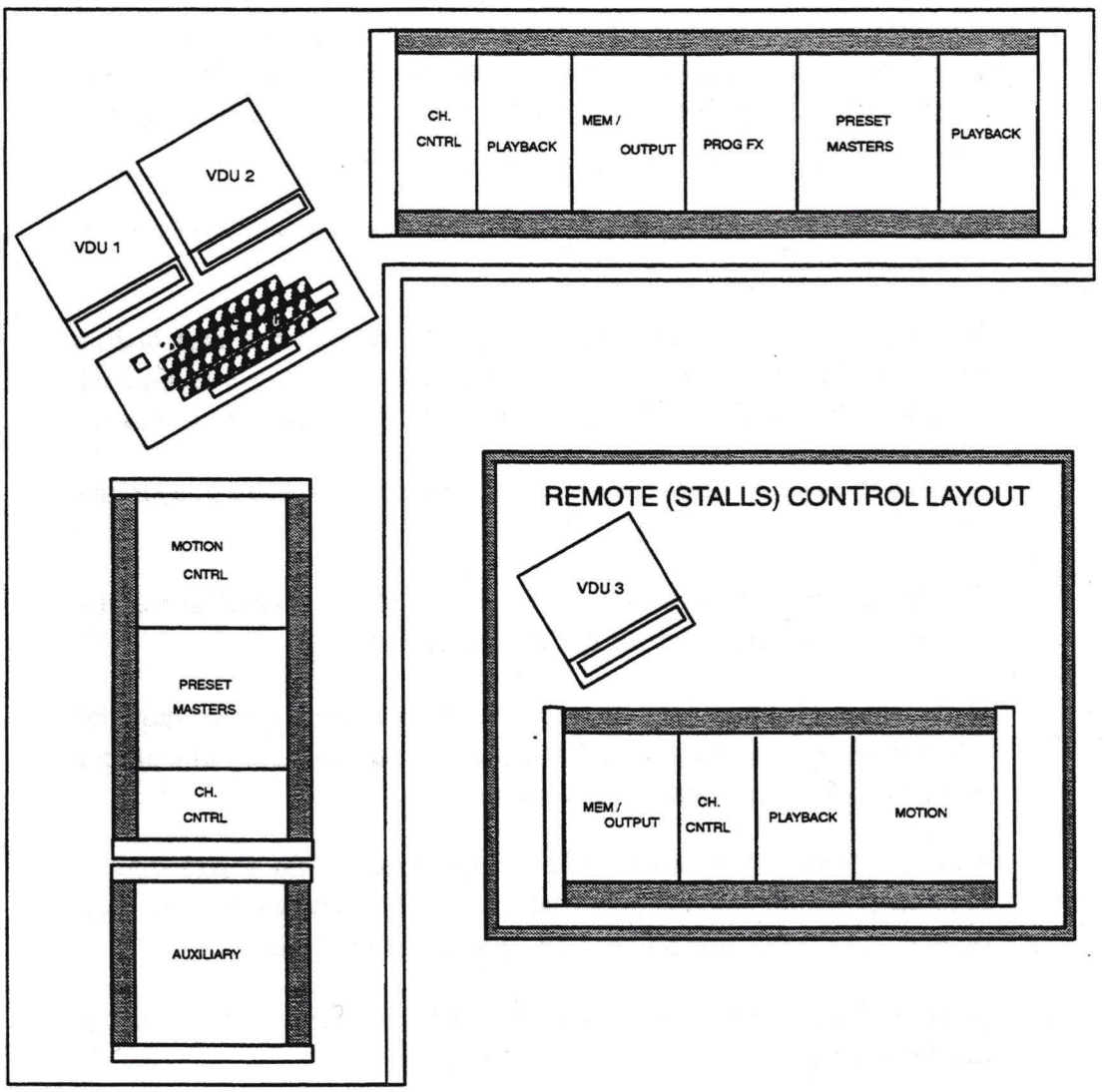
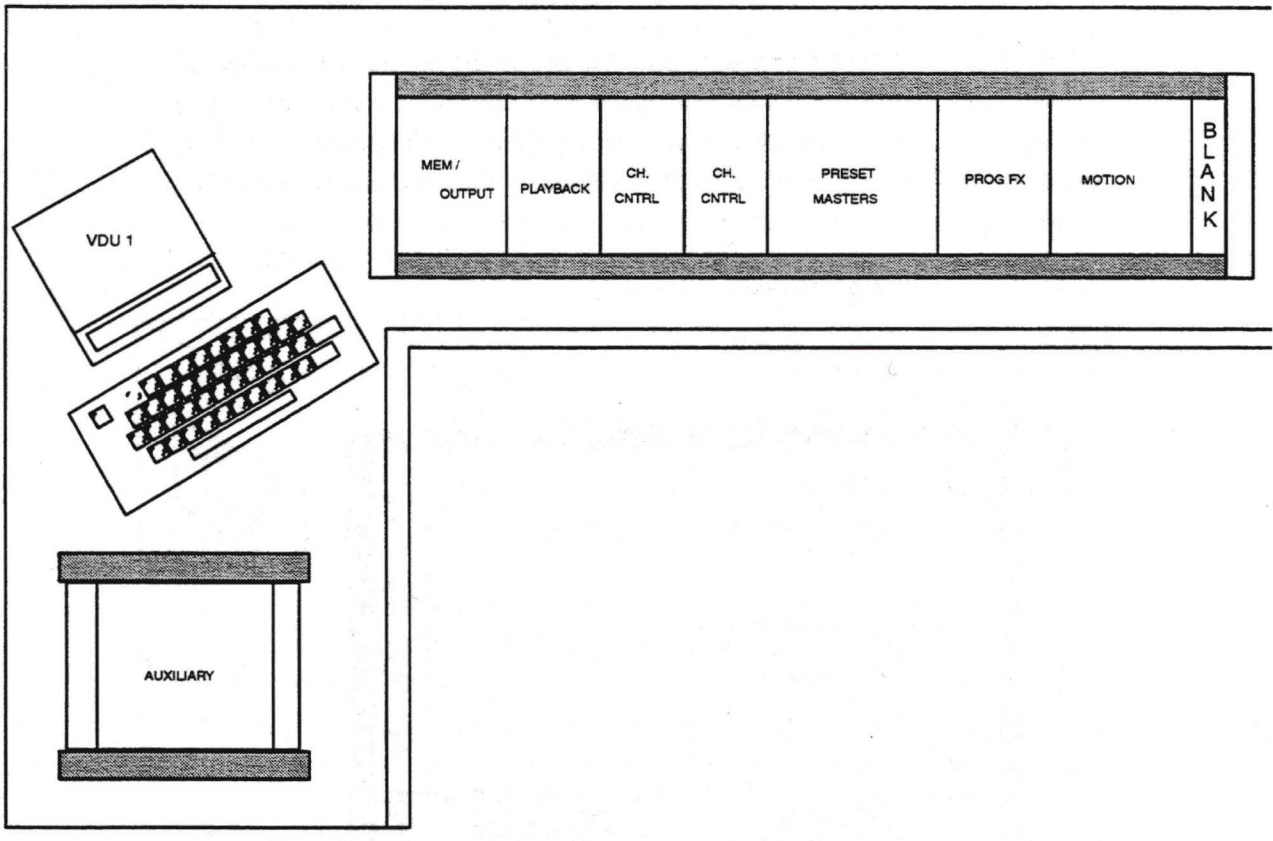


Fig. 1.2 Typical Studio System



1. 2. SYSTEM LOCATION

1. 2. 1. THE OPERATIONAL CONTROLS

The system facilities are modular allowing you to tailor your control to match requirements and budgets. Parts of the control panels may be duplicated or rearranged to suit your own preferences.

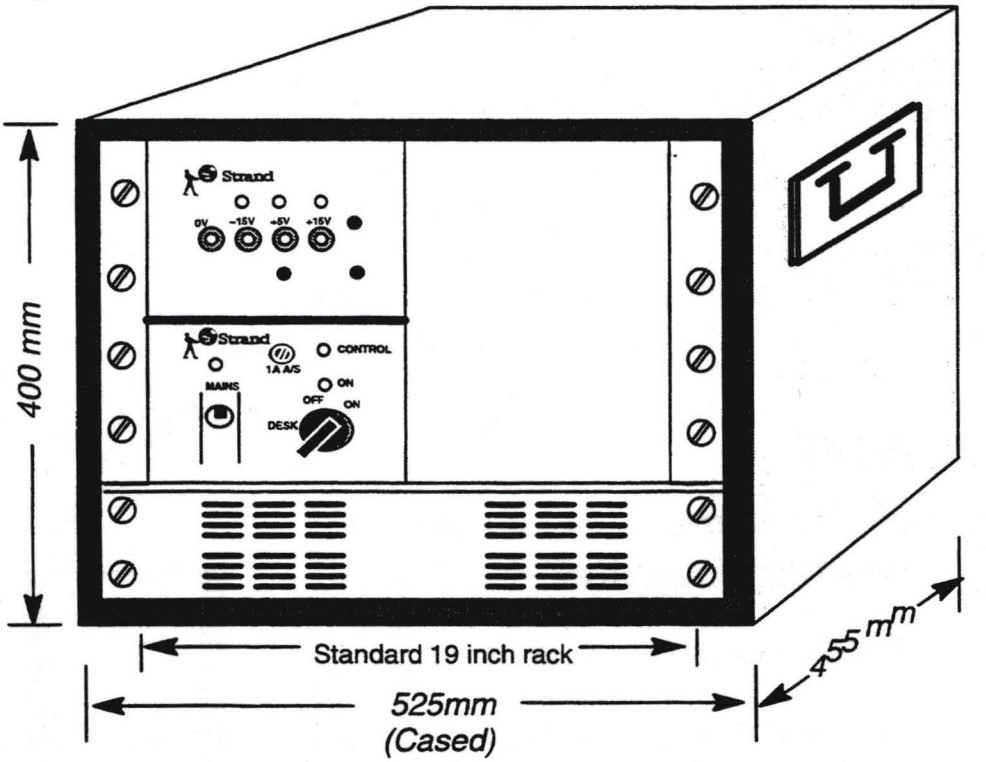
Those parts of the Galaxy system which are to be used during a production (i.e. the Control Pod, Backup System and the VDU monitor) should be installed in such a position so that a good, unobstructed view of the scene being lit is possible. In a television studio, a clear view of the monitor stack in the control suite is usually more relevant, whilst in a theatre a location at the rear of the stalls or first circle is desirable, giving clear sightlines to the whole acting area. The VDU should never be positioned where it may distract or obstruct your view of the scene that is being lit.

The Galaxy system, with its numerous coloured keys and displays, can provide severe temptation to meddlesome fingers. Whilst every effort has been made to protect the system from interference by unauthorized persons (by fitting keyswitches etc.), we recommend that the desk be located in a room with restricted access.

1. 2. 2. THE ELECTRONICS RACK

The Galaxy electronics rack may be located in the control room, dimmer room or, if required, in a central apparatus room with similar electronic equipment. From a maintenance point of view it is desirable to have the rack located in the main control room in reasonable proximity to the main console.

Fig. 1.3 Electronics Rack Dimensions



. 3. ENVIRONMENT

Galaxy is designed to be installed and operated in areas satisfying office level cleanliness and comfort, Air–conditioning being very beneficial if available.

The Galaxy Control Pod, electronics rack and peripheral units will operate in ambient temperatures within the range 0 degrees Celsius to 35 degrees Celsius. All electronic components gradually suffer an ageing process which is accelerated as the temperature rises, i.e. the higher the ambient temperature, the more likely faults become. To maximise the system reliability and to minimise operator fatigue or discomfort, a temperature between 18 degrees Celsius and 25 degrees Celsius is recommended. Relative humidity should be between 10% and 90% (non–condensing).

The cleanliness of the surroundings has a direct effect on the life expectancy of the system. Excessive dust and fluff obstruct ventilation and accumulation of cigarette ash can cause partial short circuits.

Most of the control panel keys have sealed, reed–switch contacts which are impervious to dust, whilst the fader wheels have no electrical contacts. The slider faders and disc systems however, may be damaged by an accumulation of grime, smoke or other contaminants.

Liquids must not, under any circumstances, be spilt on the Galaxy control panels, as the effect on the electronics immediately below could be destructive. In the event of liquids being spilt on the electronics, power must be turned of immediately. The damaged panel should then be removed from the pod and immersed in clean cold water. The Strand service department should then be notified.

The polycarbonate finish of the panels are scratch resistant but will be damaged by direct heat such as cigarettes and soldering irons. To clean, a judicious application of anti–static aerosol cleaner is suitable. Under no circumstances should spray polishes or solvents be used near the panels as they may destroy the slider faders and damage the non–reflective finish.

If a carpet is fitted to the control room, suitable precautions should be taken to ensure that this does not lead to a build–up of static electricity. All woollen carpets or synthetic carpets with woven–in conductive threads overcome this problem. Alternatively, anti–static treatments for nylon or polyester carpets are available.

1. 4. MECHANICAL DETAILS

1. 4. 1. PANEL SIZES

All control panels are designed for fitment into a Galaxy desk pod. The panel layout within the desk pod is flexible and, for convenience, should be specified at time of order. It is easily changed during system commissioning, or subsequently if required.

1. 4. 2. CONTROL DESK PODS

Control desk pods are supplied in differing lengths, dependent on the control panel selection. The Standard sizes are:

Size 1 panel layouts up to 800mm

Size 2A panel layouts up to 1120mm

Size 2B panel layouts up to 1320mm

Size 3 panel layouts up to 1370mm

Size 4 panel layouts up to 1600mm

Other sizes are available to special order.

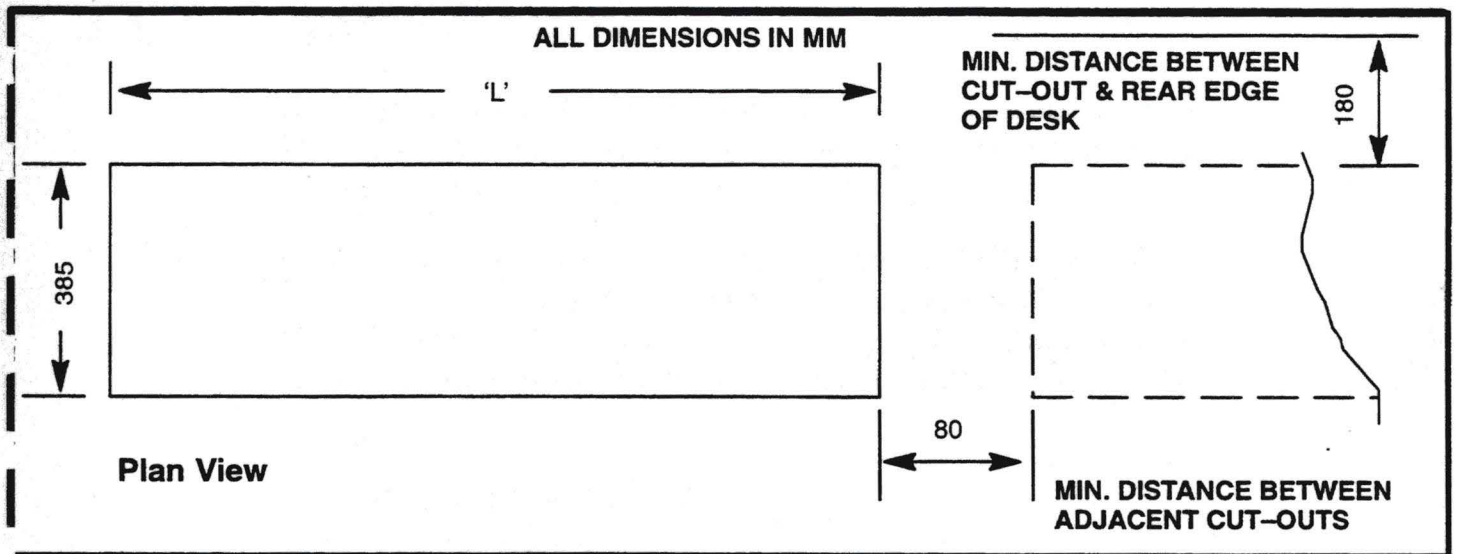
Where panel layout requirements exceed the capacity of a size 4 pod, the use of an Auxiliary pod is recommended. Blank panels are supplied when the selection of panels does not completely fill a standard size pod.

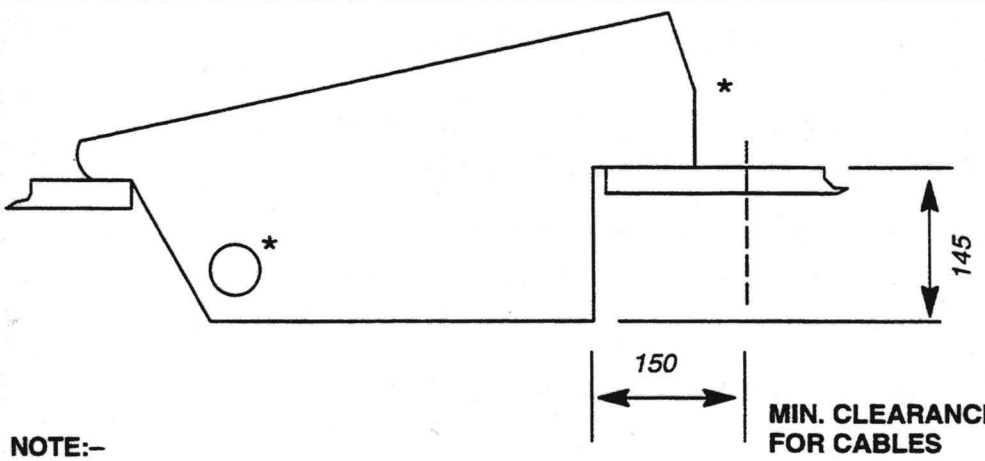
Recommended cutouts for the Galaxy pods are shown on the following page.

1. 4. 3. MEMORY BACKUP POD

The memory backup is a self contained pod that cannot be incorporated in the main control pod. The panel cutout for the backup pod is also shown on the following page.

Fig. 1.4 Pod Cutout Details





Side Elevation

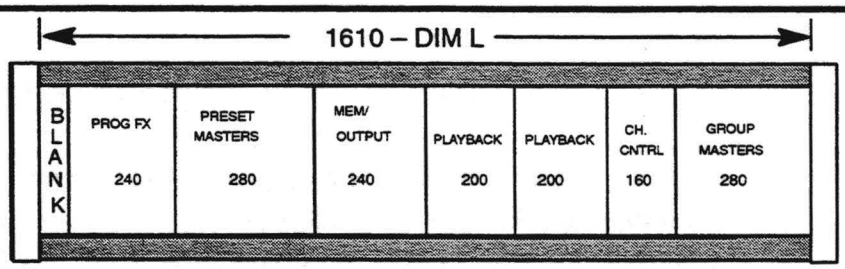
*145 for Desk pod

*175 for Back–Up pod

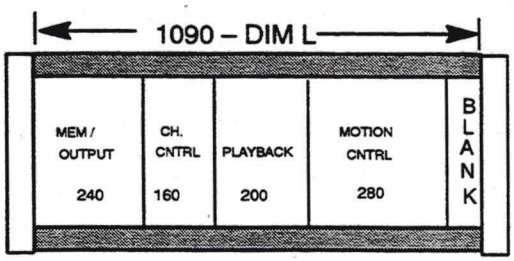
NOTE:–

1. CABLE ENTRY FOR ALPHA KEYBOARD AT EITHER END OF POD. REAR OF POD SHOWN THUS *
2. MAX. DESK TOP THICKNESS – 25

POD SIZE	DIM L
1	810
2	1090
2A	1130
2B	1330
3	1370
4	1610
MEM B.U	335



Typical Pod 4 Configuration



Typical Pod 2 Configuration

2. System Overview

2. 1. SYSTEM CAPACITY

Galaxy systems are available to control 999 channels patched to up to 1536 dimmers. Systems may be configured for dimmer output in any multiple of 48.

Integrated control of up to 249 Automated fixtures/Colour Scrollers is available without compromise to dimmer output capacity. The Galaxy MOTION CONTROL system outputs via a digital serial data link and is designed to offer control of luminaire accessories and features such as :–

- PALS automated luminaires.
- PAN/TILT/FOCUS/IRIS
- SCROLLER COLOUR CHANGERS

Full Dimmer to Channel proportional patching is provided, with the facility to patch multiple dimmers to any single control channel.

Galaxy supports two "logical" user control surfaces – normally referred to as Desk #1 and Desk #2. The provision of the second desk, as a studio floor control or theatre stalls rehearsal desk, is optional.

Each "logical" user control surface may be supplied in one or two physical 'pods' as required.

Remote control of basic channel level setting functions can be achieved by use of up to four portable hand held Riggers or a Designers control: A Designers control may also be used in conjunction with an infra–red data link.

2. 2. CONTROL HIERARCHY

Galaxy operates with a **Latest–Takes–Precedence** (LATP) action between channel controls and playbacks, and **Highest–Takes Precedence** (HTP) between these and up to twenty fully overlapping preset stores (also known as submasters). The output of the integrated programmable effects system is also combined using HTP.

The **'Latest–Takes–Precedence'** philosophy, means that the level of each channel is always determined by the last action which involved that channel.

The Group Masters work in conjunction with the Channel controls with LATP action.

Galaxy's Preset Masters may also be used as inhibitive submasters, thus converting to a **Lowest–Level Takes Precedence** (LOTP).

This combination of control hierarchy offers a most flexible control in both rehearsal and performance and allows the Galaxy to operate both Crossfades and multiple Movefades.

2. 3. BASIC SYSTEM CONFIGURATION

A basic Galaxy system comprises a minimum of :–

Electronics Crate fitted with :

Power Distribution Unit
Power Supply (+5v, +/– 15v)

APC–Master processor
Communications processor
Video processor
CMOS Memory card
Multimux Dimmer processor

Desk pod fitted with :

Power Supply Unit (+5v, +/–15v)

Memory/Mimic/Output panel
Channel Control panel
Playback panel (Standard/Studio/Advanced as required)

Alpha–numeric keyboard

VDU – Used for display of all system outputs and parameters

2. 4. ADDITIONAL HARDWARE OPTIONS

2. 4. 1. CONTROL PANELS

- Channel Control (up to 4 per system)
- Group Masters (1 per Channel Control)
- Playback (up to 4 per system)
- Programmable Effects
- Preset Masters [10 presets] (up to 2 per system)
- Motion Control (up to 2 per system)

2. 4. 2. ANCILLARY EQUIPMENT

- VDU (up to 4 per system) . As an option, monochrome monitors may be added. These permit the Galaxy screens to be reproduced in locations such as the Prompt Corner and the Production Desk.
- Rigger's control (wire link)
- Designer's control (wire link or Infra–red). Designer's Infra–red receiver
- Printer
- Geographic Button Mimic
- Dimmer Fault Detection (for use with dimmers fitted with DFD)
- Demultiplex Electronics (for use with non–multiplexed dimmers)
- Blanking Panel
- Custom Personality Configuration (EEPROM)

Additional processing electronics, fitted to the Main Electronics crate are required in conjunction with some of the above options.

2. 4. 3. BACK UP EQUIPMENT

(To allow continued control over lighting in the unlikely event of a system failure).

- Memory Back up system – combined with floppy disc storage unit. (768 dimmers max.)
- Dual – Electronics (a duplication of all main electronic assemblies).

3. Basic Operation – Tutorial

This section is designed to get your system up and running quickly and allow you to master the basic functions and get a general 'feel' for the Galaxy system.

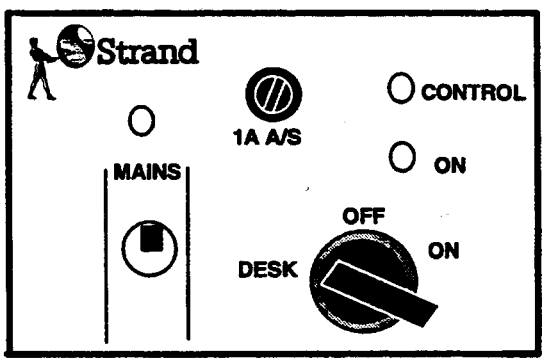
> **Note:–** References to actual modules are always indicated in **block** lettering in this section.

3. 1. TURNING THE SYSTEM ON

Before any lighting may be controlled the mains supply to the dimmer racks must be turned on.

If the mains supply to the Galaxy electronics rack is off, this should also be energised. The electronics crate PDU (Power Distribution Unit) houses a mains on/off contactor which may be remotely operated from the control pod. If power is applied to the input of the contactor, the red LED below the Off/On/Standby keyswitch on the Power and Mimic panel will illuminate. If not, turn the PDU circuit breaker on and the contactor control switch to 'Desk'. (see figs. 3.1 and 3.2)

Fig. 3.1 Power Up via contactor



To turn on the Galaxy system a key (TOK3) should be inserted into the Off/On/Standby switch and turned 90 degrees clockwise to the ON (1) position. Immediately the system will enter its power up procedure. For a few seconds the alarm will sound and displays will be initialised. A little later the VDU display will fade up as the monitors stabilise. If there is no response check that the circuit breaker on the rear of the Control Pod chassis is on.

Fig. 3.2 Switching On

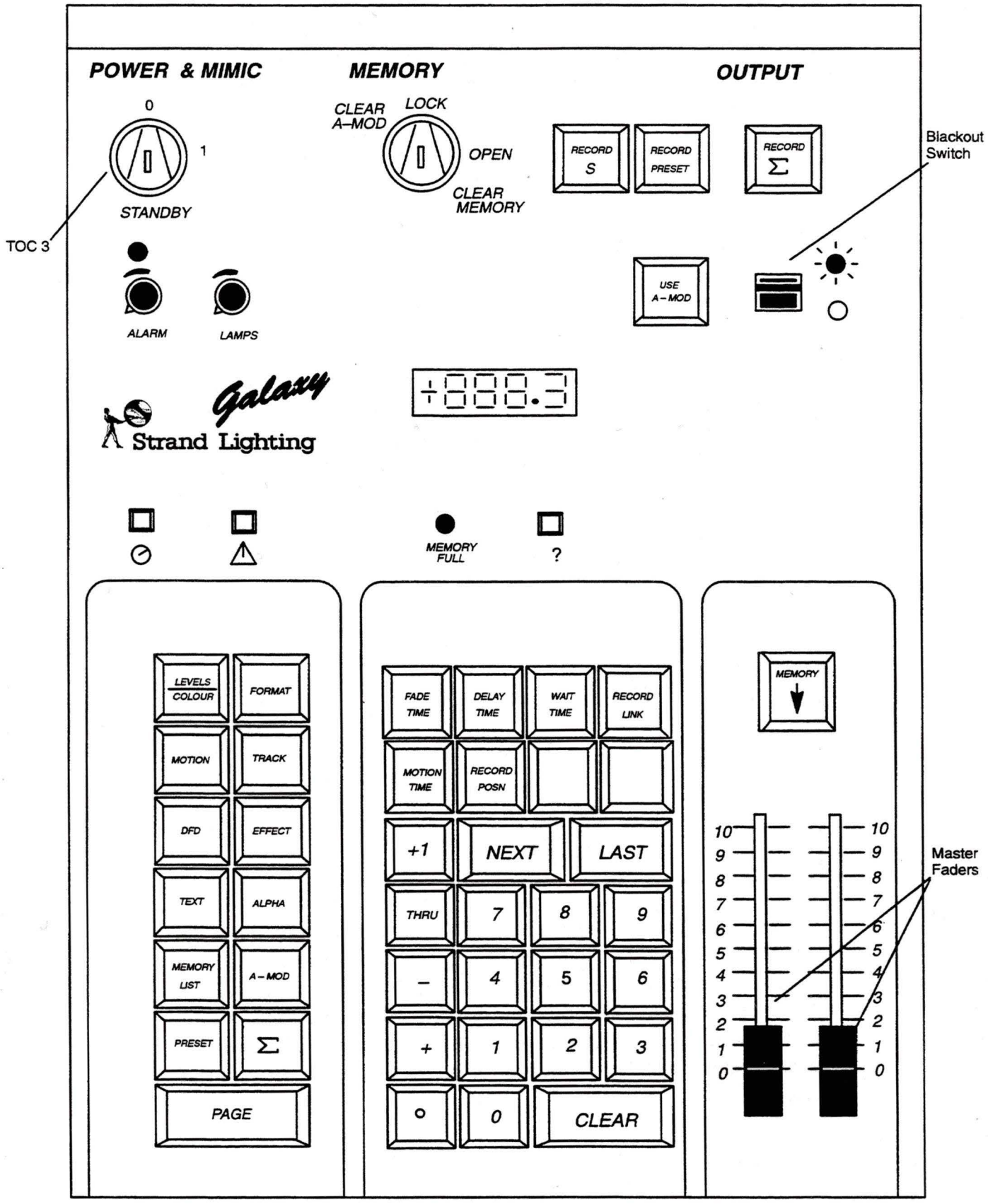
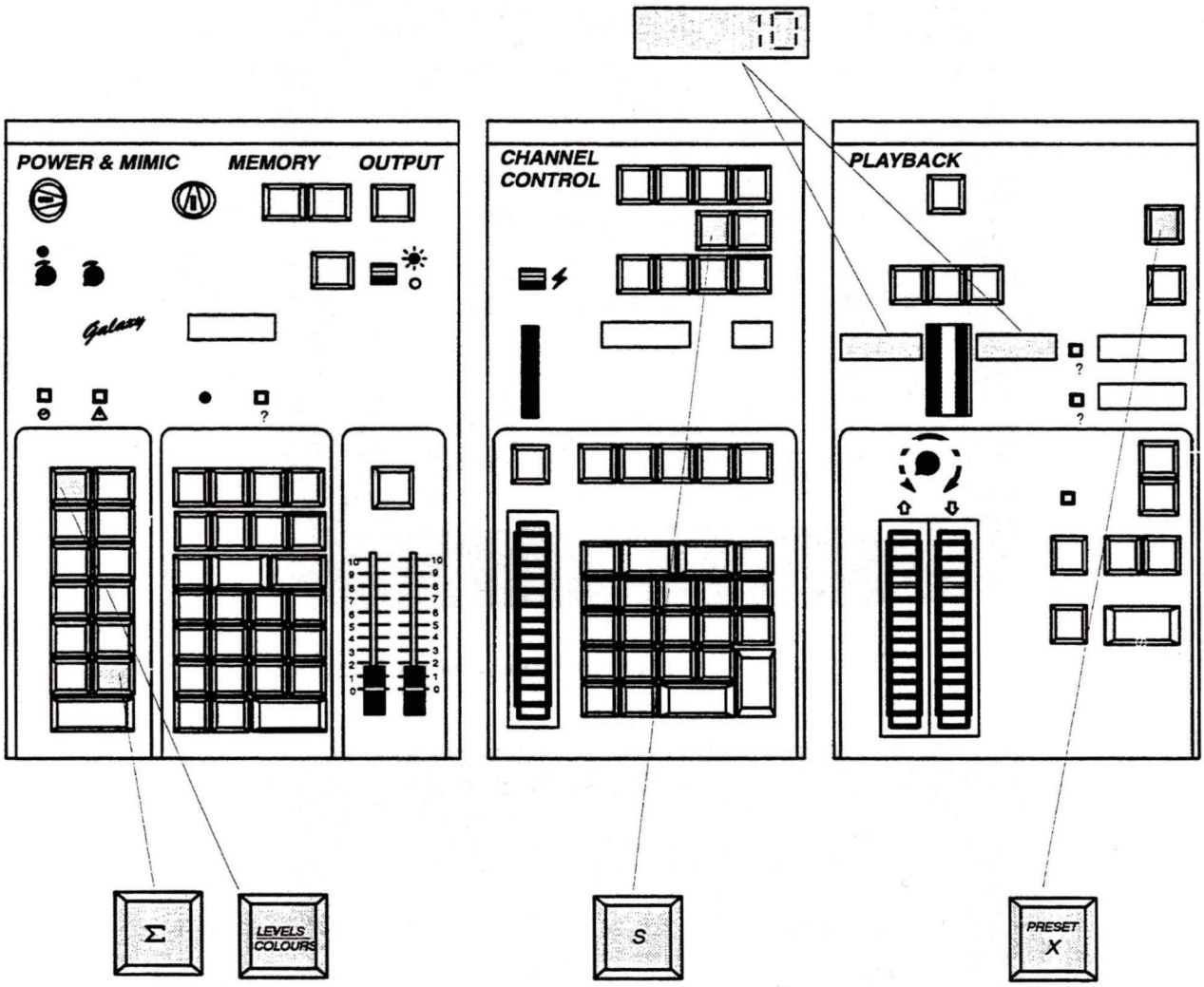


Fig. 3.3 System on Power Up



The initial state of the system after power up is as follows:–

a) The following buttons will illuminate:– LEVELS/COLOURS, RECORD Σ (**Memory** panel). PRESET X – if fitted (**Playback** panel). S (**Channel Control**).

If the Motion Control Panel is fitted – BLIND will light, STOP will flash and 'FREE' will be displayed in the allocation windows.

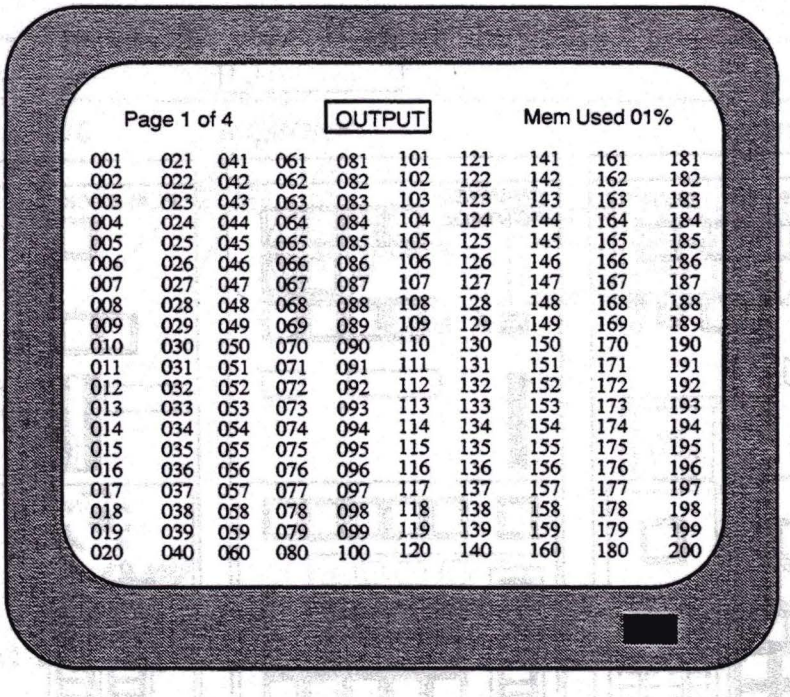
b) All windows on **Memory, Channel Control, Playback,**(except fade times) and **FX** panels will be blank.

c) Playback fade times to default as previously set (see CUE EDIT section). The example above shows 10 secs.

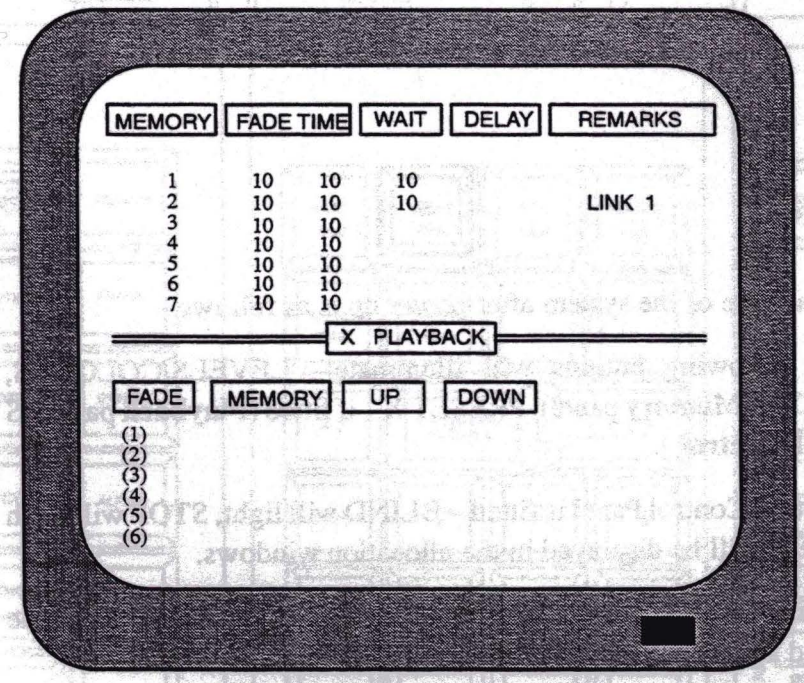
d) VDU displaying OUTPUT/ CHANNEL LEVELS according to option previously selected (see KEYBOARD section).

e) Depending on the option previously selected alighting state may be restored.

Fig. 3.4 VDU Screen option on power up



Output Screen



Auxiliary Screen

Once the system has set itself in the above state and the alarm has muted, lighting may commence.

3. 2. GETTING LIGHTS UP

Before starting to light, ensure that the system blackout switch is not inhibiting the outputs and the system Grand Master faders are put to full. (10)

- Check that the 'S' key is lit on the **Channel Control**.

- Enter the first channel number on the **Channel Control** keypad. (The number entered will be echoed in the display window above the keypad).

- When the adjacent fader wheel is moved away from you, the circuit will be taken under control.

- This will now appear in reverse video on the VDU with its level shown alongside and will also be indicated on the bar graph.

- The luminaire will now fade up.

A channel level of zero is regarded as OFF and on the VDU this channel will be dim with the level – blank

A channel level above zero is regarded as being ON and the VDU will show this channel and the level in inverse video as normal.

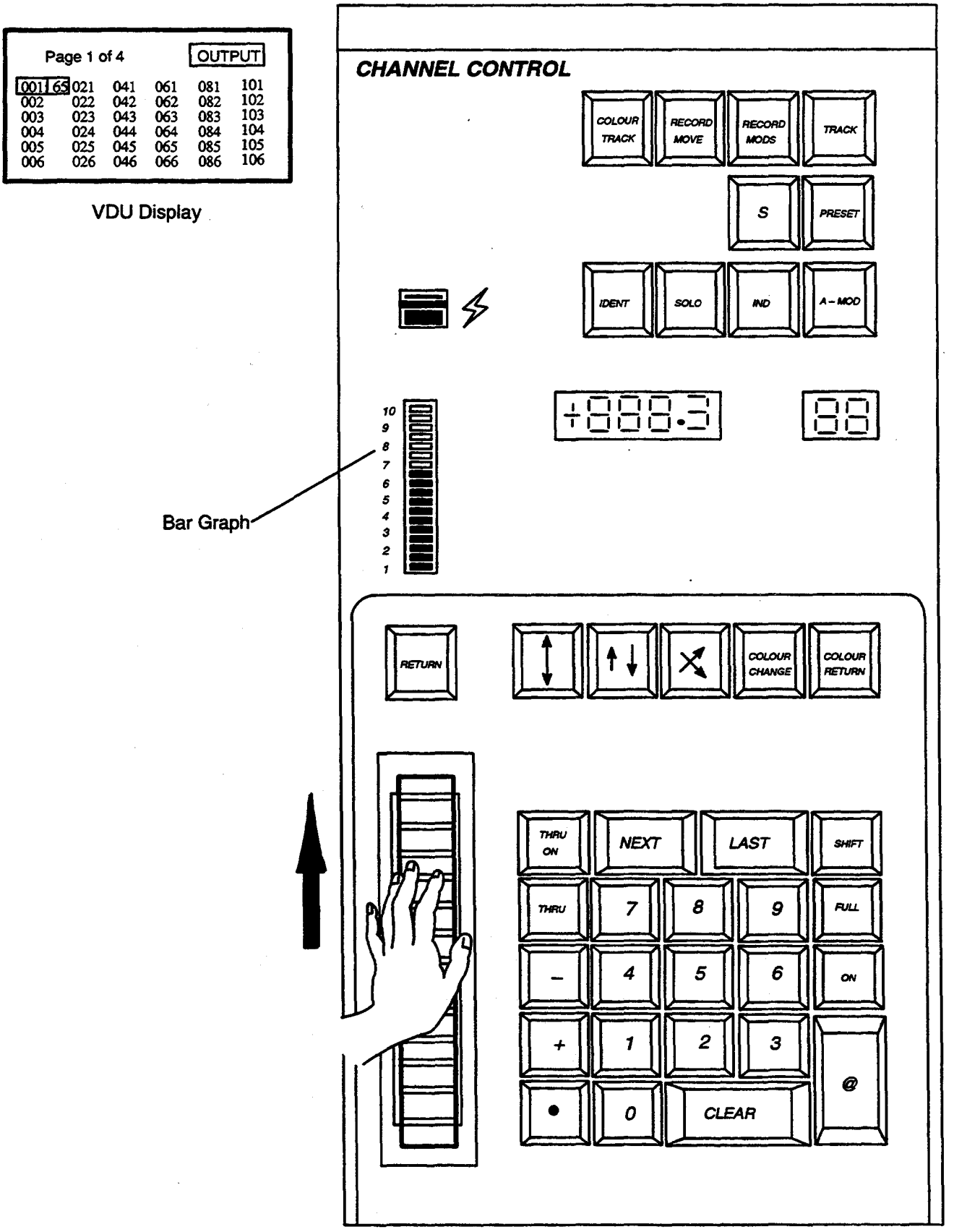
Once set to the required level, the next channel to be controlled may be keyed in and the procedure repeated ad infinitum. There is no need to press the 'CLEAR' key between successive channel entries as the system assumes that once a channel has been controlled the next key entry will be the next channel number required.

In this way channels are set one at a time until the complete scene has been built up.

3. 3. MODIFYING THE LEVEL OF A CHANNEL THAT'S ON

This procedure is identical to that just outlined. The fader wheel has no absolute top or bottom and so does not require matching to a current level. The channel is simply keyed in again and the wheel moved up or down to the new level as indicated on the bar graph display.

Fig. 3.5 Getting Lights Up



3. 4. RECORDING A SCENE

Once a lighting state has been set up to your satisfaction, it may be recorded in the system memory. It is important, at this time, to know if previously recorded memories are still required – whether they may be erased or should be preserved. A continuous sequence of numbers large enough for all the memories required should be defined.

The range of memories is .1 to 999.9. Normally 1 to 999 is used with the 'decimal point' numbers being left for inserting memories at a later stage, if required.

- Enter first memory number on the **Memory** keypad (e.g. 12). Display will now show this number.
- Insert a key (TOK4) in the MEMORY LOCK switch and turn it 90 degrees clockwise to the OPEN position.
- Press the Red 'RECORD Σ' key once. (The state is now recorded).
- A successful recording is indicated by the key lighting for about 2 secs. If the system alarm sounds and the key does not light, one of four errors has occurred.

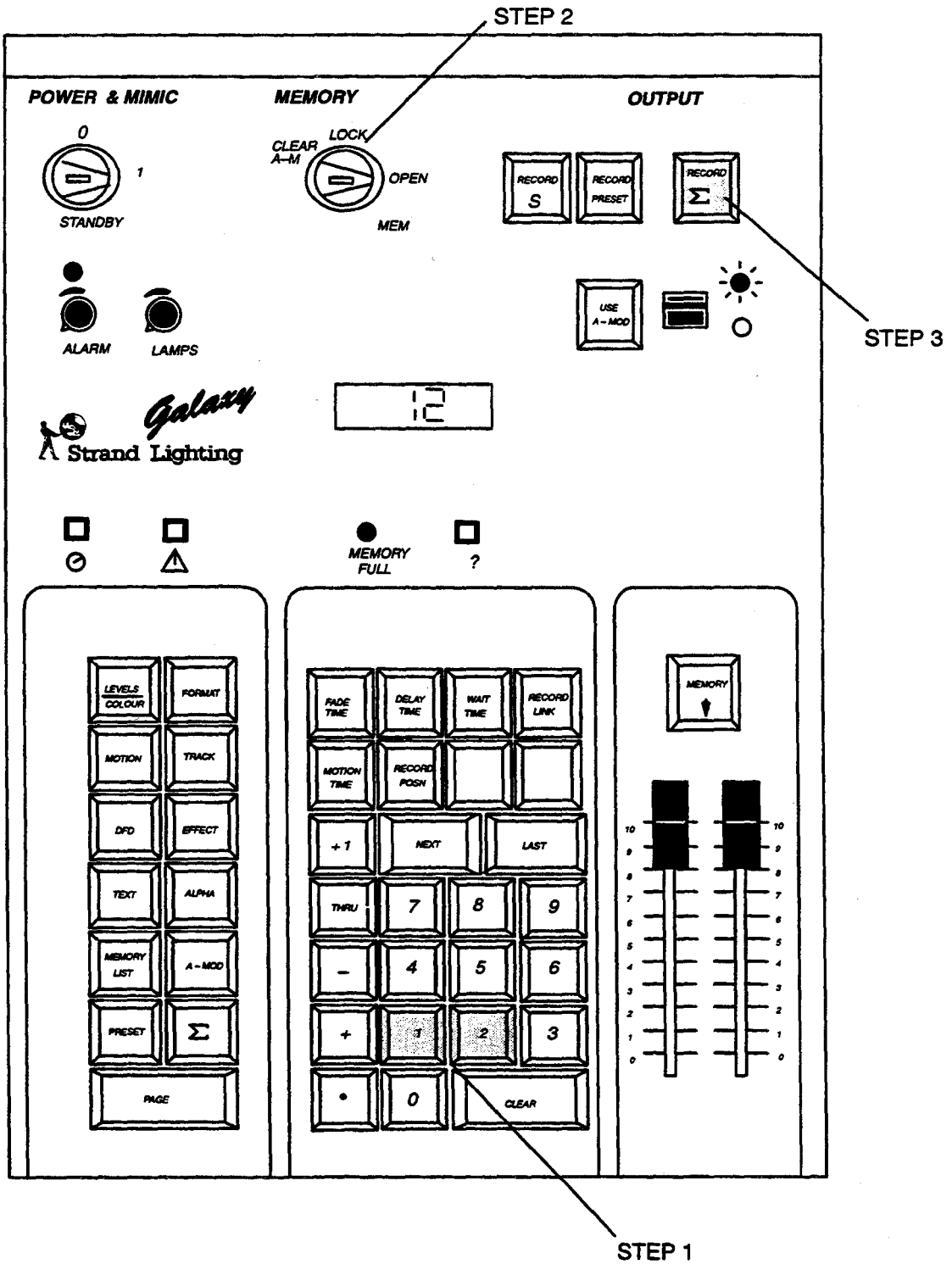
1) The record lock is in the wrong position.

2) No memory number has been entered.

3) The selected memory number had previously been recorded. If you intend to over–write a previously recorded memory, the record push should be pressed twice within 1 sec. The old memory will then be erased and the new state recorded.

4) The memory is full. In this case a VDU message will be given and the MEMORY FULL indicator will light.

Fig. 3.6 Recording

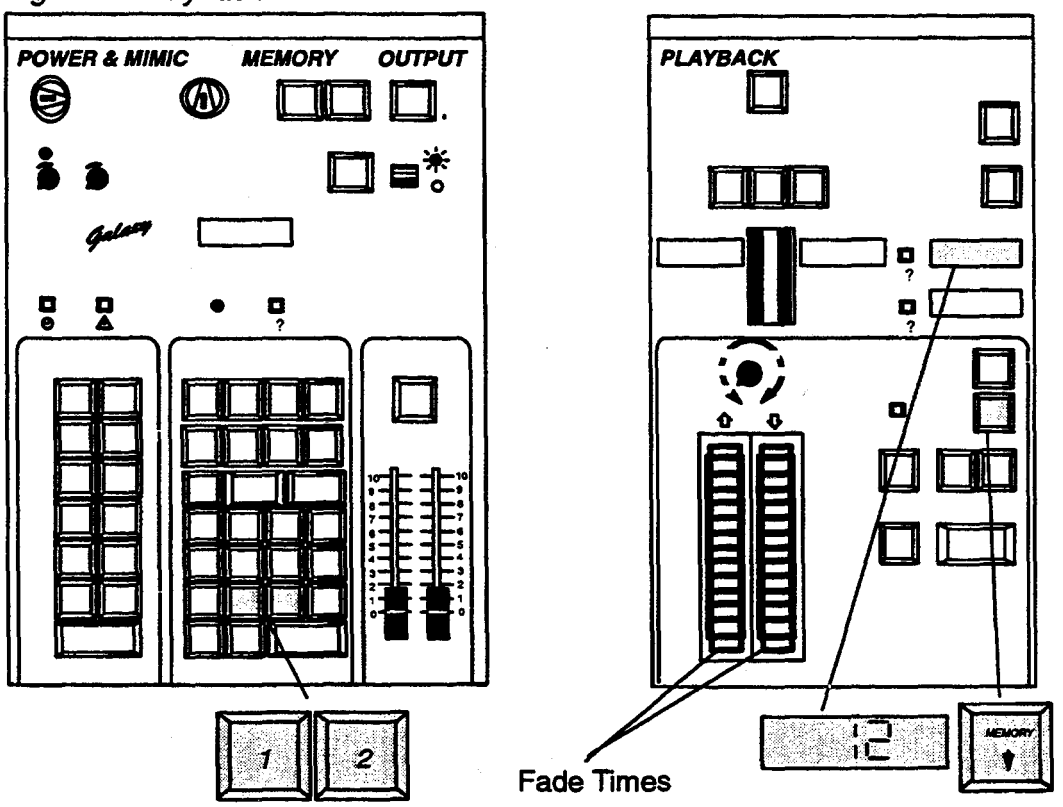


3. 5. PLAYBACK OF MEMORIES

The simplest form of Playback is achieved by Cutting to the 'S' store using the white memory button above the Master faders.

To fade in a pre–recorded state, the memory number corresponding to the required lighting state is entered on the **Memory** keypad. This memory must then be transferred to the PRESET or 'next' store of a **Playback** panel by use of the green Memory Transfer button. On transfer the green key will light, indicating that there are some channels ON in the Preset store, and the memory number will appear in the Preset Display window. The times for the incoming lights to fade up and the outgoing lighting to fade down are set by the left and right hand wheels respectively.

Fig. 3.7 Playback

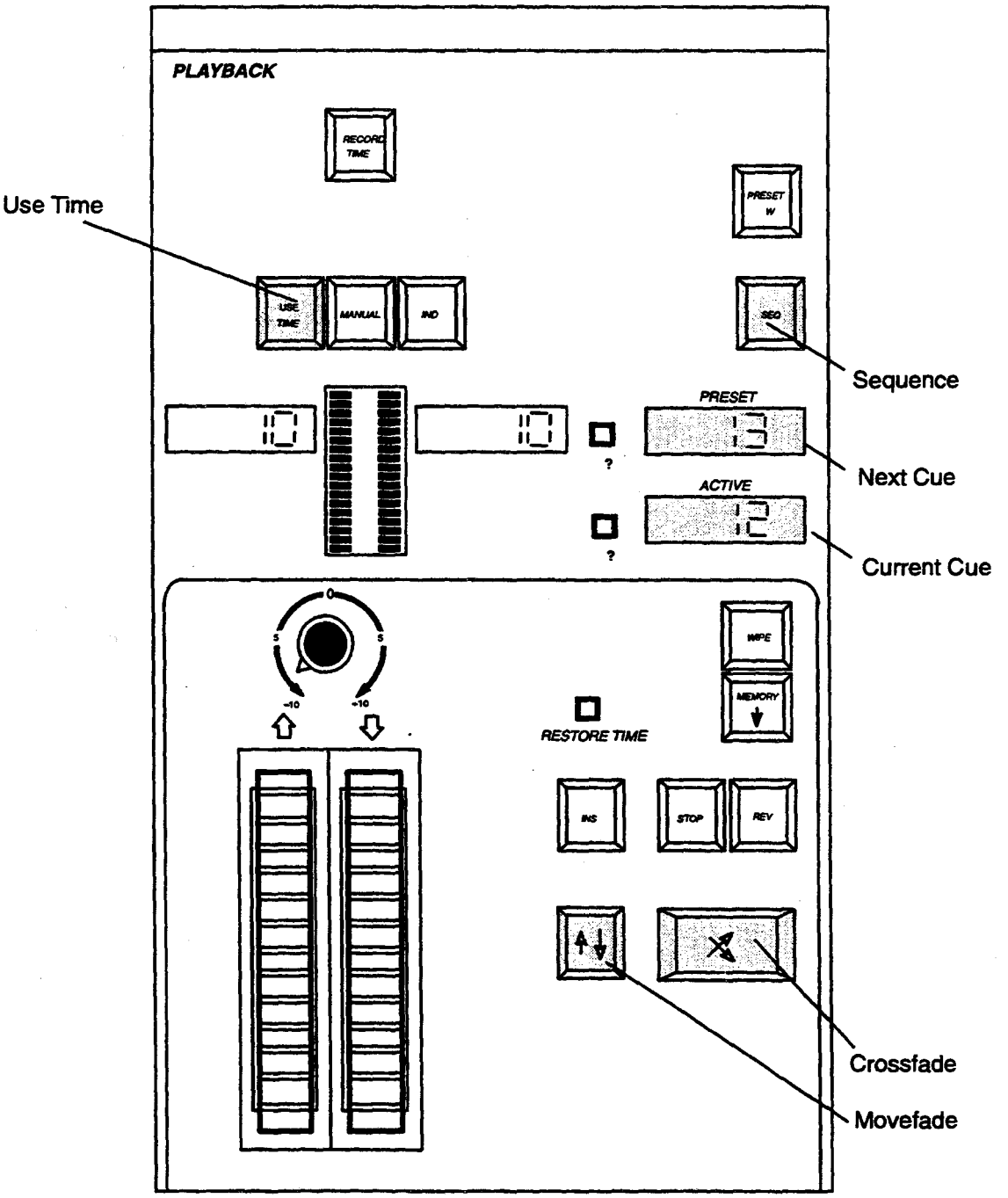


On cue – the fade is started by pressing the Crossfade ✕ or movefade ↑ ↓ buttons. It may be speeded up or slowed down at any time by using the wheels.

Once a fade has been started the next memory number may be called up and transferred to the Preset store ready for use and the procedure repeated. The current and following cues are indicated by the ACTIVE and PRESET displays respectively. To eliminate unnecessary key pushing, an automatic sequence mode may be selected on each **Playback**. When the blue SEQ key is pressed, it lights and the next memory number in the sequence will then be automatically loaded into the Preset store each time a fade is initiated.

Facilities exist for recording the fade time with each memory. If this has been done, the USE TIME key may be pressed, causing fade times to be automatically set to the recorded time whenever a memory is transferred to the Preset store.

Fig. 3.8 Crossfades,Sequencing



Two types of fade are available on each Standard Playback:.

- *CROSSFADE*, in which the old lighting state is totally replaced by the state set in the Preset store.
- *MOVE FADE*, in which channels that are ON in the Preset store change to new levels, but channels which are off in the Preset store remain unaffected.

All fades are linear and dipless, that is to say all channels progress smoothly and directly from their current to their new levels. Channels with the same levels do not move or 'dip'.

The differences between Cross and Move fade are important, and it is a good idea to get a good understanding of them in order to avoid mistakes.

A Move–fade is best regarded as adding (or subtracting) a memory (or combination of memories) to the current lighting state.

Move–fades are often used to add channels to or remove them from an existing scene. It is possible for Galaxy to perform up to 6 Move–fades per playback, at different speeds, simultaneously.

A Crossfade substitutes the current lighting with the scene set in the Preset store, including channels which are not ON in the Preset (which will fade to zero). To do this all channels are taken under control and clearly only one Crossfade may take place at a time, the latest cancelling any previous ones. Similarly, a Crossfade will cancel any Move–fades in progress. The exception to this occurs if a **Playback** is already running an Independent fade, in which case the first (independent) fade will continue unaffected.

Galaxy will allow many simultaneous Move–fades, up to 24 split up–and–down–fades may be in progress at different rates allowing very elaborate multipart changes to be carried out with relative simplicity.

Blackout

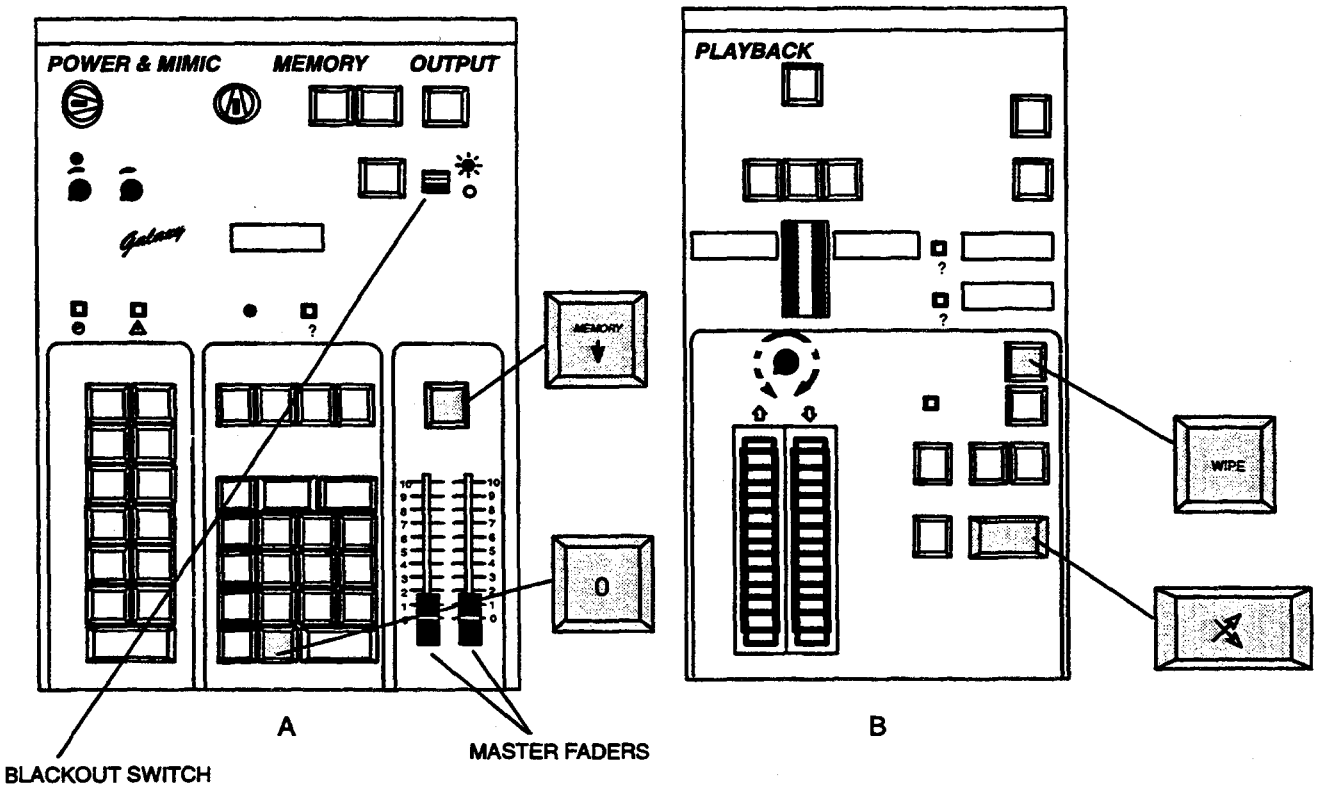
A temporary black–out state may be achieved by operating the Blackout switch on the output panel. A fade to black can be achieved by bringing down the Master faders.

Clearing the Output Store

A) Transfer memory number 0, either directly to the S store, or to a Playback's Preset store.

B) Use WIPE to empty the playback preset store and initiate a Crossfade action.

Fig. 3.9 Clearing the Output Store



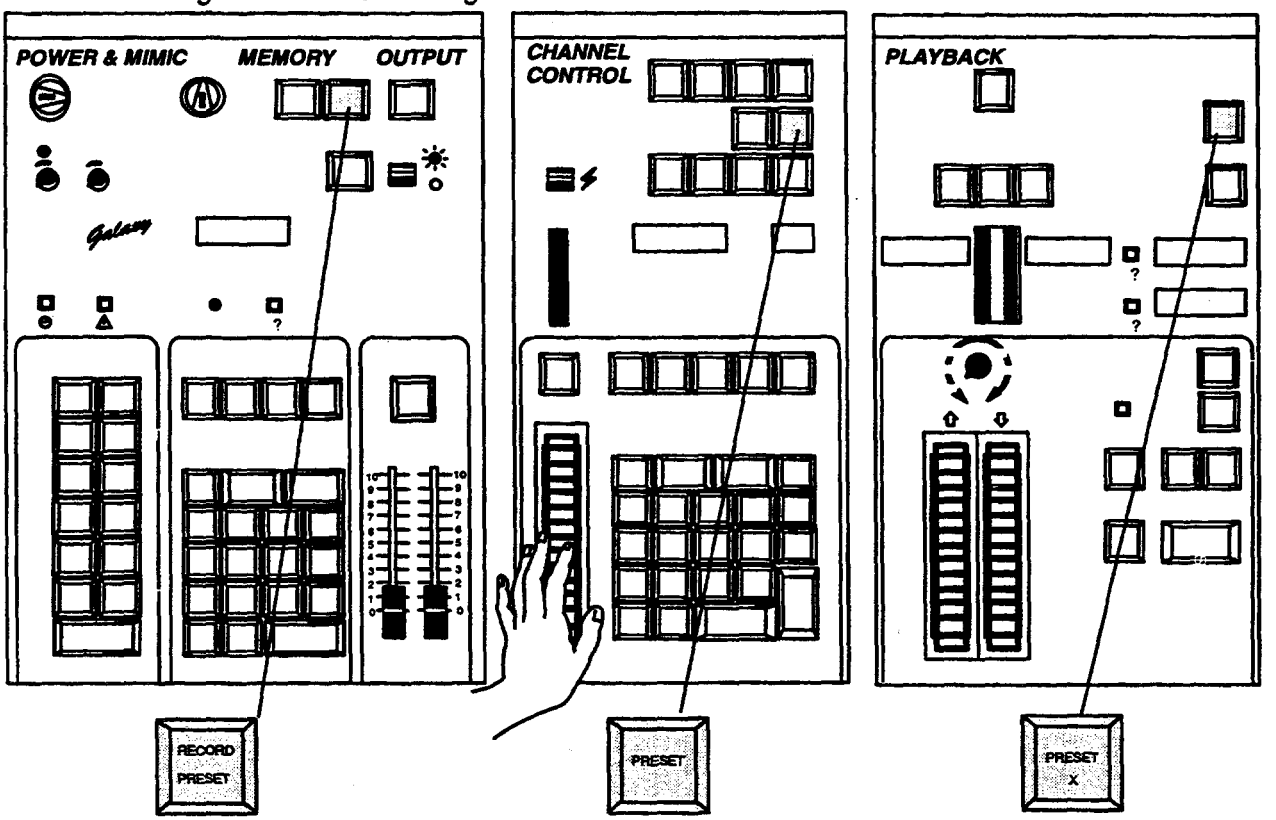
The Studio Playback, if fitted, has a white WIPE button specifically for cancelling this store.

3. 6. 'BLIND' PLOTTING AND MODIFICATION

Should it be necessary to set up or modify a memory without the lighting being seen, the **Channel Control** should be routed to PRESET by pushing its green button. Any channels now modified by the **Channel Control** will be set in the **Playback** Preset store indicated by the corresponding green light. If only one **Playback** is fitted this is usually PRESET X. If there are more it could be W, Y or Z or **Preset Masters** A–L, M–V.

The modified lighting state in the selected Preset store may be recorded by selecting the memory number in the usual way, but pressing the RECORD PRESET key rather than RECORD Σ on the **Memory** module.

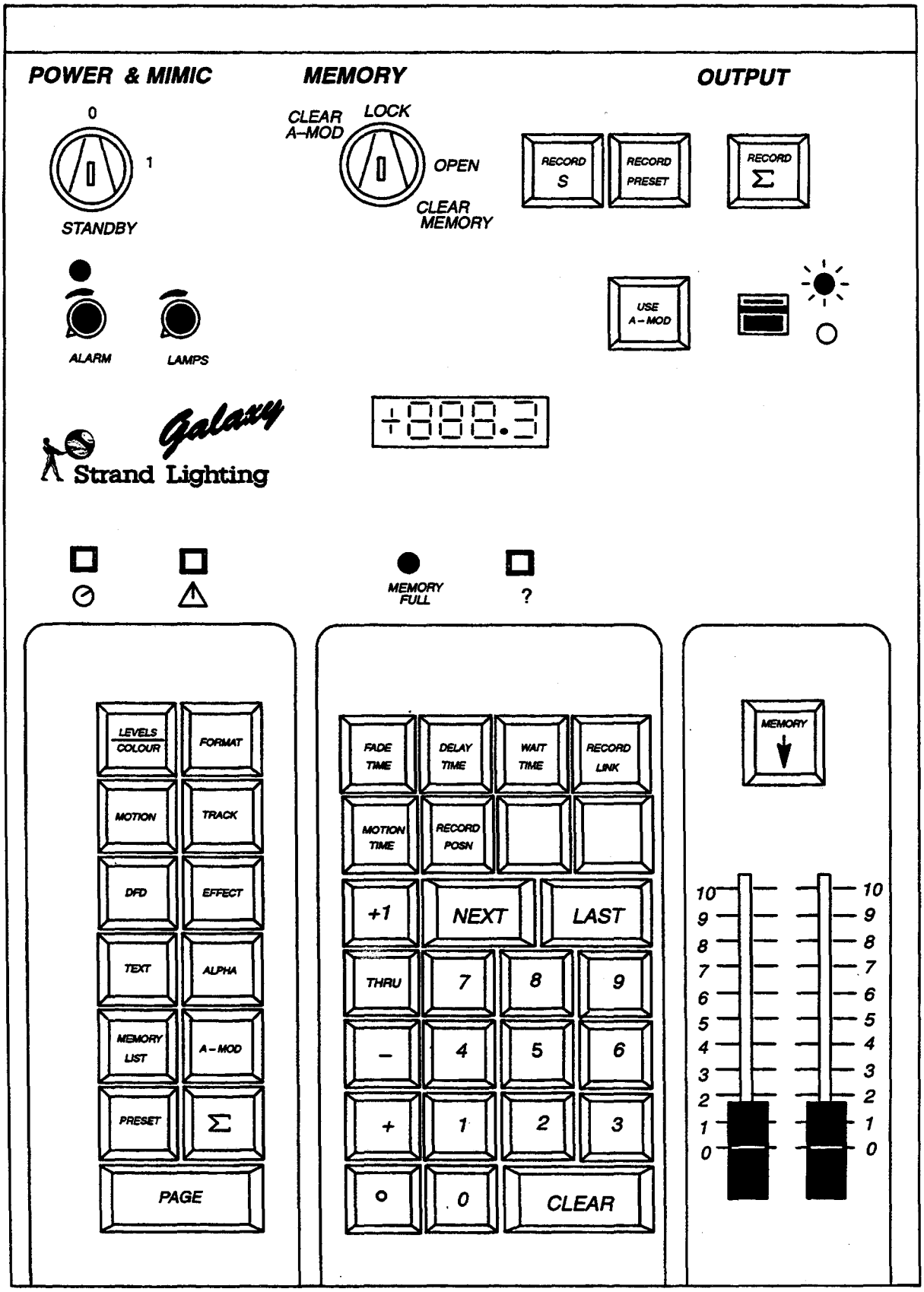
Fig. 3.10 Blind Plotting



REFERENCE SECTION

4. Memory/Mimic/ Panel

Fig. 4.1 Memory/ Mimic/Output Panel – Advanced Version

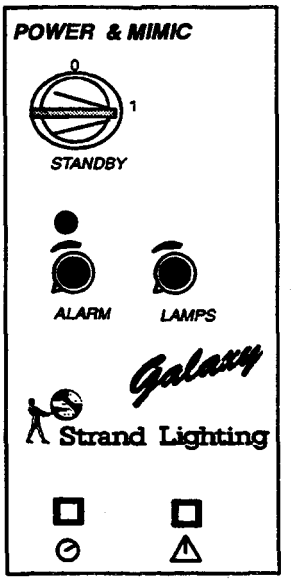


4. 1. POWER & MIMIC

This panel is divided into three sections: POWER & MIMIC, MEMORY and OUTPUT. The Power and Mimic comprises of a main on/off key switch, audible alarm and lamp intensity control and stopwatch, together with VDU routing keys.

There are two versions of this panel, A Studio version and a Theatre version. The following descriptions refer to the Theatre version. The studio configuration is covered at the end of 4.1.5

Off/On/Standby Keyswitch (TOK 3 KEY)



The On/Off contactor which controls the mains feed to the electronics crate power supplies and to the Galaxy peripherals may be actuated remotely by this keyswitch

Provided that mains is connected to the Power Distribution Unit, the system is switched on by turning the key 90 degrees clockwise from the 0 to the 1 position, after which the desk will Initialise as described in 3.1. The key may then be removed to eliminate the risk of accidental switching off.

If the key is rotated a further 90 degrees to the STAND–BY position, all panel controls (excluding the blackout switch) are disabled, the key may then be removed. This allows the system to be left unattended with lights set up, safe from unauthorized interference.

Alarm Control

Allows the volume of the warning bleeper to be adjusted.

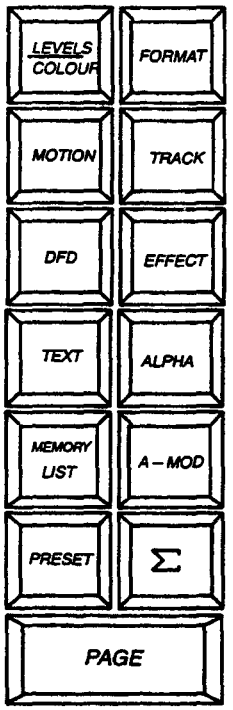
Lamp Intensity Control

Allows the brightness of the illuminated keys and some numeric displays to be adjusted to suit the ambient lighting in the control room. Too much glare from the panels will distract your attention and affect viewing of the scene, whilst a key that is very dim may be overlooked.

The system clock, normally displayed on the bottom of each VDU screen, may also be used as a simple stop–watch, and is controlled from this panel. A single push allows reset to 00:00 and commencement of the timing period. A second operation stops the timer. The control must be held down for 2 seconds to return to normal clock time display.

Clears VDU error/warning messages – except in some cases where the error condition itself has not been cleared.

Mimic keys



The Mimic routing keys allow the following to be displayed on the VDU:

Levels/Colour Selects channel displays between showing levels or colour positions in addition to the channel numbers. Shows levels when lit.

Format is used to set a position on the monitor for each channel used in the memories selected on the memory keyboard using THRU, or to set Format limit mode.

Motion Displays Position control output and movement history of devices such as PALs units.

Track Displays the levels of selected channels within a range memories.

DFD Displays output channel levels with any Dimmer or load faults superimposed.

Effect Display status of active Effects, or Effect set–up information.

Text – Displays complete Memory Text for the selected Memory number. If no memory is selected then 'System Text' is displayed.

Alpha – Displays the activity on the keyboard.

Memory List – Full list of all recorded memories and Effects

A – Mod – Displays current contents of Auto–Mod store.

Preset – Displays channel levels in selected preset Store.

Σ (Output) – Displays the channel levels/colours which constitute the system Output.

Page – Displays second and subsequent groups of 200 circuits where applicable or additional pages of displays which cover more than one screen.

Note:– A full explanation of the VDU mimic displays is covered in **Alpha –Keyboard** section 11.

4. 2. MEMORY SELECTION

General

The MEMORY keypad is used to select the number which identifies a particular lighting state in the system memory. This is the number which will be used when a record key is pressed and when a recall to a playback store takes place.

Any number between 1 and 999 may be selected on the keypad and a lighting state may be recorded in the associated memory. In addition, nine memory numbers, identified by a digit following a decimal point, are available between each whole number, e.g. 32.1, 32.2, 32.3, etc.

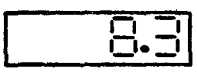
Normally, when recording, whole numbers would be used first (1, 2, 3, etc.) and then if, for example, it became necessary to insert a state between memory 2 and 3, for example, memory 2.5 could be used.

The number selected is also used when any Record or Playback Transfer key is pressed on the other panels within the pod.

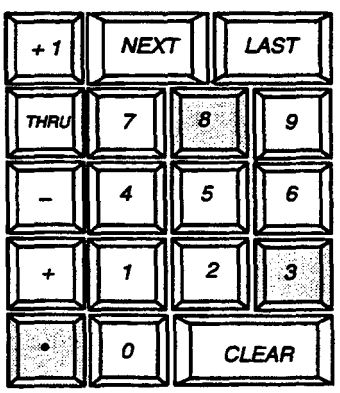
The Memory Pad

Selection of memory numbers for recording or transfer to **Playbacks** is carried out on the numeric keypad. This keypad is also used to enter a range of memories for further processing.

Numbers are entered with the most significant digit first. The entry will be displayed in the window above the keypad. Leading zeros need not be entered as these are ignored and not displayed.



Once a memory number has been used for recording or playback, or has been interrogated, any subsequent entry on the keypad is assumed to be a new number. This obviates the need to press CLEAR before every entry. The CLEAR key need only be used if a wrong number has been typed in or if memory 0 (which is always a blackout) is required.



If an attempt is made to recall a memory number which has not been recorded, the system warning will 'bleep'. The number is then regarded as having been used and any subsequent entry will be treated as a new number.

NEXT steps the number to the next highest memory number recorded; LAST steps it back to the preceding recorded memory, rolling through zero.

Increment Memory Number

In order to speed–up the selection of memory numbers when recording, the <+1> key in the top left–hand corner of the memory keypad may be used to increment the selected memory numbers. Unlike NEXT and LAST, the corresponding memory need not already exist. Note that in the case of memory numbers which include a suffix, e.g. 137.2, the next whole number will be selected – in this case 138.

THRU (Through)

The THRU key is used when selecting a range of memory numbers upon which some action is to be carried out. Such actions include:

1) Transfer of memories from system to Floppy Disc.

2) Transfer of memories from Floppy Disc to system.

3) Defining memories to be used in Resetting the Mimic format.

4) Modifying memories by Memory Track.

The action of the THRU key is the same in all cases. The first memory required is entered, THRU is pressed and lights, the last memory to be included in the range is then entered and the required action instigated, causing the THRU lamp to be extinguished and the last number in the range to remain in the memory display window. In such an action only the last memory remains selected, and if it is necessary to repeat the action the range must be re–entered.

> **Note:–** The THRU key may not be used to select a sequence of memories for recall on a **playback.** In this case, only the last selected memory will be transferred.

Combining Memories by the Plus (+) and Minus (–) Keys

These keys may be used to prefix a memory number and will affect the way in which the memory combines with the current contents of the Preset or 'S' store when the transfer key is pressed.

Adding Memories

Any memory may be added to the existing channels set in a Preset store or the system's live 'S' store by prefixing the memory number with '+' on selection. While a normal transfer would totally substitute the previous lighting in the store with the selected memory, a memory with a plus prefix will simply add in the extra channels at their memorised levels.

A channel which was previously ON in the store and is also ON in the newly added memory, will be set to a level in accordance with the 'Latest–takes–precedence' philosophy. By this method of transfer, memories may be combined in a Preset store (one at a time) before presentation.

Subtracting Memories

If a memory number is prefixed with minus, the channels which were ON in the memory will now be set to zero in the Preset store when transferred. In this special case, channels which have been subtracted from a preset store will dim to zero if a Move–fade is subsequently initiated. If a minus memory is transferred directly to the output, those channels will be set to zero in the output store.

Note:– '+' or '–' prefixes will be ignored if the number is used for recording.

Memory Interrogation [?]

The small mimic push below the memory number window (labelled ?) changes the mimic display when held down. In this case, the lighting state recorded in the selected memory is shown. The display title is changed to **MEMORY xxx.x** and the bottom lines of the screen show the time, the link and one line of the text recorded on that memory number.

Memory Full Warnings 

The number of memories available to a Galaxy system is dependent on the capacity of the memory fitted and the number of channels ON in each state recorded. A tally of memory used is, therefore, constantly shown on the top line of the VDU. If an attempt is made to record a memory which requires more space than is available the action is aborted and the following error indications given:

1) System warning 'bleeps' momentarily.

2) MEMORY FULL message on VDU.

3) MEMORY FULL LED lights.

4) RECORD push does not light.

The only immediate action possible is to clear some memories, if necessary first storing them on a disc. As a longer term solution, an additional memory card may be fitted.

Note:–Prior to the MEM FULL message appearing, a warning will appear saying LESS THAN 10% MEMORY LEFT. (91% used).

The error messages may be cleared by pressing the ERROR button. However, if the memory is totally full the MEM FULL LED will remain lit.

Note:– Other stored data such as patch, profiles, text etc. will also fill up the systems memory.

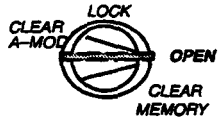
Clearing Memories

It is not strictly necessary to clear a memory before that number can be used to record again, as a recorded memory will be overwritten if the record key is pressed twice in quick succession. However, when lighting a production it is sometimes desirable to start with a 'clean slate' so that old and new lighting does not become confused, and the progress of recording can be clearly seen on the VDU Memory List .

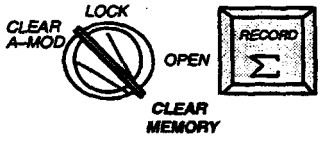
It is sometimes desirable to only clear a range of memories and retain others such as 'building block' groups or cues.

By using the THRU key to set a range of memory numbers, any or all memories may be erased. The memory clear operation is interlocked to prevent accidental erasure, and the following procedure is required to access it:–

1) Select the memory (or range of memories) to be cleared.



2) Insert key (TOK4) into the record lock and turn 90 degrees clockwise to enable recording.



3) Rotate the key a further 45 degrees, against the spring to the CLEAR MEMORY position and while holding it there press 'RECORD Σ This requires the use of both hands.

The 'RECORD Σ' key will light momentarily, the THRU key will be extinguished and the memory used count in the VDU will update as extra memory becomes free.

Memory Number Zero

This memory number is particularly special in Galaxy systems. It is not possible to record levels on memory zero and, when transferred, the memory will be treated as a blackout state. Similarly it is not possible to record a time for a fade to memory zero, nor can links be made to or from it. The data recorded on this memory cannot be cleared in the normal manner.

Memory zero may have text associated with it, referred to as SYSTEM TEXT (see section 11.3).

Other system data, in particular the variable system parameters set by the alpha–numeric keyboard, are regarded as part of memory zero for the purposes of disc transfer. If zero is included in the memories transferred, then this data will be over–written. If not, it will remain unchanged.

The data stored on memory zero includes patch channel numbers to dimmer numbers, channel allocation to master faders, channel allocation to fade profiles, effects and other features. All these will be transferred to and from disc, as required, if memory zero is transferred.

Memory Initialisation

Should the Memory Directory fail, due to discharged batteries for instance, the entire memory must be cleared and re–initialised. Initialisation will also be necessary if a memory circuit board has been exchanged for any reason.

The procedure for memory initialisation is as follows:–

Enter 0 THRU 999.9 on the memory keypad. Follow steps 2–3 as previous procedure.

The message PATCH NOT PERMANENT will appear if the memory has been correctly initialised.

The entire system memory will be erased, and a new directory written. It should be noted that this procedure will erase memory zero, clearing the variable system parameters. It will then be necessary to re–enter this data, either by Floppy disc or the alpha numeric keyboard. Alternatively, the previously used patch may be re–recorded from the alpha keyboard as long as this is done prior to switching off the system

Note:– . Initialisation of the memory will also erase the instructions held in the Auto–Mod store.

4. 3. RECORDING

The Galaxy system architecture enables you to set up a lighting scene, modify it and then, when satisfied, record it in the system memory. The data is not stored in the system's long term memory until a RECORD key is pressed.

Record actions are disabled in the following cases:

1) If the Memory Lock keyswitch is not open.

2) If no memory number is selected.

3) If the system's memory is full.

4) If the memory number has previously been recorded. However, in this case a second push (within 2 seconds) will overwrite the old memory.

RECORD Σ

When pressed, this key copies the total lighting state currently seen, into the selected memory number. Lighting contributed by the **Preset Masters** panel (if fitted) is included.

> **Note:–** This total output will include that supplied by the **Effects** panel as well. You should stop all effects while a total recording is done, otherwise unwanted circuits may suddenly 'appear'.

The state recorded includes the effect of the Grand Master Faders and is the state displayed on the VDU when Σ is selected.

Recording may take place at any time, even while fades are in progress, the lighting set up remaining totally unaffected. However, recording during Disc transfer is not recommended.

RECORD S

As above but the state recorded is not affected by the Grand Master Fader positions and does not include lighting contributed by the **Preset Masters** or **Effects** panels.

RECORD PRESET

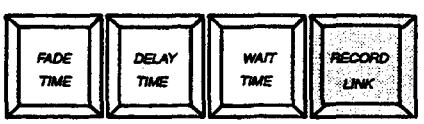
When the RECORD PRESET key is pressed, the lighting in that Preset store which has its green PRESET key lit, is copied onto the selected memory number.

In the case of the **Preset Masters** panel, the contents of the selected Preset store concerned will be recorded (ignoring the effects of the Preset fader, the 'xl.5' mode and panel master fader).

USE A – MOD

The USE A–MOD KEY will activate or de–activate Auto mod operations. Auto Mod is covered in detail in section 5.3 of this handbook.

RECORD LINK

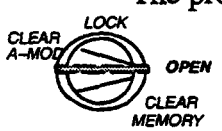


Under normal circumstances a **playback** operating in 'SEQUENCE' mode will automatically load the next highest recorded memory number into its preset store each time a fade is started. It is, however, possible to change the order of memories by recording, on any memory, a LINK message which is the number of the next memory required. This allows a string of memories to be inserted, or the running order of a show to be changed very quickly during a performance fairly simply.

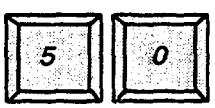
A typical example of the use of recorded links can be seen by considering the following case:–

The lighting for act 1 of a play has been recorded on memories 1 to 50, and for act 3 on memories 51 to 90. Because of the constraints at rehearsal, the lighting for act 2 was recorded last on memories 91 to 135. So that the show may operate normally in sequence, two links should be recorded. Memory 50 should have a link to number 91, and memory 135 should have a link to memory 51. The order in which the memories will be played back will then be 1...50, 91...135, 51...90.

The procedure to record the first link is as follows:

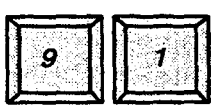


1) Ensure record lock is open.



2) Enter on the keypad, memory number on which the link is to be recorded.

3) Press 'RECORD LINK' which will light and remain lit.

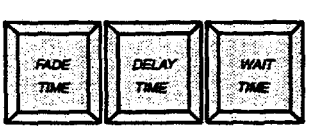


4) Enter the memory number it should be linked to.

5) Press 'RECORD LINK' again causing it to extinguish.

6) Record the second link in a similar manner.

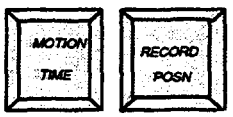
Recording a link onto an existing memory does not effect the channel levels previously recorded.



FADE TIME, DELAY TIME, WAIT TIME

These keys duplicate facilities used on the **Advanced Playback** (4.3.3) Having these facilities duplicated in the **Memory/Mimic** panel allows you more convenient control over recording of times.

MOTION TIME RECORD POSN.



These keys duplicate facilities used on the **Motion Control** panel. Having these facilities duplicated on the **Memory/Mimic** panel allows you more convenient control over recording of motion data and allows colour change cues to be recorded without the need for a **Motion Control** panel.

4. 4. OUTPUT MASTERS

The Blackout Switch

In the down position (O) this switch forces all channel output levels to the dimmers, from the main Galaxy system, to zero. Auxiliary backup systems are not affected. When returned to the up position ☀ the previous lighting is restored. The blackout switch does not stop fades from progressing, nor alter the assignment of channels to faders, (see **Advanced Playback** section 6.3 for fade control information).

When the Blackout switch is operated (i.e. in Blackout) the main LEVELS output display has the word 'OUTPUT' replaced by 'BLACKOUT' in the top centre of the screen.

If the cable labelled "control" is fitted between the control desk and the electronics rack, then an extra signal will positively inhibit all output from the Galaxy main system when the blackout switch is activated.

The Grand Master Faders

Normally only the left hand grand master fader is operational, the right hand fader having no effect. When moved from 10 towards 0 the lighting scene set on the Galaxy system (including **Preset Masters**) is proportionally faded out. Returning the fader to 10 restores the lighting. Channels do not change their assignments to fade controllers when this fader is used and all the system modes are unaffected.

If the alpha–numeric keyboard is fitted, channels may be patched to respond to the right hand grand master or alternatively to neither fader. Thus the installation may be divided into two groups with separate over–riding masters. A typical application for this may be Front–of House and On–Stage lighting in a theatre or set and audience lighting in a T.V studio.

When two control desks are fitted to a Galaxy, the Grand Master faders interact inhibitively so that the lowest level takes precedence. This ensures that the scene may be faded down from either control position.

Memory Transfers to the Output Store

The memory transfer key immediately above the Grand Master faders allows the memory displayed in the memory number window to be 'cut' immediately onto stage. No fade time is involved, and the memory will be "snapped" on. The purpose of this key is to allow memories to be replayed very quickly, without the need to use a **Playback**. The effect which is produced is that of an instant crossfade, clearing any previous lighting (unless it has been held by INDependent) and substituting the new state. Any contribution to the scene from the **Preset Masters** panel remains unaffected. Any **Playback** fades which may be in progress when the key is pressed are immediately cancelled and their channels parked. **Advanced Playback** panels also have their fade controller assignment windows cleared, and all fade controllers are released.

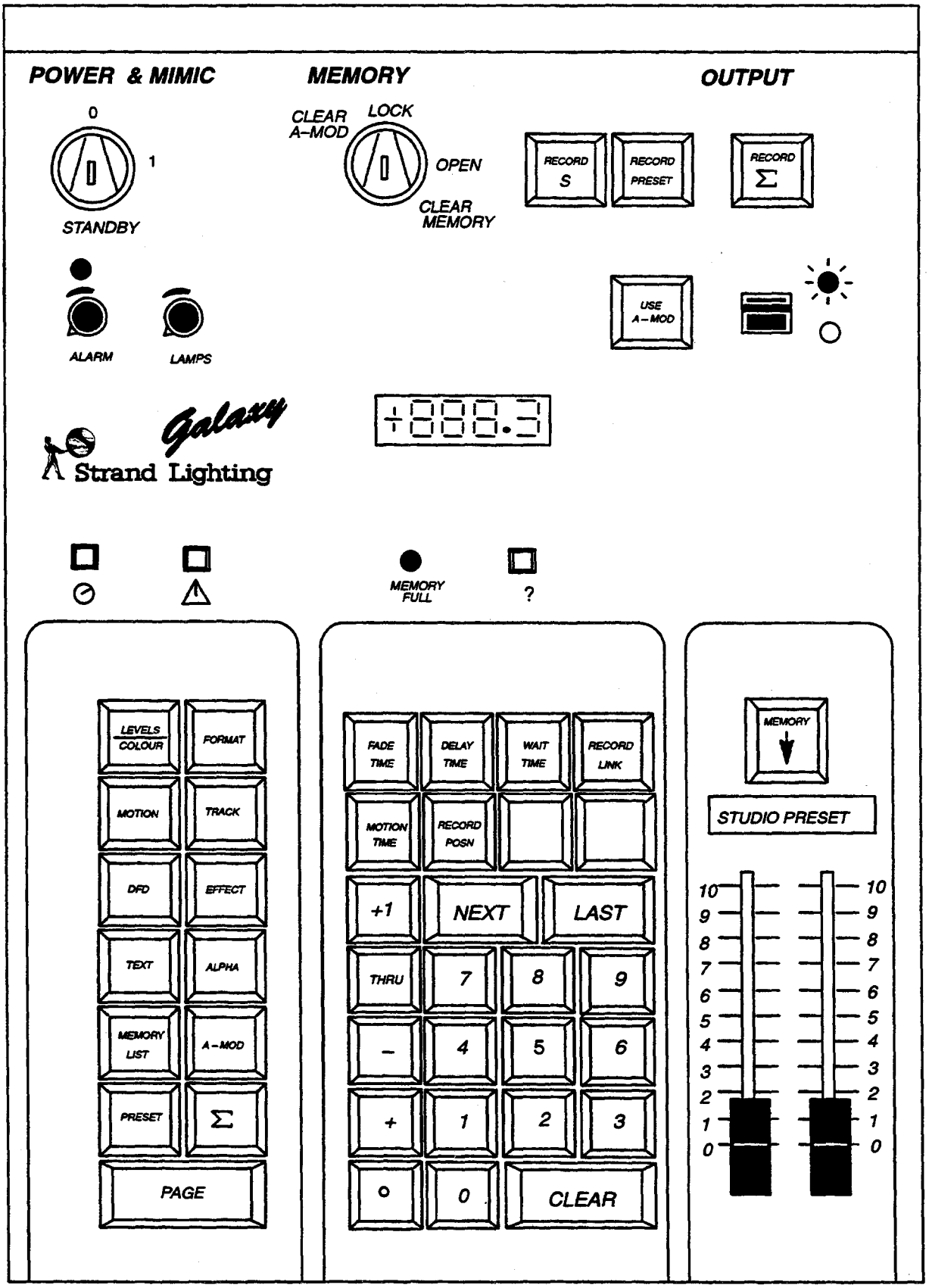
> **Note:–** If the memory number is prefixed with a plus or minus sign the existing lighting will not be cancelled and the memories will be combined.

If the transfer key is held down, memories may be cut onto stage by simply selecting them on the memory keypad. In practice, only memories with whole numbers between 1 and 9 may be recalled in this way, although, if required, the NEXT, LAST and Increment Memory Number (+1) keys may be used.

Wiping the Output Store

During rehearsal it is often desirable to cancel all the current lighting and start again from blackout. This is best achieved by transferring memory 0 or 'blank' to the systems output by use of the Memory Transfer key The key illumination will be extinguished, all channels switched off and all fades cancelled. The **Preset Masters** (if fitted) remain unaffected and, if a totally clear state is required, they must be wiped individually by transferring memory 0 to each in turn. Alternatively, select 0 THRU and load the first master to be cleared. This action 'gangloads' memory 0.

Fig. 4.2 Memory Mimic Power Panel – Studio Version



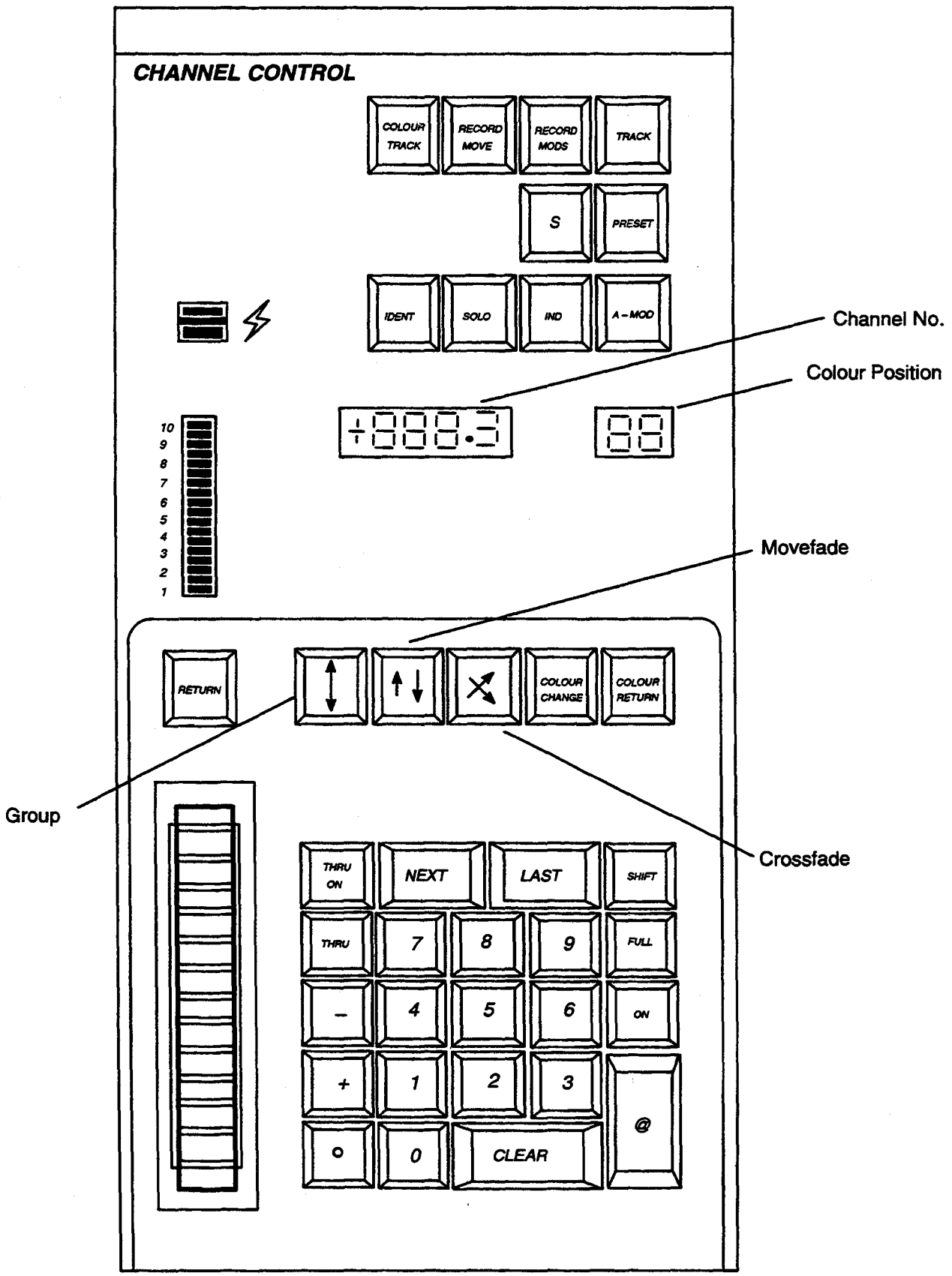
4. 5. STUDIO CONFIGURATION

When the **Memory** and **Output** Panel are fitted to Galaxy Systems intended for use in the Studio/TV environment, the right fader is normally reassigned to act as a master for the preset store of the Studio Playback fitted to the same desk as the Memory and Output panel.

Note:– It is not normal to fit more than one **Studio Playback** to one control desk.

5. Channel Control Panel

Fig. 5.1 Channel Control Panel



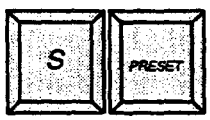
5. 1. GENERAL

A maximum of 4 identical **Channel Control** panels (each optionally with a **Group Masters** panel) may be fitted to a Galaxy system. These panels do not interact with each other except as determined by the Latest–Takes–Precedence philosophy.

Each **Channel Control** panel allows setting and modification of channel levels;

- 'Live', so the effect is seen to happen.
- 'Blind', when operating in PRESET mode.

Control of Scroller type colour changers is possible via this panel. This is in addition to the control offered by the **Motion Control** Panel.



'S' and PRESET

The keypad and fader wheel may be used to control channels in either the system's 'S' (output) store, or in any PRESET store. The latter may be blind in the case of a Playback, or controlled by one of the Preset Masters. Some restrictions apply if a **Channel Control** is operating in PRESET mode. In particular, selections may not be transferred to a Group Master. Note that the Flash switch always operates directly on the system output.

The two keys are mutually exclusive and will selectively illuminate and extinguish the other. Their purpose is to route the **Channel Control** either to operate 'live' on the system S–store or 'blind' into a Preset store.

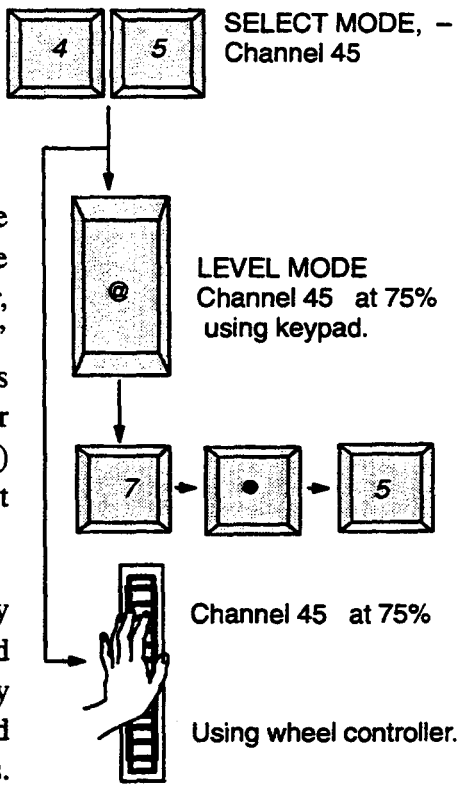
The keypad selection is unaffected by a change from S to PRESET or vice–versa, allowing rapid control of channels in both 'blind' and 'active' lighting stores.

If two Channel Control panels are fitted in a system, one may operate live while the other operates in Preset, with no restrictions.

'Select' and 'Level' Modes

The **Channel Control** Keyboard normally operates in two modes, SELECT and LEVEL, and will automatically switch between them depending on which keys are pressed.

In 'SELECT' mode the numbers entered are assumed to be channel numbers unless the entry has been prefixed with GROUP, MOVEFADE or CROSSFADE.



The keypad is changed to 'LEVEL' mode when the (@) key is pressed or the wheel moved. Levels may be varied in a continuous manner by the fader wheel or, for rapid setting, they may be keyed in using the '@' key. If '@' has been pressed, the next, digit entered is assumed to be the level in increments of 10%. A finer setting may be achieved by typing '.' (decimal point) and a further digit, however such accuracy is often not necessary.

Once the level of a channel has been set (either by means of the '@' key or the fader wheel) the keypad reverts to the **select** mode and a further number entry will select a new channel. There is, therefore, no need to press 'CLEAR' between successive entries. Channels controlled will be shown in reverse colour on the VDU. Channels which have been controlled show with reverse video colons until CLEAR is pressed.

In addition to the control of individual channels and groups, previously recorded groups and memories, or combinations of all of these may be selected and controlled.

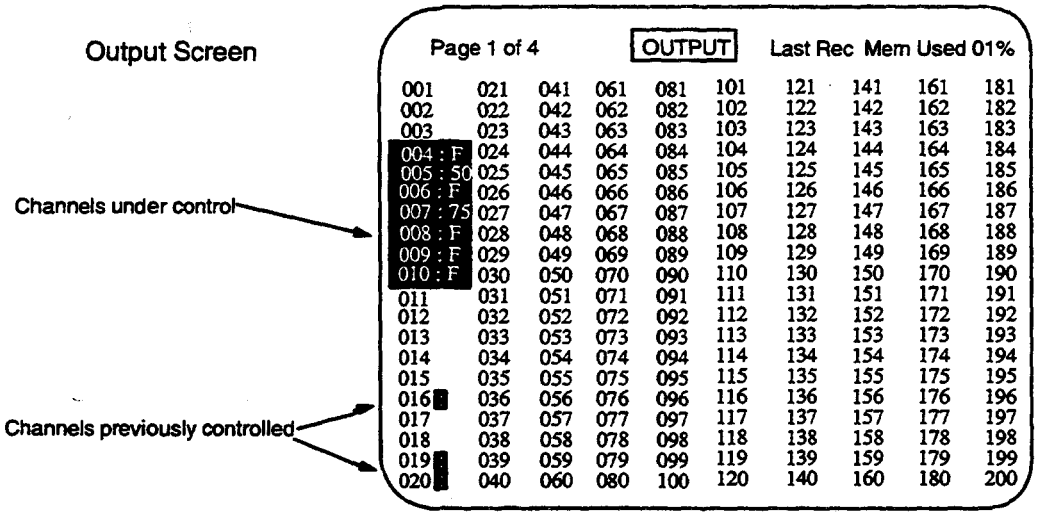
Taking Control of a Channel

The main Galaxy system (excluding **Preset Masters and Effects**) only allows a channel's level to be controlled from one place at a time. Therefore , a channel which is taking part in a playback fade will be taken out of that fade if it is selected. To avoid problems, the **Channel Control** does not take control of a channel until the number entry is complete and the channel is taken under control.

Channels are taken under control:–

- When the @ key is pressed.
- When the fader wheel is moved,
- When the ON key or Flash switch is used to change the level of a channel.
- When a group is being built up by use of the '+' or '–' keys.

Channels under control, 4–10 in this case, are shown in reverse colour on the VDU.



Valid Channel and Memory Numbers

Should any attempt be made to change the level of a channel which does not exist, or to fade to a memory which has not been recorded, the system alarm momentarily 'bleeps' and the numeric display flashes. CLEAR should then be pressed followed by the correct number.

Selection and Control of Groups of Channels

It is often desirable to control the level of several channels simultaneously (i.e. as a group). The channels constituting a group may be selected individually by the following procedure:–

1) Enter first channel

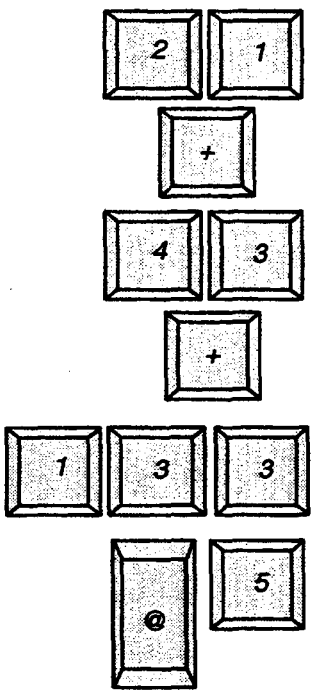
2) Enter '+'

3) Enter second channel

4) Enter '+'

5) Enter third channel

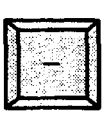
Enter a level @ 50% e.g
(or move the wheel)



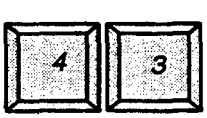
Channels 21,43 and 133 would then be controlled together in this case all at a level of 50%.

Similarly, a channel may be removed from control as follows:

1) Enter '–'



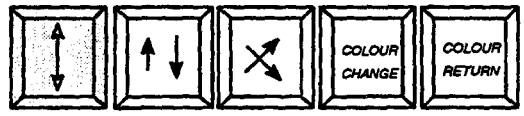
2) Enter channel



If all three channels are at the same level when taken under control they remain together when the fader wheel is moved. If, however, the channels were at different levels, an equal amount of level will be added to or subtracted from each channel as the wheel is moved. This type of fade is not proportional and is usually referred to as 'SHAFT MASTERING.'

The wheel may be moved up until one–by–one all channels reach full. Moving the wheel in the reverse direction restores the original balance, unless CLEAR has been pressed, while further downward movement reduces the levels until one–by–one the channels reach zero.

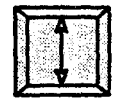
GROUP

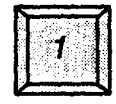


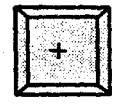
An alternative method of selecting a group of channels for control is to call up a previously recorded memory.

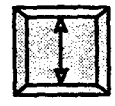
All the channels ON in a recorded memory are taken under control by pressing the GROUP key and then the number of the required memory is entered on the channel keypad. Channels may be added to selected groups or deleted from them in the usual way by use of the '+' and '–' keys. **Note:–** GROUP ignores recorded levels

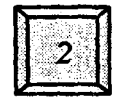
Similarly, groups may be added together or their channels removed from control using the following procedures:–

1) Press the Group key. 

2) Select the first memory number on the channel keypad. 

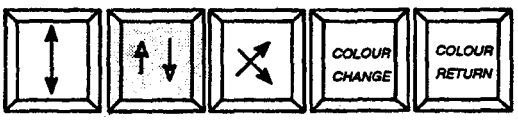
3) Press the '+' to add, or '–' to delete as required. 

4) Press the Group key a second time 

5) Select the second memory on the channel keypad 

6) If required, continue until the desired combination is obtained.

MOVE–FADE

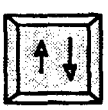


In addition to controlling previously recorded memories as groups, the **Channel Control** may be used to carry out Move–fades and to recall memories, with the associated channels at their recorded levels. When the **Channel Control** is used in this way, channels 'ON' in a selected memory will proportionally fade to their recorded levels as the wheel is moved upwards. In this way a scene may be lit by combining several memories which have been balanced separately. A Move–fade does not affect channels which are not ON in the selected memory.

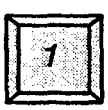
A Move–fade move is initiated before entering the required memory number.

Two or more memories may be combined and introduced simultaneously by using the following procedures:

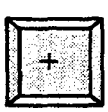
1) Press the MOVE FADE key.



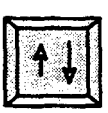
2) Select the first memory on the channel keypad.



3) Press the '+' key.



4) Press the MOVE FADE key.

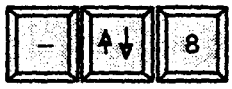


5) Select the second memory

6) Continue until the required combination is obtained.

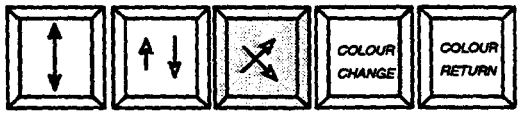
If additional channels or groups are added to a combination prepared as above, the whole selection automatically becomes a group and the fade changes from a 'Move' to a 'Shaft' fade. This is because there are no recorded destinations for the additional channels.

If a Move–fade is prefixed with '–' those channels ON in the selected memory will dim out as the wheel is moved away from you. e.g



plus wheel up  will fade all channels in memory 8 to zero.

Note:– Common channels in selected memories will combine as Latest Takes Precedence, i.e Movefade '1' + Movefade '2' is not equal to Movefade '2' + Movefade '1'

CROSSFADE 

The **Channel Control** is able to carry out complete Crossfades to memorised lighting states. That is, the current lighting is substituted entirely by the lighting state recorded in a memory. Channels that are OFF in the memory will fade out as new channels fade in.

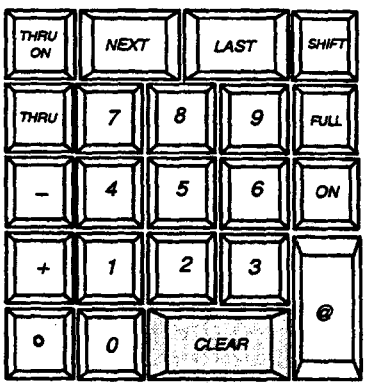
The procedure for this is to simply prefix the required memory number with CROSSFADE. As in the case of a Move–fade action, memories may be combined before starting a Crossfade.

MOVE and CROSSFADE also work on @. The number entered being the proportion of a complete fade.

e.g.  25 @8 + 80% is the way to record levels in memory 25

5. 2. CHANNEL CONTROL OPERATION – SELECT MODE

CLEAR



This clears the **Channel Control** numeric display and any Group,Move or Crossfade key which may be illuminated. All channels previously under control are parked, i.e. their levels are held in the store in which they were set (either 'S' or Preset), but they are no longer assigned to the **Channel Control**

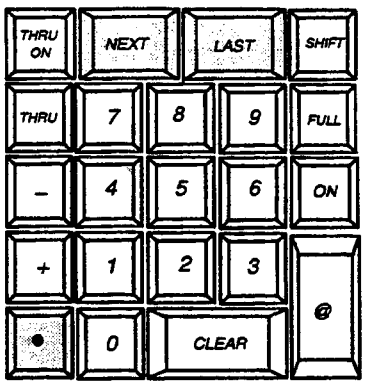
The CLEAR key also has a 'double touch ' action, only when entering groups of channel numbers, that allows you to:– Clear the last entry on the first touch. Clear all entries on the second touch.

GROUP, MOVEFADE AND CROSSFADE

These three keys are mutually exclusive and, if selected light, and cause the next number entered to be interpreted as a memory rather than a channel number. The keys illuminate when pressed, indicating the type of fade to be controlled.

The operation of these keys are similar to those just mentioned on pages 47–48.

Channel Number Selection



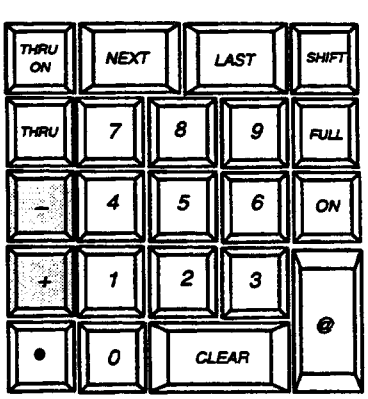
The keypad has keys for numbers 0 to 9 and, in addition, NEXT, LAST and '.' (decimal point). Numbers are entered with the most significant digit first, and are echoed in the numeric display immediately above the keypad. There is no need to enter leading zeros as these are ignored by the system and will not be displayed. Any channel or memory number may be entered, but if this number is invalid the alarm will sound on attempting to take control. In number selection mode the decimal point key is used solely to call–up memory numbers with a decimal point e.g. **123.4**.

NEXT increments the selected channel number to the next channel in the system.

LAST steps the number to the lower. If Group, Move or Crossfade have been pressed the selected memory number may be stepped up or down to the next recorded memory number by use of NEXT or LAST respectively.

Note:– Even if CLEAR has been pressed, the NEXT or LAST key always functions with respect to the last channel number entered. The NEXT and LAST keys will auto repeat if held down for more than 5 seconds.

Plus (+) and Minus (–)



While the keypad is selecting channel or memory numbers these keys may be used to add or delete channels from the group under control.

Plus (channel) e.g.  will add the channel to the group previously under control, so that all the selected channels are incremented or decremented by the same amount, as the fader wheel is moved upwards.

Minus (channel) e.g.  deletes the channel from the group being controlled and parks it at its current level. It will then no longer be available for transfer to a Group Master.

Plus Group e.g. 

adds all channels ON in the memory to the group previously under control. The recorded levels are ignored and the channels controlled as if they had all been selected individually and added to the group by using the Plus (+) key.

Minus Group e.g. 

deselects all channels ON in the selected memory from the group under the control of the panel. The deselected channels are parked at their current levels.

Plus Move e.g. 

causes the **channel control** to recall the selected memory, with the channels at their recorded levels, as the wheel is moved away from you. Channels which are ON in the selected memory will proportionally fade from their current level to the recorded level as the fade progresses. Channels not recorded in the memory will remain unaffected. The fade is always manually controlled and may be reversed by moving the wheel back towards you. A Move–fade may not be added to a group, Plus Move can, therefore, only be used effectively to add memories together for fading.

Minus Move e.g. 

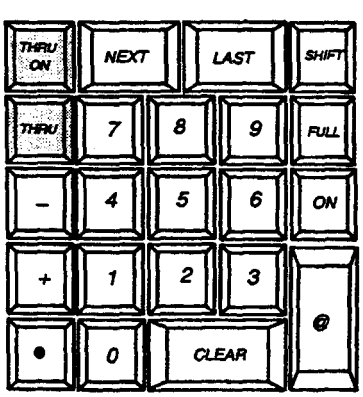
causes all channels on in the selected memory to fade to zero as the wheel is moved upwards.

Plus Crossfade e.g. 

has a similar effect to Plus Move. However, channels not ON in the selected memory, but currently contributing to the output, are proportionally faded to zero.

THRU : THRU ON

The THRU key may be used to call–up a continuous group of channel numbers for control. For example, if control of channels 7 to 13 inclusive is required, they may be selected as follows:



1) Enter first number, e.g. 7.

2) Press THRU.

3) Enter last number, e.g. 13.

It may be used to remove a sequence of channels from control by prefixing the first number with minus '–'.

Any numbers may be entered, although the second should be higher than the first or the warning will sound. Only those channels in the range which exist i.e. available for control, will be selected. The THRU key does not operate if the keypad is selecting memory numbers.

The THRU ON key is used in the same way as THRU, but gives control of only those channels which are currently ON within the selected range. This makes it possible to adjust levels of a number of channels which are already contributing to a lighting scene, without having to select the individual channel numbers, and without inadvertently introducing unwanted channels in the range.

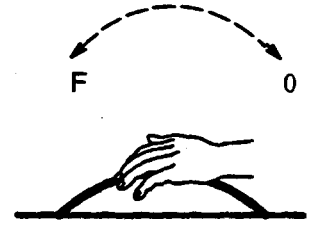
5. 3. CHANNEL CONTROL OPERATION – LEVEL MODE

Changing to 'Level' Mode

Pressing the ' @ ' key, or moving the wheel when a valid channel or memory number is selected will automatically change the **Channel Control** from 'select' to 'level' mode of operation.

Fader Wheel

The levels of the selected channels may be adjusted at any time using the fader wheel. For individual channels or groups, movement of the wheel away from you will increase the intensity, and vice versa. One sweep of the exposed section of the wheel corresponds to slightly more that a fade from zero to full (this allows room for the width of a thumb or finger when fading channels).



When the fader wheel is performing a MOVE or CROSSFADE, movement away from you causes the fade from existing to recorded levels. Both up and down parts of the fade occur simultaneously.

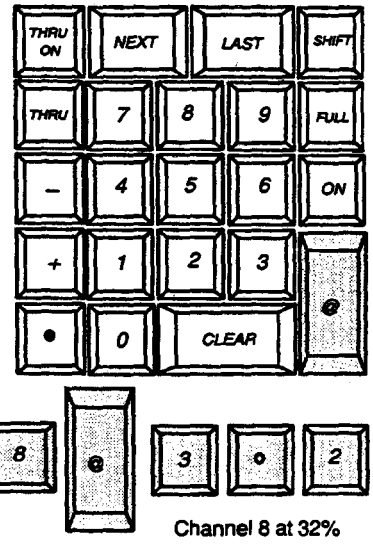
Further forward movement once the channels have reached their recorded levels has no effect, but the fade may be reversed by moving the wheel towards you until the starting levels are restored. Further backward movement will also be ignored.

Keypad Level Entry

Once a valid channel number has been entered, it may be set to an absolute level or be modified with respect to its current level by use of the '@' key. When pressed, the '@' key lights to warn that the next entry will be interpreted as a level. The next number pressed will be the intensity in steps of 10%.

e.g.  will set channel 8 to 30%.

Should it be desired to set more accurately, the wheel may be used for 'fine tuning', or the level may be entered in steps of one percent by using the decimal point,



Channel 8 at 32%

e.g.  will set channel 8 to 32%.

To set channels to 100%, press 

The '@' key is extinguished once the first level digit has been entered, because the next numeric entry is most likely to be a new channel number. However, if '.' (decimal point) is pressed, the **channel control** remains in level mode, and the '@' key is re–illuminated at low level, indicating that the least significant digit of the level may be entered.

Incremental Changes

Channel levels may be changed by use of the '@' key in conjunction with the '+' or '–'. This makes it unnecessary to check the current levels before changing them.

e.g to raise channel 8 by 10% press, 

Use of the decimal point, as previously described, allows modification to an accuracy of 1% if required.

When controlling a group of channels, pressing '@' then a number sets all channels under control to the chosen level.

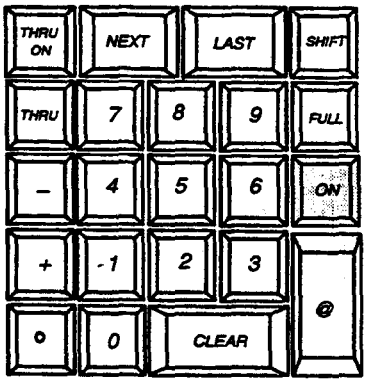
However, '@', + 'n' (where 'n' is any number) or '@', – 'n' will add or subtract 'n' points from each channel's current level, maintaining the differences.

When the '@' key is used in conjunction with a Move or Crossfade (which are proportional fades) the 'level' entered is taken as the percentage of that fade carried out and channels are set immediately to the levels that they would achieve by fading.

e.g 

would switch channels from their current level to the levels they would achieve half way (50%) through a crossfade to memory 10.

On @ Zero



When a lighting state is memorised, channels which have been set to level 0 will be OFF. These channels will then not be taking part in Move–fades involving the memory concerned. There are occasions, however, where it is required to use movefades to fade channels to OFF. This may be achieved by selecting the channel concerned and then typing '@', '.' The channel may then be considered as being 'ON at ZERO' and will subsequently fade to zero in a Move–fade.

Note:– that when setting a channel in this way, the CLEAR key on the keypad must be pressed before entering the next channel number, as this would otherwise be interpreted as a level.

Use of the ON key

Galaxy has a special memory used for containing 'preferred' levels or channels. This memory is termed the ON store.

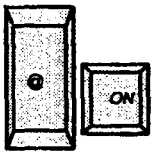
The effect of the 'ON' key depends on whether the selected channel, whose number is shown in the **channel control** display window, is on or off. (Where a number of channels are selected as a group the number displayed will be the last number entered).

There must always be a valid channel selection, or the error alarm will sound.

If the channel whose number is shown in the display is Off, the associated indicator in the 'ON' key will be off. Pressing the 'ON' key turns the selected channel or channels On to the ON store level. If, however, the last selected channel is On, the 'ON' indicator is lit, and operating the 'ON' keys turns the channels off; in the latter case, the 'ON' level saved in the system for each of the selected channels will be changed to that which was current immediately prior to the operation of the 'ON' key.

The ON key will operate on individual channels or groups. Multiple channels may be selected using the '+' '–' THRU and THRU ON keys, or recalled from memory using the GROUP function. The 'ON' key is inhibited, however, if a Crossfade or a Move–fade is being controlled.

@ ON



If pressing the ON key is immediately preceded by operation of the '@' key, the selected channel will be set ON at the level currently saved in the 'ON' store for that channel. This is irrespective of the illumination of the 'ON' key. The level stored for the channel in the ON store will not be changed.

Shift ON

If the SHIFT key is held down and the 'ON' key operated, the selected channel will revert back to the previous ON level. This is useful if you should accidently change the ON level of a single channel.

Note:– This only works on one channel at a time.

Automatic 'On' Level Update

The ON level stored in the system for each channel may also be updated automatically when a lighting state is memorised. If the Automatic On level update is selected, channels which are at levels above zero will have their stored 'ON' levels updated to the last recorded level each time a record action takes place. The selection of the automatic update to either On or Off is done via the alpha– keyboard.

RETURN Facility 

The RETURN key situated directly above the fader wheel has two roles. Firstly, it lights when the level of a channel under control is changed from the level at which it was when selected on the keypad. It then extinguishes automatically if the channel's level is restored to the original setting (to within about 3%).

Secondly, the key may be pressed when lit and the original levels will restored immediately. The key's main purpose is to allow channels modified in error or temporarily to be reset correctly.

The Level Display

When controlling a channel or a number of channels, the bar graph display gives the level of the channel number last entered in the S store or selected Preset store, i.e. currently shown in the display window.

If the **Channel Control** is carrying out a Move–fade or a Crossfade the display acts as a fade progress indicator, i.e. it shows how much of the fade has been carried out, and reaches 10 on completion of the fade. The display is not used if the GROUP key is lit.

Flash 

This control is a three position level switch spring–loaded against the up and down positions therefore always holding it in the centre. When pushed to the up position those channels selected on the keypad are instantly turned on to full and while in the down position they are turned to zero. The effect of the Flash switch is only present while the switch is held. Original levels are restored when it is released.

The Flash switch may be used to identify which channel is causing a certain effect, by holding the switch down and stepping through the channels with the NEXT or LAST key.

Flash will also be operative when a **Channel Control** is in PRESET mode, but always operates into the Live output regardless of Channel Control routing.

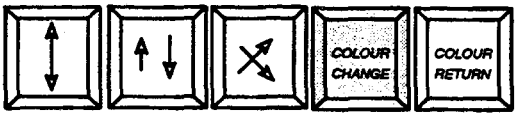
Colour Control

The Channel Control includes facilities for the control of scroller type colour changers. A two character display shows the current position of any accessible scroller, and this may be changed by use of the COLOUR CHANGE key. A COLOUR RETURN key is also provided. Units for which no colour scroller exists display "—". Colour changers may also be controlled from a Motion Control Panel.

The colour function control may only be used when the Channel Control panel is routed to output S. When the Channel Control is routed to PRESET the colour window remains blank for all channels.

Eleven or sixteen colours may be selected on the colour scrollers depending on their configuration. These are displayed as whole numbers e.g. '9', referring to frames in the scroll. This display will be updated to reflect any changes made on that channel colour function by the **Motion Control** panel. It should be noted that colour 0 is normally open white. Frame numbers between 12 (or 16) and 32 set selected end and 'half frames'.

Changing a Colour

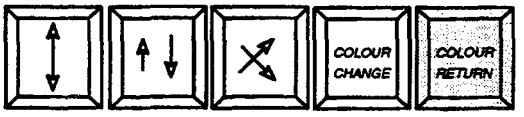


A colour may be changed by use of the numeric keypad on the **Channel Control** panel. To change a colour press the <COLOUR CHANGE> key (which will illuminate). This places this channel control module in COLOUR Mode. A new number in the range of 0 through to 32 may be entered and terminated by pressing <COLOUR CHANGE> a second time. Additional changes may be made by entering another value and pressing this key to terminate each entry. The colour will not change until the <COLOUR CHANGE> key is pressed. When the colour function is no longer required, simply press the key, and the light will extinguish. The keypad may now be used for entering channel levels again.

While the COLOUR CHANGE key is illuminated (Colour Mode active), it is possible to make rapid changes to the colour without having to enter the new colour number each time. The <NEXT> and <LAST> keys will increment or decrement the colour by frame increments.

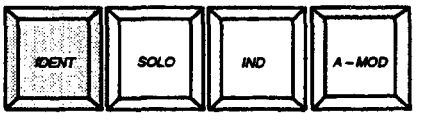
Note:– The NEXT and LAST keys will not work if a colour value has been entered on the keypad, but not "entered" (by pressing the <COLOUR CHANGE> key).

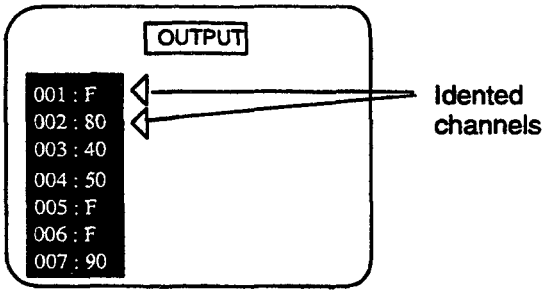
Colour Return



A COLOUR RETURN function is also available. It functions in a similar manner to the normal level RETURN key. The Colour value is sampled at the time the channel control panel is placed in Colour Mode (by pressing the <COLOUR CHANGE> key. While this key is lit, pressing the <COL RETURN> will cause the colour to be restored to its original setting, i.e where it was at the time the Colour Mode was entered.

IDENT Function





The IDENT function permits a marker to be set on the VDU screen against the channel or channels currently selected on the channel controller. The marker is a small white pointer. This aids you in locating special or problem channels on the screen.

To switch on the marker, select the desired channel(s) and push IDENT. The white markers will now remain on the screen regardless of the channel controller selection, they are not cleared by turning off the system.

To remove the white markers, re–select the desired channel and press IDENT again.

Ident marks can be present in Live and Preset displays

INDependent

Whilst the 'Latest takes Precedence' philosophy allows immediate access to channels for overriding purposes, it is often desirable during a production for a channel or several channels to be held under control in one place and not 'stolen' by a cross or move fade, for example.

Galaxy is fitted with a number of illuminating INDEPENDENT (IND) pushes. These are located on the **Group Masters** and **Playbacks** as well as the **Channel Control** panel.

A channel that is INDEPENDENT is no longer available to be controlled by any other panel other than the **Preset Masters** *or* ***Effects*** panel, where it will work on a 'Highest Takes Precedence' basis. Deselecting IND frees the channel for normal operation.

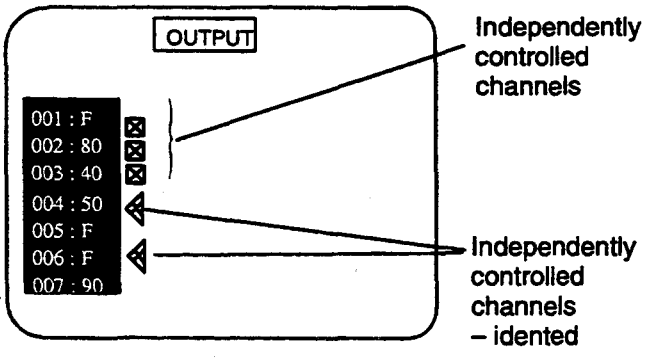
The **Channel Control** Independent key lights when pressed making those channels currently under control independent of all other fade actions. Channels subsequently added to the group under control also become Independent.

The levels of the Independent channels may be modified by the wheel or '@' key of the panel in the normal way but will not change due to a Playback fade, and will not be available for control by another Channel Control.

IND is automatically deselected if CLEAR is pressed. All channels controlled by the module become Independent when the IND key is lit, whether they are in groups or part of a Move–fade.

Independent display flags

When IND is selected, any display showing channel levels will be marked with either a box or a triangle containing a cross as shown in the diagram opposite.

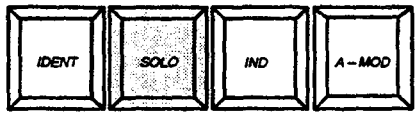


Overriding a Channel

A channel may, for some reason, need to be over–ridden during a Playback fade and if this is so it is called up on the **Channel Control**. The fade can then be started and control passed to a **Playback** on a latest–takes–precedence basis. If no further action is taken the channel continues to be assigned to its **Playback** controller until the fade ends.

If the **Channel Control** fader wheel is moved, control of the channel is immediately and automatically transferred to the **Channel Control** so allowing that channel to be overridden manually. This facility to re–collect channels previously controlled is applicable to the **Group Masters** panel also. However, in that case it is undesirable for the transfer to occur automatically and the re–collect must be manually operated.

SOLO



The SOLO function is one where all channels except those currently under control of the channel controller are faded out. This permits viewing of exactly where a lamp or group of lamps is pointing without having to 'kill off' all the other lighting by fades etc. The solo key (when pushed) will cause all channels other than those currently under control to fade to zero in approx 1 second. The level of the channel(s) currently under control is not changed. When the SOLO key is released, the lighting state is restored in approx 1 second. Running fades continue and channels do not change assignment. The SOLO key can be set to work as a momentary action or latching type via the SYSTEM SETUP MENU options.

Latching Mode

The key can be set up to work as a latching action, via SYSTEM CONFIGURATION on the alpha keyboard, enabling the function to become a push–on, push–off type. When active it will flash on and off, as do any other SOLO keys on channels within the system.

To clear a 'latched' key hold down CLEAR and press the appropriate key.

Solo Exclusion

It may be desirable to define certain channels <u>not</u> to be faded by a solo action i.e. orchestra lights etc. This can be achieved by recording these channels into a special 'Solo Exclusion' memory.

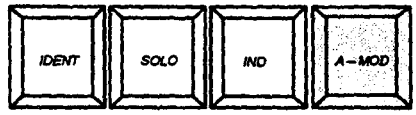
Procedure:–

1.) Set required channels to be excluded to any ON level.

2.) Hold down SHIFT and press SOLO

The contents of the 'Solo Exclusion' memory may be displayed on the VDUs as part of the SETUP facilities on the alpha keyboard.

A– M OD (Auto–mod)



Facilities are provided to allow memories to be temporarily modified when played–back, in order to substitute suitable equivalents for luminaires which have failed or which have been knocked out of position. As these are problems which will be rectified at the earliest opportunity, it is undesirable to change all the memories permanently. The automatic modification replace facility (A–MOD) allows a channel to be temporarily replaced by the same channel at a different level, or by an alternative channel or channels. The substitution will take place, if USE A–MOD on the Memory/Output panel is pressed, when memories are recalled to the playbacks or preset stores. AUTO–MOD does not change the levels stored in the main memory.

Once the fault has been cleared the temporary Automatic Modification instructions may be deleted.

Displaying the Auto–Mod Store

The instructions held in the Auto–Mod store may be listed on the VDU if 'A–MOD' is selected on the **Mimic** panel. The display shows each instruction, giving the original channel first, then the substitutes with their relative levels.

Types of Instructions

Several types of instruction may be entered into the Auto–Mod store, examples of which could be as follows:–

1) Replace channel 5 with 25, whenever channel 5 is used, at the same level.

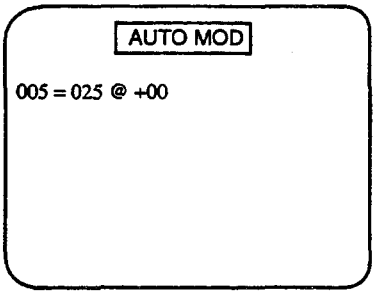
2) Replace channel 5 with 25 @ 50% (absolute level)

3) Replace channel 5 with 25 @ + or – 50% (level relative to that of substituted channel)

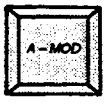
4) Replace channel 5 with 25 at +10% and channel 6 at –30% (25 and 6 are alternative channels and 10% and 30% are the levels added to and subtracted from the recorded level of channel 5).

In all of the above cases channel 5 would be set to 0% by the Auto–Mod instruction.

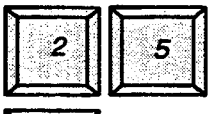
Setting up an Auto–Mod Instruction



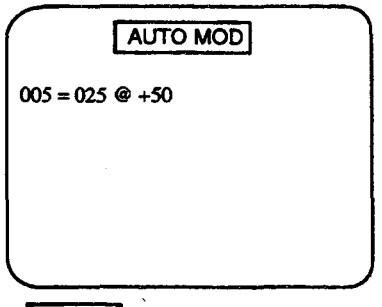
Procedure for setting up example 1 – replace CH. 5 with CH. 25 whenever CH.5 is used, at the same level.



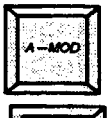
1.) The channel number to be replaced is entered and A–MOD pressed. The key will remain illuminated to indicate that the next entry on the keypad will be the substitution.



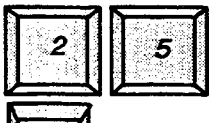
2.) The replacement channel number is entered and the instruction completed by pressing A–M again, which will extinguish.

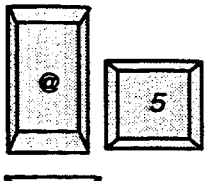


Procedure for setting up example 2 – replace CH. 5 with Ch. 25 at 50%.

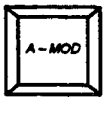


1.) The channel number to be replaced is entered, and A–MOD pressed.





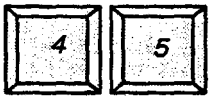
2.) The replacement channel number is entered but this time, @ 5 needs to be entered as well



3.) Complete instruction by pressing A–MOD again.

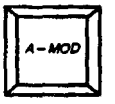
Deletion of an Auto–Mod Instruction

1) Enter the channel number which is being replaced.



2) Press A–MOD.

3) Press A–MOD a second time.



Clearing the Auto–Mod Store

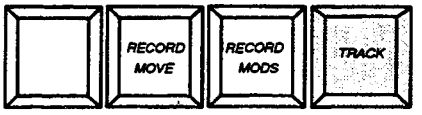
All of the substituted instructions, listed in the Auto–Mod store, may be erased in one action by inserting a key (TOK 4) in the **Memory** panel Record Lock, turning it Anti–clockwise against the spring, and simultaneously pressing REC Σ.

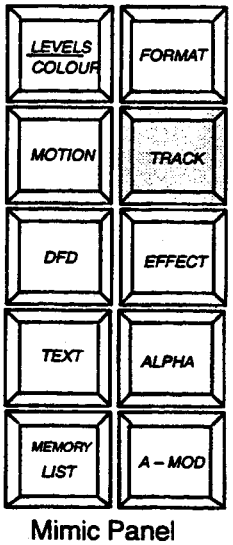
Using the Automatic Modifications

The instructions in the Auto–Mod store will be ignored unless the USE A–MOD key, on the **Memory/Mimic** panel, has been pressed and is illuminated. Any memories which are subsequently transferred will be modified, with the modified instructions taking precedence over the levels recalled from memory.

Note:– The lighting states are modified when they are transferred from the memory. Therefore, selecting USE AUTO–MOD will not change those states which have already been transferred to Preset stores.
Memories or groups recalled by channel controls or designers controls do not use data in the Auto–mod store.

TRACK





Mimic Panel

The TRACK function allows you to constantly monitor particular channels throughout a sequence of memories. Pressing the TRACK key on the **Mimic Panel** will allow up to 10 channels to be selectively displayed and, if required, modified across a range of memories.

This screen gives you the opportunity to pin–point channels within scenes and quickly modify, simply and efficiently.

To get access to the screen follow the procedure below:–

3.) In order to prevent accidental erasure or modification the Memory Lock keyswitch should be set in the CLOSED (or Locked) position for display only purposes.

4.) On the **Mimic** Panel – press TRACK.

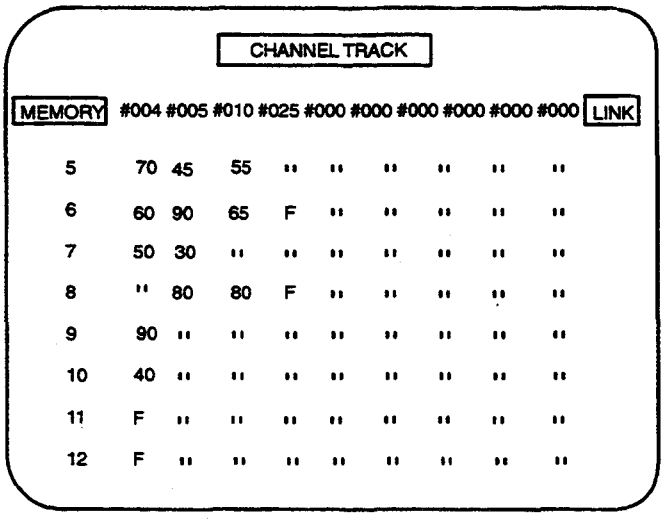
5.) On the **Channel Control** panel – select the desired channel, press TRACK.

6.) Repeat step 2 for all subsequent channels to be displayed.

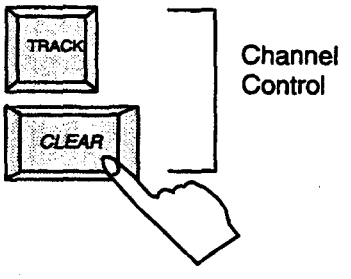
Fig 4.4 shows channels 4, 5, 10 and 25 and their corresponding levels relating to memories 5 – 12.

Note:– Entering any more than 10 channels will cause the first one to be overwritten

Fig. 5.2 Track – Channel Track display



To clear all channel data, hold down CLEAR and press TRACK on the **Channel Control.**



Modifying Channel Levels in Memory

The required memory, or range of memories, to be modified is first entered on the **Memory** keypad using the THRU key. The MEMORY LOCK keyswitch should then be set to the OPEN position and the channel whose level is to be changed entered on the **Channel Control.**

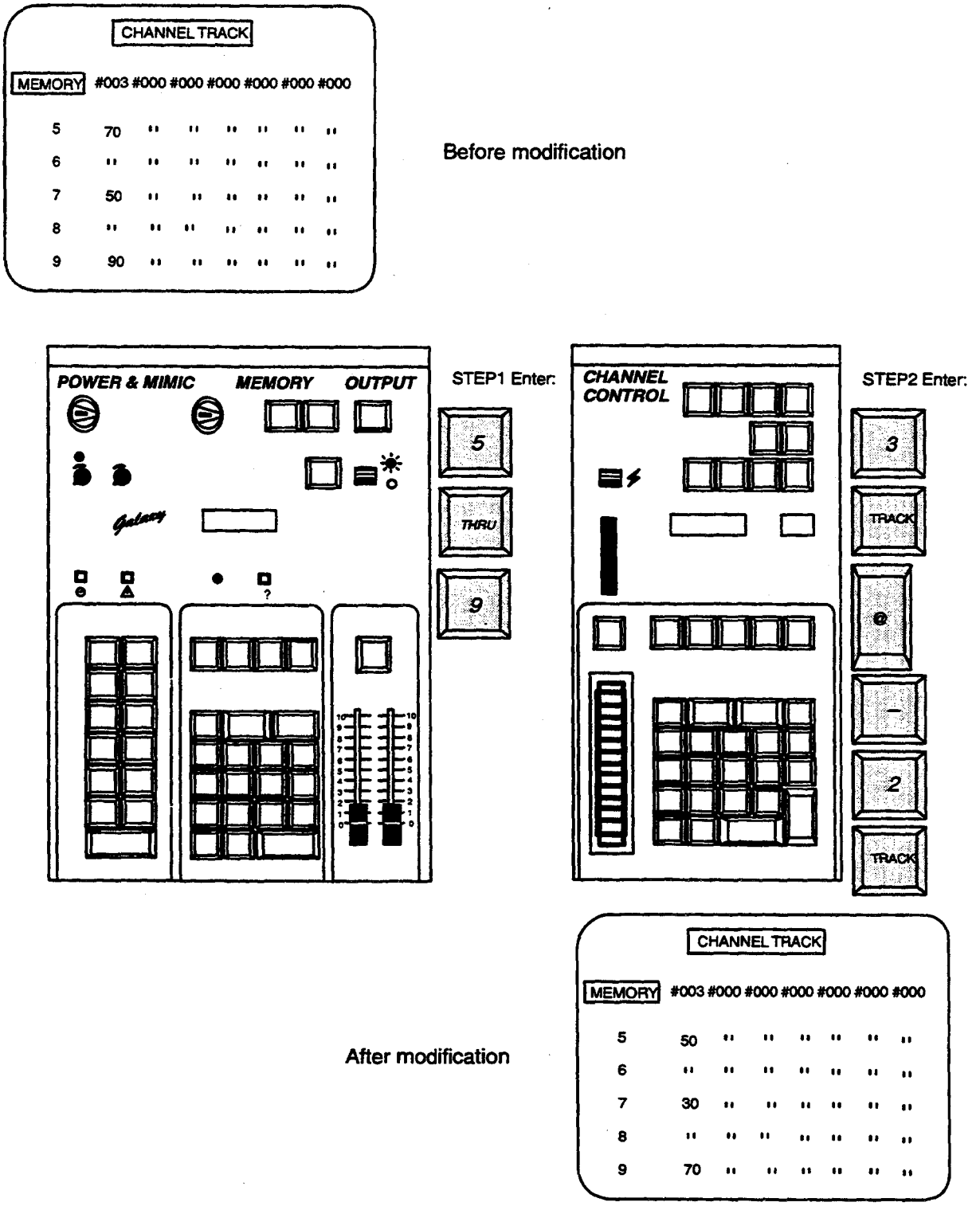
The TRACK key is pressed and this time it illuminates to warn that memories can be changed. Modifications are usually implemented by use of the '@' key in conjunction with the plus (+) and minus (–) keys.

Once the modified level has been entered, TRACK is pressed a second time. The TRACK key extinguishes, and the selected memories are changed.

TRACK will only change the level of the selected channel in memories in which it has been recorded. If the channel was not recorded in a particular memory, even though it is within the selected range, that memory will remain unchanged.

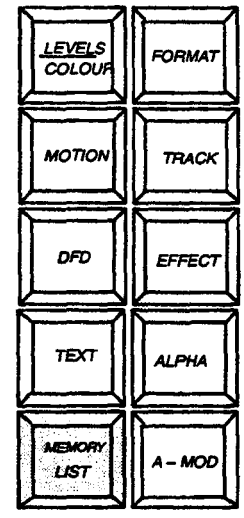
Example:– Channel 3 is to be changed. It appears in memories 5, 7, and 9. After the modification, any memory between 5 and 9 (inclusive) in which channel 3 was recorded will be changed so that the channel's level will now be 20% lower than it was previously.

Fig. 5.3 Track– modifying example



Single Channel Tracking

This can be achieved when the VDU is showing MEMORY LIST. Under normal circumstances 'MEMORY LIST' shows the memory numbers which have been recorded with appropriate text messages. When TRACK is selected on the **Memory Panel,** the recorded levels of the last 'Tracked' channel are displayed beside the memory numbers.



Memory Panel

To gain access to this facility follow the procedure below:–

1.) In order to prevent accidental erasure or modification the Memory Lock keyswitch should be set in the CLOSED (or Locked) position for display only purposes.

2.) On the **Memory** panel – enter the first memory number of interest, in this case 5, and then press MEM LIST. Memories of a lower number will not be displayed but higher ones will.

3.) On the **Channel Control** panel – select the particular channel to be 'Tracked', this case 4, and press the TRACK key. (At this stage it will not illuminate).

4.) The recorded levels of that channel are then displayed in the REMARKS column.

If the channel is not ON in a memory, such as memory number 8 here, the position on the MEMORY LIST display will be blank.

Fig. 5.4 Track – Memory List display

Page 1 of 2 | MEMORY LIST | Mem Used 01%

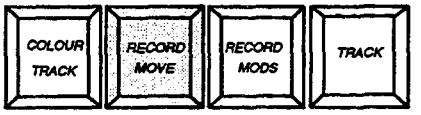
MEMORY	FADE TIME	WAIT	DELAY	REMARKS
5	10 : 10			Preset 4 @ 70
6	10 : 10			Houselight 4 @ 60
7	10 : 10			Houselight 4 @ 85
8	10 : 10			Spot left
9	10 : 10			Spot right 4 @ 90
10	10 : 10			Build scene 1 4 @ 15

Only one 'Tracked' channel may be displayed at a time on the VDU. Using CLEAR followed by TRACK will automatically cancel TRACK. To 'Track' a different channel, the new number is entered on the **Channel Control** keypad and TRACK pressed again. The VDU will be updated to show the new channel's recorded levels.

If more than one **Channel Control** is fitted to the Galaxy, the TRACK function can only operate from one of them at a time.

The difference between A–MOD and TRACK is that the latter permanently changes the Galaxy's long–term memory.

RECORD MOVE



RECORD MOVE allows rapid recording of the differences between the current state and a new state and automatically sets the fade type of the memory to be a MOVE–FADE.

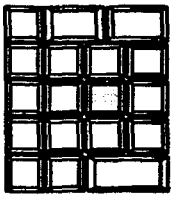
This facility allows you to record changes to a lighting scene, thus permitting the preparation of sequences of Move–fades without the difficulty of separating the new lighting from the old. This facility is used as follows:

1) Press the RECORD MOVE key, this will illuminate to indicate that the current lighting state has been saved in a temporary store. This can be the state in the S store or in a PRESET depending on where the **Channel Control** is routed to. If PRESET is selected, the state stored is that currently in the selected Preset store..

The REC MOVE key will remain lit.

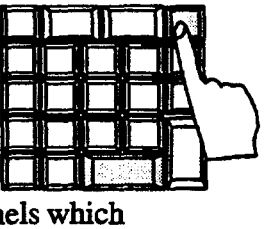
2) Make the required changes to the lighting as required either live or blind.

3) Select a memory number to store the changes on the **Memory** panel.



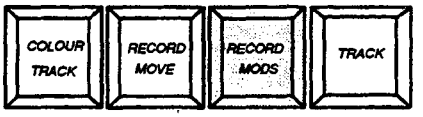
4) Press the REC MOVE key a second time. If the memory already exists, the error alarm will sound. As in the case of other record actions, a second operation of the REC MOVE key within 2 seconds will cause the existing memory to be overwritten. On completion of the recording process the REC MOVE key will extinguish.

5) Should it be necessary to terminate this operation without recording the lighting changes, hold down the SHIFT key and press CLEAR on the **Channel Control** panel.



The contents of the memory created will represent those channels which have changed in level between the lighting state (pre–RECORD MOVE) and that which is now current. The recorded levels of the channels concerned will be those in the final state, channels which are no longer active being recorded 'On at Zero'.

RECORD MODS

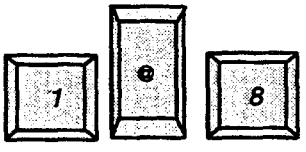


The RECORD MODS facility allows changes to a scene to be recorded separately from the rest of the lighting without affecting the level of other channels already recorded in the memory. This may be used with the Channel Control routed to either the S store or a PRESET.

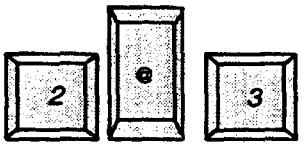
Example:

Memory 1 contains channel 1 at 50% and channel 3 at 70%. This memory is to be modified by changing the level of channel 1 to 80% and adding channel 2 at 30%. The modifications may be carried out live (in the S store) or in the selected Preset store, as required. Procedure is as follows:–

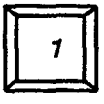
1.) Firstly, make sure the Record lock keyswitch is in the OPEN position then press CLEAR key on the **Channel Control** keypad to park any previously selected channels.



2.) Select Channel 1 and adjust to 80% (using the wheel or the '@' key).



3.) Select Channel 2 and set to 30%. Channel 1 will now show as being previously under control.



4.) Select Memory 1 on the **Memory** keypad.

Press REC MODS key and the key will light indicating a successful recording action. Memory 1 will now contain channel 1 at 80%, 2 at 30% and 3 at 70%.

Note:– REC MODS will also work into a range of memories.

6. Playback Panels

6. 1. GENERAL

The Galaxy **Playbacks** are the means by which memories, once recorded, are normally re–played. Each has a 'blind' Preset store into which the next lighting scene may be sent either from the **Memory** or **Channel Control**. Three types of **Playback** are available, the **Standard**, which can perform simultaneous manual or timed fades, the **Studio** for TV applications and the **Advanced** version, allowing automatic playback of complex fade sequences.

Galaxy supports up to four playbacks, which need not be all of the same type, and which may be fitted to any control pod. These are identified as **Playback** W, X,Y and Z. (Normally only one TV **Playback** is fitted per desk). Each Playback has a separate store which may hold one level for each channel in the Galaxy System. These Preset stores are used to set up the new destination levels to which channels will fade next time the fade is started.

The Preset store is loaded by means of the green MEMORY ↓ button which recalls a memory previously selected on the **Memory** panel keypad. Alternatively, sequence mode may be selected using the SEQ button, allowing the preset store to be automatically loaded with the next memory whenever a fade is started on the **Playback** panel. The PRESET W,X,Y,Z buttons enable the **Channel Control**, when routed to Preset, to operate in conjunction with the preset store of the corresponding **Playback**, (see fig. 3.10 in BASIC OPERATIONS section).

Fade control

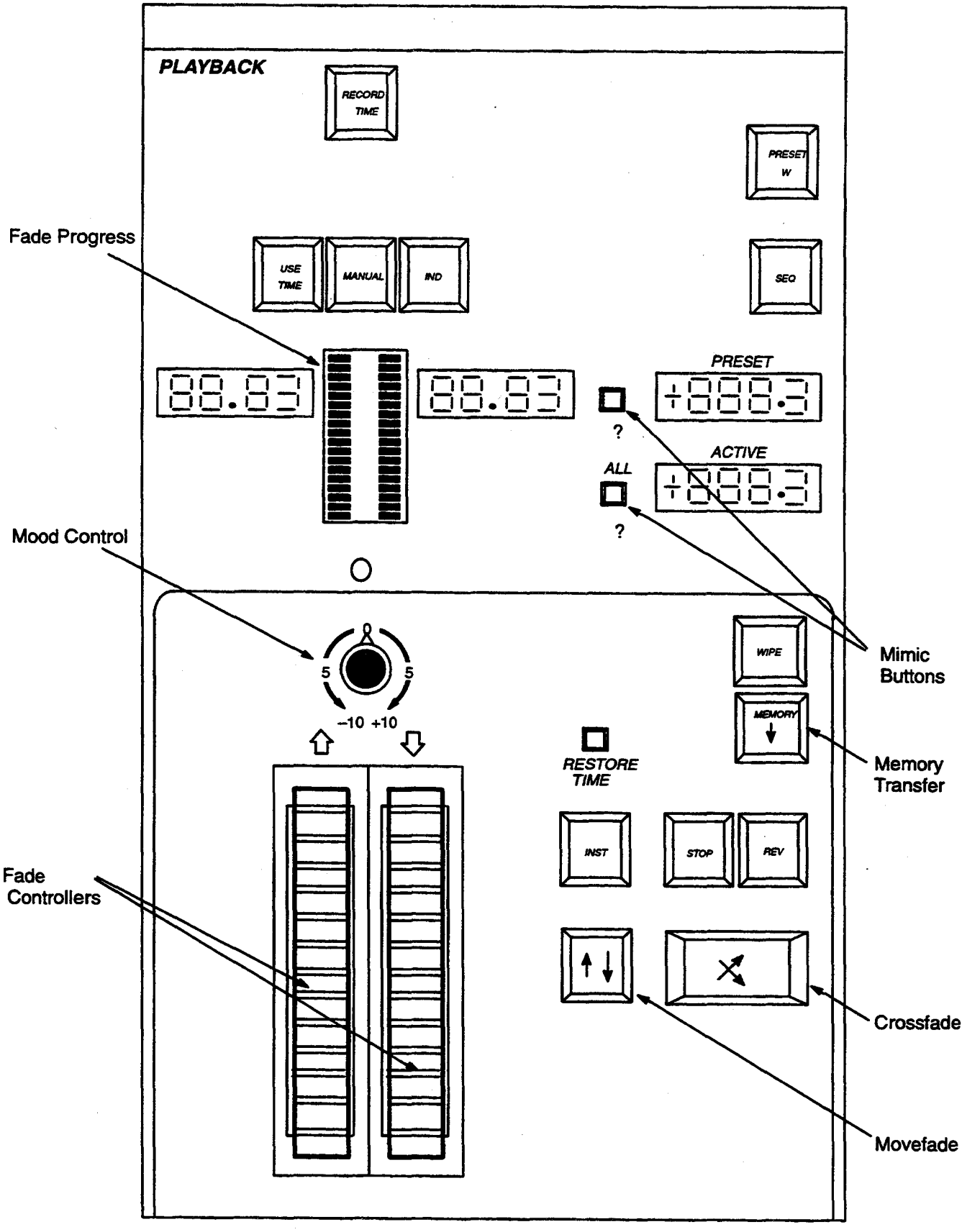
Fades may be carried out which replace the existing lighting with the state in the preset store (crossfade) or which use the information in the preset store to modify the current state (move–fade); the Galaxy system is able to run up to twenty four move–fades simultaneously.

All fades are split into an up–fade and a down–fade, rate of the fade being adjustable for each independently. Fade times may be set normally by the rate control of the **playback.** Previously recorded times may be replayed from the memory, or a fade may be presented manually again using the wheels or faders of the **playback.**

All **Playbacks** are able to use recorded Fade profiles, which determine how much of a fade is carried out in a given proportion of the fade time; fade profiles are only used if USE TIME is selected. All **playbacks** will take account of any recorded Fade Types set, using the Alpha–numeric keyboard or the RECORD MOVE facility on the **Channel Control** panel. **Playback** fades are 'Live,' although they do not affect the lighting contributed by the **Preset Masters** or the Auxiliary System.

6. 2. STANDARD PLAYBACK

Fig. 6.1 Standard Playback



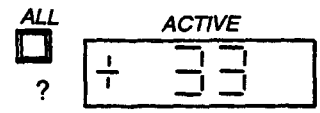
Introduction

The **Standard Playback** offers control of manual and multiple time fades, detailed in the following section.

Starting a fade

Pressing either the MOVE FADE ↑ ↓ or the CROSSFADE ⤫ key will start a fade, the duration of which is controlled by two wheels. One controls the lights fading up and the other, those fading down.

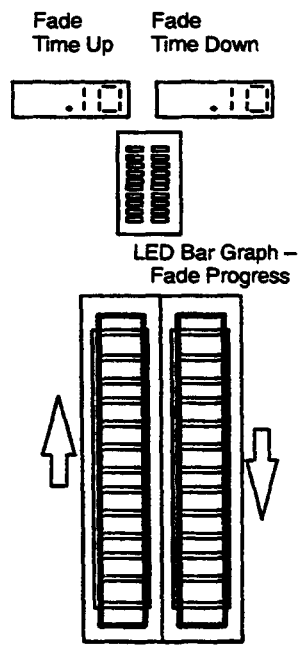
Active Fade Display



When a fade is started on a **Playback**, the number of the memory which was last transferred to the Preset store (i.e. the number which was shown in the Preset Display window) will be written into the Active Display window, to show that this was the last memory faded. Any plus or minus is also shown.

Setting Rates of Fades

Each fade carried out on the **Playback** is sub–divided into two parts: those channels increasing in intensity and those decreasing. Each part may operate at a different speed thus allowing, for example, incoming circuits to fade up quickly while the outgoing circuits fade out slowly. To control the two parts a pair of wheels are fitted to each **Playback**, the left hand controlling those lights increasing in intensity and the right hand controlling those decreasing.



The display windows above these wheels show (in minutes and seconds) the time which will be taken for the lights to fade up and down when a fade is next started. These values may be changed at any time by moving the respective wheels.

Movement away from you will shorten the time, towards you will lengthen it. The fastest fade time is effectively instant, taking less than 0.2 second; the slowest is 60 minutes. Approximately 3 sweeps of the wheel covers the complete range.

Assuming that no fade is currently running on the **Playback** and that the next required memory has been transferred to the Preset store, the wheels may be moved to set the times for the next fade in this preset store. If a fade is in progress (active store) moving the wheels will either accelerate or decelerate it.

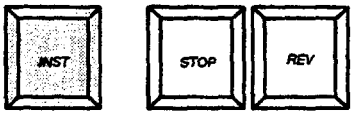
If another memory is transferred to the Preset while a fade is in progress (as happens automatically when the **Playback** is operating in 'Sequence' mode), the wheels become available to control the time of the next fade when the first one is completed. Otherwise the wheels will retain control of the last fade started.

On completion of the fade, the Active display does not change until a new fade is started.

The wheels may be manually switched between controlling the times of the last fade started and the times for the next, by pressing the PRESET mimic key (?), (the one adjacent to the PRESET display), or the ACTIVE mimic key, to re–select control of the last fade. These will illuminate to show the current selection.

As the fade is taking place, two LED column indicators (corresponding to the up and down parts of the fade) light to show the fades progress. The columns reflect any fade profile recorded with the cue.

INSTant Fades



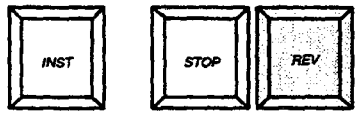
Any Move or Crossfade may be actioned instantly by holding down the INST key whilst pressing the MOVE or CROSSFADE keys.

If INST is pressed while fades are running, the latest fade will complete instantly. Holding down the Active Mimic key and pressing INST will cause all fades in progress on this **Playback** to complete instantly.

STOP Fade

Pressing the STOP key causes it to light and halt the last fade to be started. A second push cancels the indication and allows the fade to continue from where it left off. All fades under control of the **Playback** may be halted by holding down the Active Mimic key (?) while pressing STOP. A second press will then allow all fades to continue.

REVersing a Fade



When the reverse (REV) key is pressed it lights, and reverses the direction of the last fade started, restoring the original lighting. The reverse fade is carried out at the same speed as the forward fade but this may be adjusted at any time by the **Playback** wheels. Pressing the REV key a second time causes the fade direction to change again and hence progress in the original direction. If multiple Move–fades are being performed on the **Playback** these may all be reversed by use of the Active Mimic button as described for STOP.

MANUAL Fades

The need to manually control a fade is quite common, particularly in Theatre or T.V. drama. Galaxy carries out manual fades as detailed in this procedure:–

1) Transfer a memory to the Preset store.

2) Ensure that the PRESET mimic button is illuminated, and press the Manual (MAN) key, which will light also.

3) Press MOVE or CROSSFADE to determine the type of fade.

4) Move the wheels, which will now act as manual masters, from bottom to top.

The fade progress indicators will track as the wheels are moved, The fade may be reversed simply by moving the wheels back down. The left and right wheels master the up and down fades respectively.

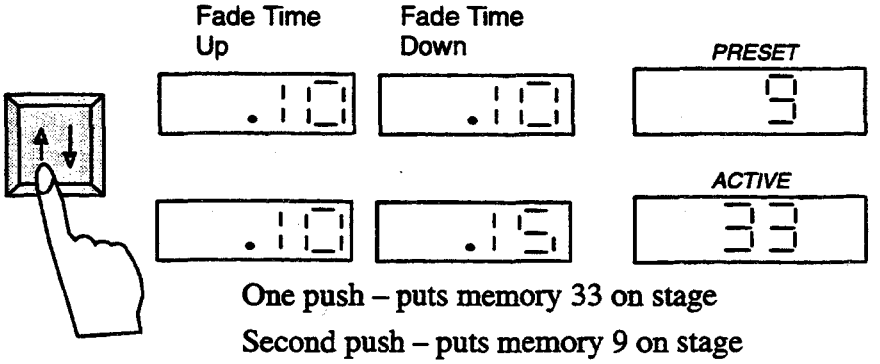
Manual mode may be selected or deselected at any time during a fade, so allowing rapid intervention if problems arise. The time display windows are not blanked when Manual is selected, as these are the times which will be used if Manual is deselected during a fade.

Multiple Move–Fades

As indicated previously, Galaxy is capable of performing more than one Move–fade simultaneously. These may be on different Playbacks, but in addition each **Playback** may run multiple Move–fades as well.

When the MOVE–FADE key is pressed, the levels in the Preset store are used and the fade is started. After this the Preset store is free to be used for the next memory (when in sequence mode this transfers automatically).

Once the next memory has been loaded into the Preset, another Move–fade may by started. The previous fade will continue to run at the speed with which it was started, while the next fade and associated times may be altered accordingly. This procedure may be repeated allowing up to twenty–four **Playback** Move–fades to be in progress at once. As each fade terminates, the MOVE–FADE key becomes available for further operation.

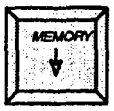


One push – puts memory 33 on stage

Second push – puts memory 9 on stage

The Playback's wheels always have control of the speed of the last fade to be initiated. Should it be necessary to speed up or slow down previous fades, this may be achieved by holding down the Active Mimic push (?). The two wheels will then proportionally vary the rates of **all** fades in progress via this Playback. The time displays continue to show the fade time of the most recent fade started.

MEMORY Transfer



Memories may be loaded into a Preset store by selecting the required number on the **Memory** panel keypad and then pressing the green MEMORY Transfer key. This wipes any previous contents of the Preset store and copies in the lighting state recorded in the selected memory. Memories may be combined in the Preset store by prefixing with '+' or '–'.

The MEMORY Transfer key lights when channels have been loaded into the Preset Store either by transferring memories or by use of a **Channel Control.** It is extinguished when the Preset is wiped or memory '0' transferred.

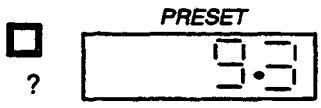
PRESET (W,X,Y,Z) Store

Each Preset has a green PRESET key which lights when pressed, cancelling similar keys on other **Playbacks** or **Preset Masters** Its purpose is to indicate that this is the Preset Store which can be modified by any **Channel Control** operating in Preset mode. It is this selected Preset whose contents are displayed when the Mimic display is routed to Preset on the **Memory/ Mimic** panel and whose contents are recorded when REC PRESET is pressed.

WIPE

The Wipe push clears the Preset, setting all channels OFF in the store, and has the same effect as transferring memory '0'.

The Preset Display



The number of the last memory to be transferred to a Preset store (with + or – prefix if applicable) is shown in the Preset display window. This display is blank initially or if the Preset store has been wiped.

A momentary action Mimic push (labelled ?) adjacent to the Preset Memory Number window switches the Mimic display to show the contents of the Preset store. When released the display reverts to its previous selection. This key has a second function, which is to change the wheels from controlling the rate of the last fade started to the time for the next fade and is lit when the wheels are adjusting the duration of the next fade. (see 'Setting Rates Of Fade').

'Mood' Control –10 +10

The Playback has a rotary control immediately above the fader wheels whose purpose is to delay the start of one part of a fade with respect to the other – The control is calibrated in tenths, e.g. +5 indicates that the Up–fade will be half completed before the Down–fade begins. It is not possible to record the setting of this control.

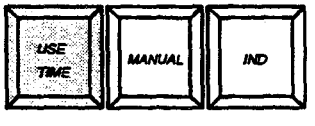
As this control can have a great effect on the appearance of a fade, a two colour indicator is fitted which lights red, when the 'Mood' control is active i.e not at zero, and green when it is at zero.

RESTORE TIME

This small button to the right of the wheels will instantly reset active or preset fade times to the previously set defaults (set via the alpha keyboard) depending on which is selected. This has the same effect as rolling the wheels back manually.

RECORD TIME

Pressing the RECORD TIME key causes the times as displayed in the time windows to be recorded onto the memory selected on the **Memory** Panel. (All other information, previously recorded in that selected memory, remains unaltered). A MANUAL time may be recorded by pressing MAN to illuminate it prior to pressing RECORD TIME. If the memory selected on the **Memory** panel has not been previously recorded, a new memory will be created with the recorded times, but with no channel levels, i.e. Blackout.



USE TIME

Pressing the USE TIME key turns the USE TIME facility from 'off' to 'on' or vice–versa. Any recorded times will only be used if the USE TIME key on the **Playback** is lit. Otherwise they will be ignored and the current time settings of the wheels used. If USE TIME is lit the wheels will automatically be set to the recorded time when the memory is transferred into the Preset store. This may be altered by moving the wheels if required either before starting the fade or whilst it is running.

SEQuencing of Memories

Like the USE TIME key above, the SEQ key also acts as a toggle for 'on' and 'off' action. After a **Playback** fade has been started, the next memory required will be automatically loaded to the Preset store.
(See section 3.5 'Playback Memories').

Pressing the **Playback** MEM↓ key always transfers the number selected on the **Memory** panel keypad to the Preset store, regardless of whether SEQ is selected or not. However, if the Preset store is loaded automatically, by the **Playback** sequencing, the **Memory** keypad number is ignored and the next memory in the sequence is transferred.

This mechanism allows two or more **Playbacks** to operate sequences of fades totally independent of each other and independent of the **Memory** keypad.

INDependent

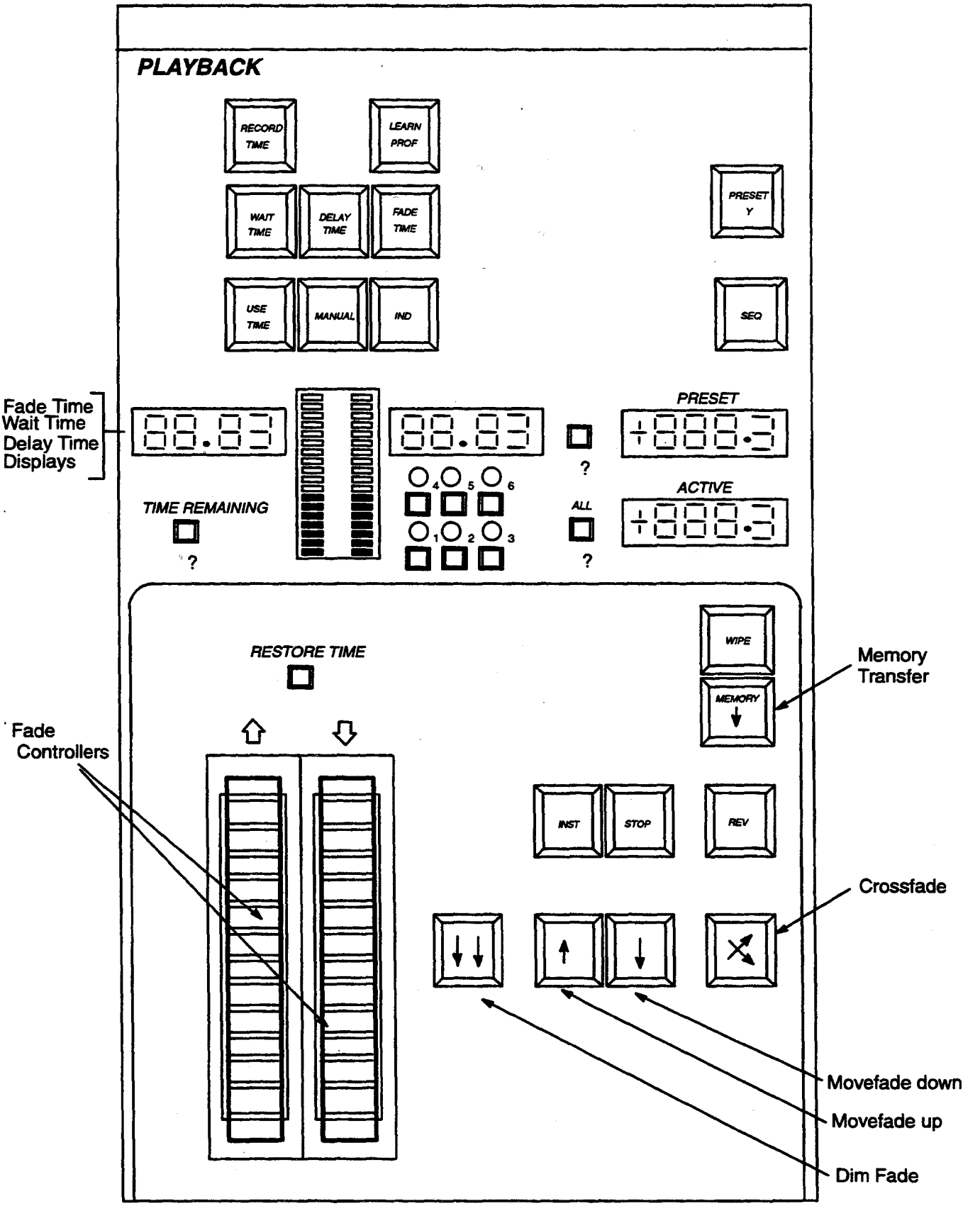
The Independent (IND) keys throughout the Galaxy system are described in section 5.3 (page 59) and their use on the **Playback** is the same. IND may be pressed at any time and will light if this mode is selected. Any fade currently in progress on this **Playback**, or subsequently started will have all channels that are used by it locked onto this panel and will not be available for modification by a **Channel Control** or for changing by any fade action on another **Playback** panel.

This facility may be used to ensure that channels fading in a slow **Playback** fade are not inadvertently 'stolen' by another fade or **Channel Control** action. If the Independent mode is deselected all channels under control of the **Playback** will again be available for control by other parts of the system.

Once a fade has completed and a subsequent fade started, the former fade is no longer available for control. Its channels are Parked, and their Independent status cleared.

6. 3. ADVANCED PLAYBACK

Fig. 6.2 Advanced Playback



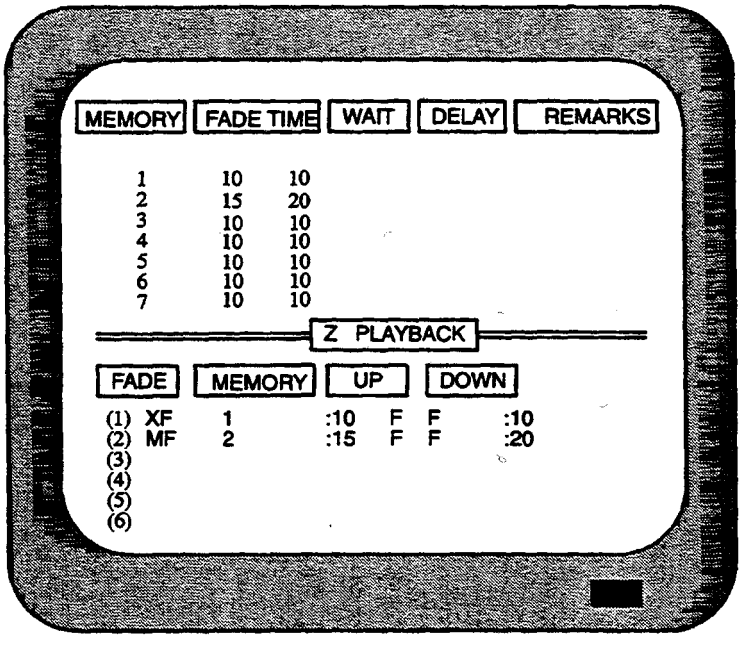
Introduction

The **Advanced Playback** has controls identical to that of the **Standard Playback**, with the exception of the MOOD CONTROL and offers many other facilities besides. In particular, complex sequences of follow–on or multi–part fades may be actioned simply by pressing a single key, and the panel can 'learn' fades performed manually, so that the same effect can be reproduced automatically each time the memory concerned is used.

The major difference between the **Standard** and **Advanced Playbacks** is that, with USE TIME selected, the latter operates using WAIT and DELAY times which may be recorded with each memory. These times may be used together to determine the time between recalling the memory and auto–execution of the fade.

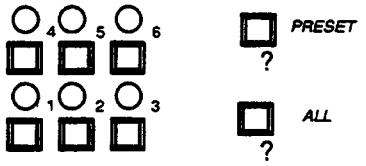
To be fully effective, **Advanced Playback** systems require an additional (Auxiliary) monitor, the second monitor being assigned exclusively to this **Playback.** The monitor display consists of a special memory list and a comprehensive Fade Status display which shows all fades associated with this **Playback.** For systems with more than one **Advanced Playback** panel fitted, this display can be assigned from one panel to another by using the PRESET (W,X,Y,Z) key on the relevant panel.

Fig. 6.3 Monitor–Advanced Playback



For installations where a console is likely to be re–located, you should note that the display on the auxiliary monitor will only operate if the **Advanced Playback** panel is fitted. The second monitor will be blank if this panel has been removed for any reason.

Fade Access Buttons



Up to six simultaneous move or Dim fades may be controlled from an **Advanced Playback**. These fades may be selected at any time for modifying times etc., either singly or as a group, by means of the Fade Access buttons. These are labelled from 1 to 6, with the seventh labelled ALL; an eighth button labelled '?', next to the PRESET memory display gives access to information in the Preset store.

Assignment of fade to the access buttons is determined automatically at the commencement of each fade. The appropriately numbered Fade Access button illuminates to indicate which fade was the last to be assigned and which, therefore, is currently under control.

Above each access button is an indicator which shows the current status of the associated fade. This indicator can show either red or green illumination as follows:–

a) RED – If both Up and Down parts of the fade are counting down Delay times.

b) GREEN –If either or both parts of the fade are actually in progress.

On completion of the fade the indicator is extinguished. However, should a fade which has completed be reversed, the appropriate indicator will again show green illumination.

Fade Access Button Assignment

Fade access buttons are assigned as follows:–

a) CROSSFADES are always assigned to button 1; all other fades are terminated and the channels concerned, parked. The previous fade assignments are cleared.

b) MOVE–FADES (OR DIM–FADES) are assigned to the next available button in numeric sequence (1–6); each fade may then be uniquely accessed. As the six fades complete, the corresponding buttons become available for re–assignment. If a seventh MOVE or DIM–FADE is then started, the lowest numbered button available will be used.

c) If all six fade access buttons are in use and a seventh MOVE or DIM–FADE is started, the fade nearest completion will be terminated and the appropriate channels parked. The button thus made available will then be used for the new, or latest, fade.

Caution:– Under these circumstances channels which are parked may not have reached their correct destination levels.

Note:– 1) Unlike the **Standard Playback,** channels remain assigned to a **Advanced Playback** fade access button until either the channels are controlled elsewhere in the system, or a new fade is assigned to the button concerned; this allows the reversal of multi–part MOVE FADE sequences.

2) A fade which is in 'progress' is assumed to be nearer completion than a fade that has one or both parts still running Delay times.

The **Advanced Playback** display on the Auxiliary VDU includes a comprehensive display of Memory/fade access button assignment.

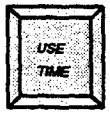
Any fade may be selected at any time by means of the 'Fade Access' buttons. Selection may be made individually or as a group. To gain access to more than one fade, press all required Fade Access buttons simultaneously. The Fade Access buttons illuminate when the corresponding fades are selected.

All six fades may be selected at once by pressing the '? ALL' button beside the ACTIVE memory number display.

Whilst held down, Fade Access buttons 1 to 6 produce a VDU display of the channels under control of the corresponding fade. This display is on the main VDU not the **Advanced Playback** one.

Note:– Although any active fade access button may be selected at any time, care must be taken when fades are starting automatically. The new fade and FADE TIME are normally selected automatically each time a fade or Delay starts. This may be prevented, however, by holding down the appropriate access button while making adjustments to an earlier fade.

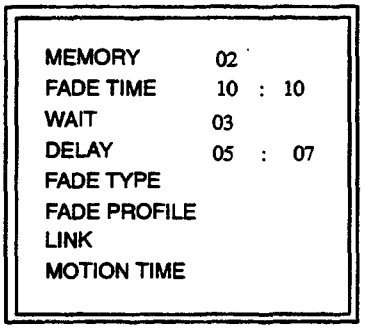
Controls not described in this section are identical in use to those described in the **Standard Playback** section.

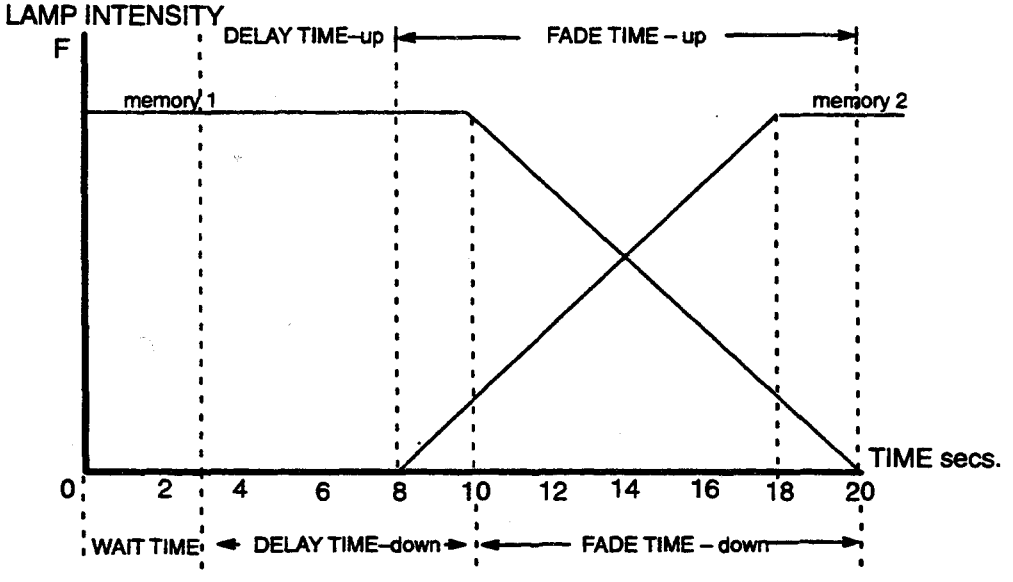
USE TIME 

When USE TIME is selected as well as using recorded fade times and profiles, the **Advanced Playback** operates using WAIT and DELAY times previously recorded with each memory. These are used together to determine the time between recalling a memory and the automatic start of a fade, e.g. a WAIT TIME of 03 would mean a memory recalled to the Preset store of the **Playback** would automatically start to fade 3 seconds after pressing the MEMORY ↓ key.

Additionally, following transfer of a memory to preset, if there are no DELAY TIMES both parts of the fade will start immediately. If there are DELAY TIMES, say of 05 and 07 this same memory would start its up–fade after a further 5 seconds and its down–fade after 7 seconds.

Fig. 6.4 Wait, Delay Time Graph



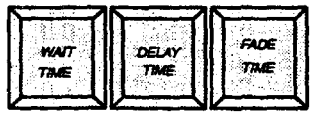


With no WAIT time, the fade has to be started using the CROSS or MOVEFADE keys.

If SEQ is selected as well as USE TIME, the necessary memory recall actions will take place automatically, thus making it possible to execute a complete series of fade actions from a single key operation.

In the following descriptions, it is assumed that USE TIME is selected, unless otherwise stated.

DELAY, WAIT & FADE TIMES



DELAY times may be set on the Alpha Numeric Keyboard, the **Memory** panel or on the **Advanced Playback**.

Note:– Wait times cannot be set initially on the **Advanced Playback** panel.

Both WAIT and DELAY may be adjusted whilst in progress; WAIT TIME, DELAY TIME and FADE TIME keys assign the wheels to one of these parameters in order that adjustments can be made. The RESTORE TIME button will restore WAIT TIME to infinity, DELAY TIME to zero, and FADE TIME to the previously set default.

If a memory has a recorded WAIT TIME, recalling that memory to the Preset store of an **Advanced Playback** will automatically start the fade, after this time has elapsed.

The Up and Down Delay times then determine how soon the actual fade starts. If there are no Delay times or if USE TIME is not selected, both parts of the fade will start immediately.

The 'Wait Time' associated with the contents of the Preset store, may be examined by pressing the PRESET mimic push (?) and then operating the WAIT TIME button. The same operation also applies to the DELAY TIME.

While a Delay is in progress, the appropriate fade initiation keys (CROSS/MOVEFADE) will be dimly illuminated. When any part of the fade is active, these keys become fully illuminated to show that the fade is in progress.

WAIT TIMES can be set for a sequence of memories, causing a string of follow on cues, to be instigated automatically after starting the first fade memory.

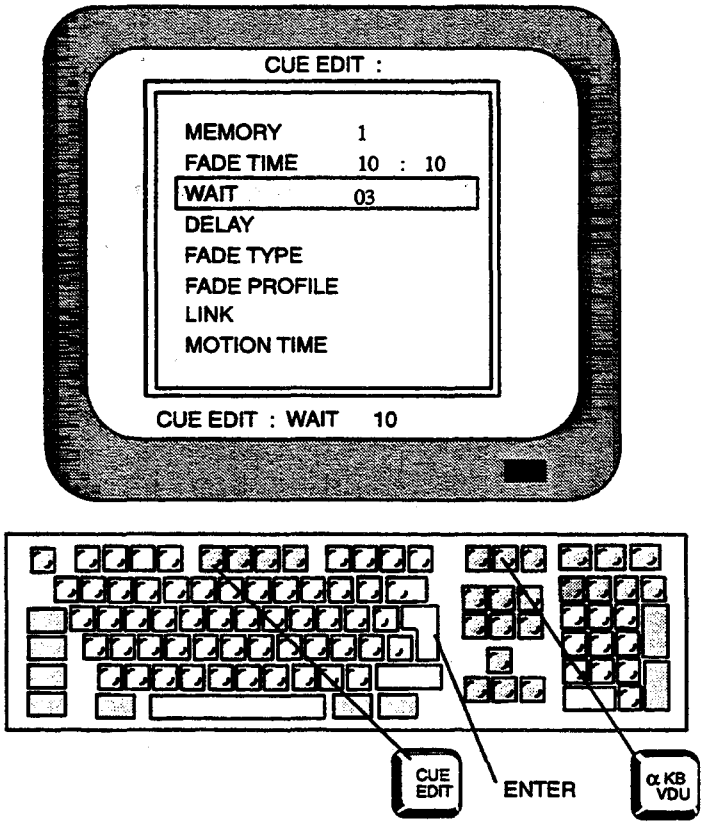
Note:– Adjusting the WAIT TIME of a memory will change the start time of all subsequent 'follow on' fades.

Adjusting the DELAY TIME will only change the start point of that fade. This is because the next memory is loaded into the Preset when the WAIT TIME of the previous fade expires and the DELAY TIME, if any, starts.

How to Set up a Wait Time

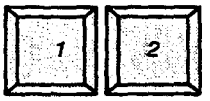
Use the WAIT TIME facility on the **Memory/Mimic** panel or the CUE EDIT facility on the alpha keyboard. For this example the CUE EDIT facility is utilised. Record as follows:–

- Select CUE EDIT on the Alpha Keyboard and press αKB VDU on the keyboard or ALPHA on the Memory/ Mimic panel to select the VDU mimic display.
- Enter Memory number on the keyboard.
- Move the Highlight to WAIT TIME with the up/down cursor keys on the keyboard.
- Set an appropriate time on the keyboard. Press ENTER.

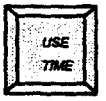


Modifying Wait Times

Select the Memory number to be altered on the **Memory** Panel.



Ensure USE TIME is lit.



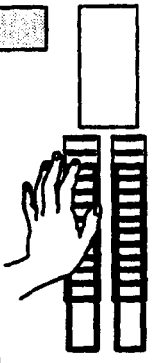
Press MEMORY ↓ on the **Advanced Playback.**

Press the mimic button next to the PRESET display

Press WAIT TIME.

WAIT TIME will now be displayed in left hand time window.

Move left hand wheel to adjust time



Press RECORD TIME to write the new time into memory.

If the existing WAIT TIME is short, it will be necessary to STOP the Wait count–down by pressing the STOP key after pressing WAIT TIME while the adjustment is being made. If this is not done, the Wait time may expire and the fade will start.

When the fade commences, Active fade time will automatically be selected for modification instead of Preset wait times and you should be aware of this as it may lead to adjustment of the wrong fade parameter.

Alternatively, re–record the wait time using the WAIT TIME key on the **Memory/Mimic** panel, or using the CUE EDIT

Adjusting a Wait Time while it is in Progress

If the Wait time has started but not yet expired, the Up fade wheel may be used to adjust the time. Before adjustment can be made, both WAIT TIME and the Preset store must be selected as described above. The dedicated **Advanced Playback** monitor will display the 'count down' of remaining wait time in the colour magenta.(purple).

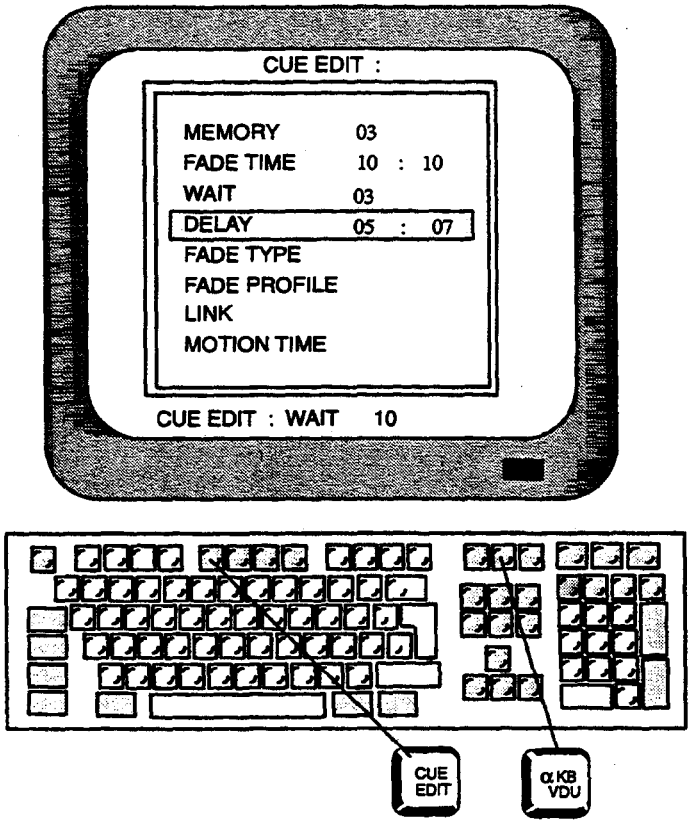
A Wait time may be over–ridden and completed instantly by operating any of the following keys; CROSS, MOVE, or DIMFADE. If the memory concerned has a recorded FADE TYPE, this type of fade will occur regardless of which key which is used, but if there is no recorded FADE TYPE the correct key(s) must be operated.

How to Set Up a Delay Time

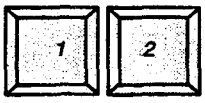
Use the DELAY TIME facility on the **Memory/Mimic** panel, the CUE EDIT facility on the alpha keyboard or the **Advanced Playback** as described in modifying Delay times on the next page.

For this example the CUE EDIT facility is utilised. Record as follows:–

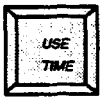
- Select CUE EDIT on the Alpha Keyboard and press αKB VDU on the keyboard or ALPHA on the Memory/ Mimic panel to select the VDU mimic display.
- Enter the Memory number on the keyboard.
- Move the Highlight to DELAY TIME with the up/down cursor keys on the keyboard.
- Set the required times on the keyboard. (Make sure the time entries are entered with at least one space between them).
- Press ENTER.



Modifying Delay Times



Select the Memory number to be altered on the **Memory/Mimic** Panel.

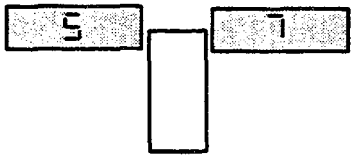


Ensure USE TIME is lit

Press MEMORY▼ on the **Advanced Playback.**

Press the mimic button next to the PRESET display

Press DELAY TIME.



Both DELAY TIMES will now be displayed in the time windows.

Move the appropriate wheel to adjust each time.

Press RECORD TIME to write the new time into memory.

Note:– The above procedure may be used to set up Delay times, although it is not then necessary to select USE TIME or transfer the memory to the **Advanced Playback** prior to recording.

Adjusting Delay Times while they are in Progress

If either of the Delay times has not yet expired, the fade control wheels may be used to make adjustments. Ensure that DELAY TIME and the appropriate fade access button(s) are selected. The dedicated **Advanced Playback** VDU gives a 'count–down' display, in red, remaining times.

A Delay time may also be over–ridden by selecting the appropriate fade access button and operating the dimly illuminated fade initiation key(s), thus forcing the fade to start.

The INST, STOP and REV keys

The INSTant STOP and REVerse keys have different effects on WAIT, DELAY and FADE times, depending on the fade access button/preset store selection. The table below lists these.

Fig. 6.5 INST,STOP, REV functions – Advanced Playback

FADE ACCESS /PRESET	INST 	STOP 	REV 
 Preset Mimic	No Effect	Stops, or if illuminated restarts WAIT count-down	Sounds Error Alarm
 Any fade access button	Completes Delay and Fade Instantly	Stops Delay, Fade OR if STOP illuminated restarts Delay, Fade	If a Delay is in progress, this will be completed instantly. A Fade which is in progress will be reversed.
 More than one fade access button	Completes BOTH Delays and Fades Instantly	First operation stops SELECTED Delays and Fades that are in progress Second operation restarts SELECTED Delays and Fades	SELECTED Delays in progress will be completed instantly. SELECTED Fades which are in progress will be reversed.
 All fade access buttons	Completes ALL Delays and Fades Instantly	First operation stops ALL Delays and Fades that are in progress Second operation restarts ALL Delays and Fades	ALL Delays in progress will be completed instantly. ALL Fades which are in progress will be reversed.

Notes:–

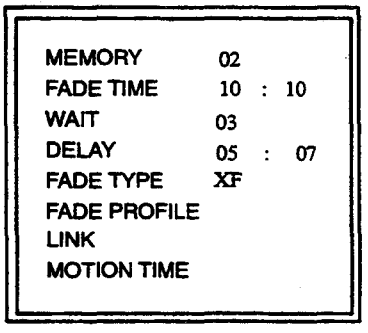
1) RECORD TIME will record all three times: WAIT, DELAY and FADE into the memory selected using the keypad on the MEMORY panel.

2) Using the alpha–keyboard, FADE, WAIT and DELAY times may be entered as Seconds only (e.g. 10); Seconds, 'point', 10ths of Seconds (e.g. —— 09.3); as Minutes: Seconds (e.g. 2:30); or as Minutes: (e.g. —— 5:0.) In the case of Fade Time and Delay time, if only a single value is entered, this is taken to apply to both up and down times.

3) The error alarm sounds if an invalid entry is attempted.

4) 'CUE EDIT' allows the entry and display of time with a resolution of 0.1 sec for WAIT, DELAY and FADE Times of less than 10 seconds. The other VDU displays and playback panels are unable to display times at this increased resolution.

Fade Type



As on the **Standard Playback,** the type of fade, i.e. Crossfade or Move–fade, is normally determined by pressing the appropriate key. The **Advanced Playback** is provided with a CROSSFADE key, separate MOVEFADE–UP and MOVEFADE–DOWN keys and a DIM–FADE key. This key produces a special type of Move–fade, in which any channels On in the PRESET store fade to zero.

In order that automatic fade sequences may include all these types of fade, a FADE TYPE may be recorded with each memory – this may be done using CUE EDIT mode on the Alpha Numeric keyboard or, in the case of Move–fade, by using the RECORD MOVE facility on the **Channel Control** panel. Once a memory has a recorded FADE TYPE, this will be used whenever the memory is recalled to a **Playback** (of any type).

Note:– if a memory has a recorded WAIT TIME, but no FADE TYPE, a Crossfade will result when the WAIT TIME expires; it will, however, be possible to determine the FADE TYPE when using the MOVE and DIMFADE keys to over–ride a Wait time.

Fade types should be entered on the alpha keyboard as XF (Crossfade), MF (Move–fade) or DF (Dim–fade).

Automatic Fade Sequences

If the SEQ key is illuminated (i.e. Sequence is selected) in addition to USE TIME, completely automatic fade sequences are possible, using WAIT, DELAY and FADE TIMES recorded with each memory. The sequence is started by recalling the first memory to the **Advanced Playback** PRESET store.

RESTORE TIME

RESTORE TIME key 

The RESTORE TIME key operates in conjunction with the WAIT TIME, DELAY TIME and FADE TIME keys at the top of the panel.

RESTORE TIME will restore Wait time to infinity, Delay time to zero and Fade times to the previously set defaults.

TIME REMAINING

TIME REMAINING button ?

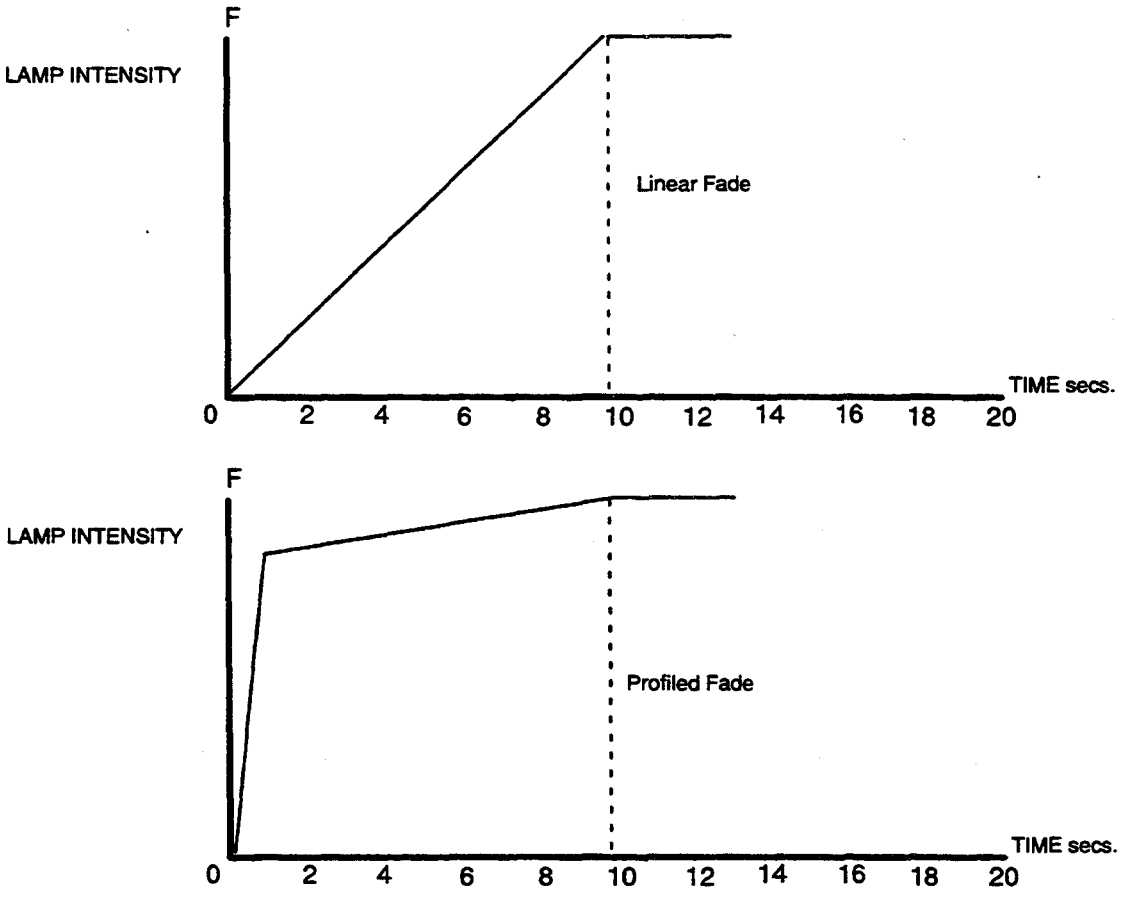
The TIME REMAINING button is an electronically latching alternate action button which allows the fade time displays to show the time remaining for the selected fade parameter (i.e. WAIT TIME, DELAY TIME or FADE TIME) of the currently selected fade.

The fade–time remaining may be displayed by operating the electronically latched 'TIME REMAINING' button.

6. 4. FADE PROFILES

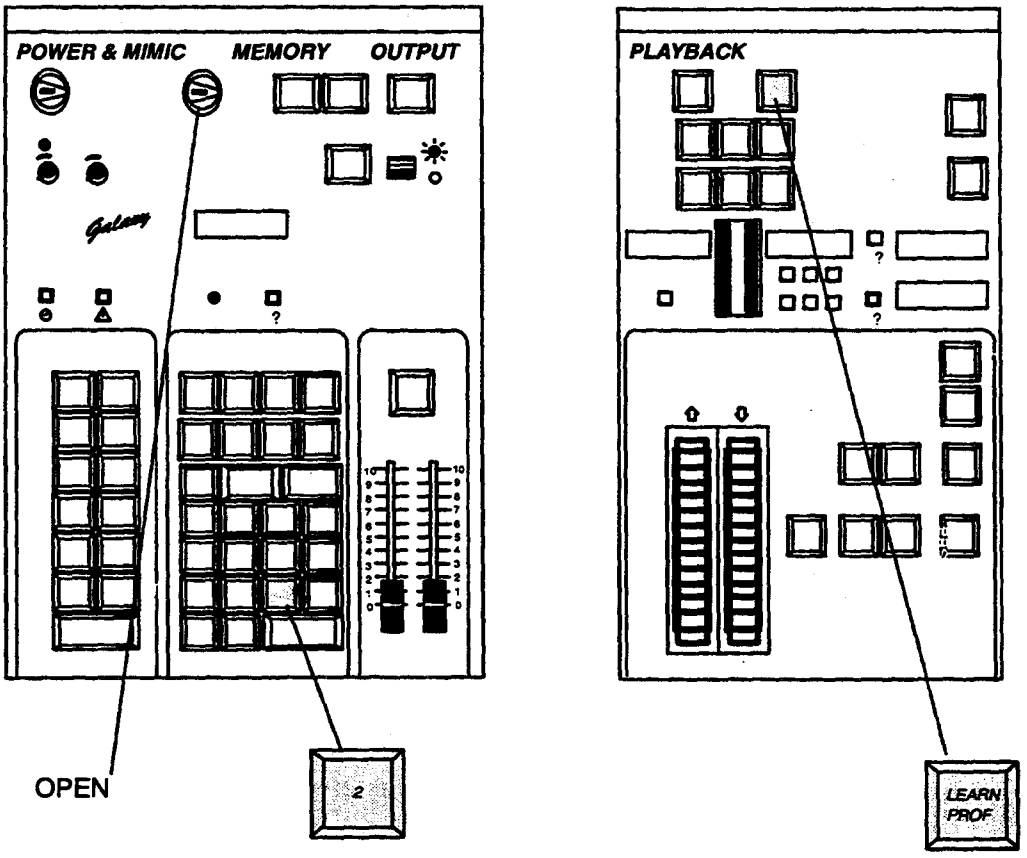
All **Playbacks** (not just **Advanced Playback**) are able to use recorded Fade Profiles. A fade profile determines how much of a fade is carried out in a given proportion of the fade time. A fade profile is only used if USE TIME is selected when the memory concerned is transferred to the **Playback** Preset store.

Fig. 6.6 Fade Profile Graph



Fade Profiles may be set or modified using either the Alpha Numeric keyboard or, as the fade action takes place, using LEARN PROFILE mode on the **Advanced Playback.** Up to ten fade profiles may be recorded, memories being assigned to one of the ten fade profiles or to linear (by removing the fade profile assignment) using the Alpha Numeric keyboard in CUE EDIT mode; assignment is automatic when using LEARN PROFILE.

Learning a Fade Profile



1) Set up the required start and finishing states on Stage and in Preset respectively.

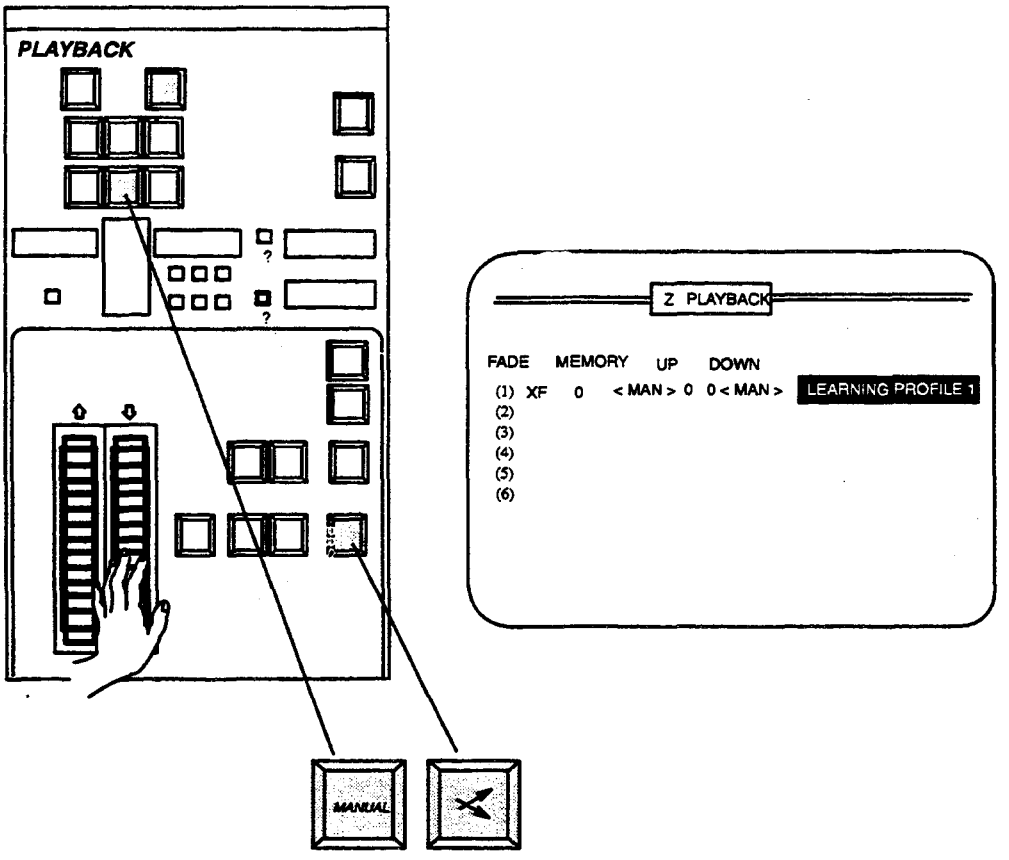
2) Select a number between 1 and 10 for the Fade profile about to be created; enter this number on the Memory Number keypad.

3) Ensure that recording is enabled, i.e. that the Memory keyswitch is in the OPEN position.

4) Press the LEARN PROFILE key on the **Advanced Playback;** the key illuminates.

Note:– That the error alarm will sound if the number displayed above the Memory Number keypad is not a valid profile number, or if recording is not enabled.

5) Check that the preset store is selected. If not press ? PRESET to select it



6) Select MANUAL mode on the **Advanced Playback.**

7) Press the appropriate Fade initiate key(s): CROSSFADE, MOVEFADE–UP, MOVEFADE or DIM–FADE. The words '* **LEARNING PROFILE nn** *' will appear against the corresponding fade access key on the Advanced Playback VDU.

8) Carry out a Manual fade using the fade control wheels in the normal way.

The system will exit from LEARN PROFILE mode when the fade completes, i.e. when both Up /Down fades reach maximum; this is indicated by the LEARN PROFILE key extinguishing and the VDU message disappearing. The fade profile is only assigned to the selected profile number on completion of the fade; up to this time, LEARN PROFILE can be aborted in the following ways:

a) By pressing LEARN PROFILE a second time.

b) By starting another fade anywhere in the system. If required, this can be prevented by setting the playback into Independent mode.

c) By turning the Memory keyswitch to the LOCK position to inhibit recording.

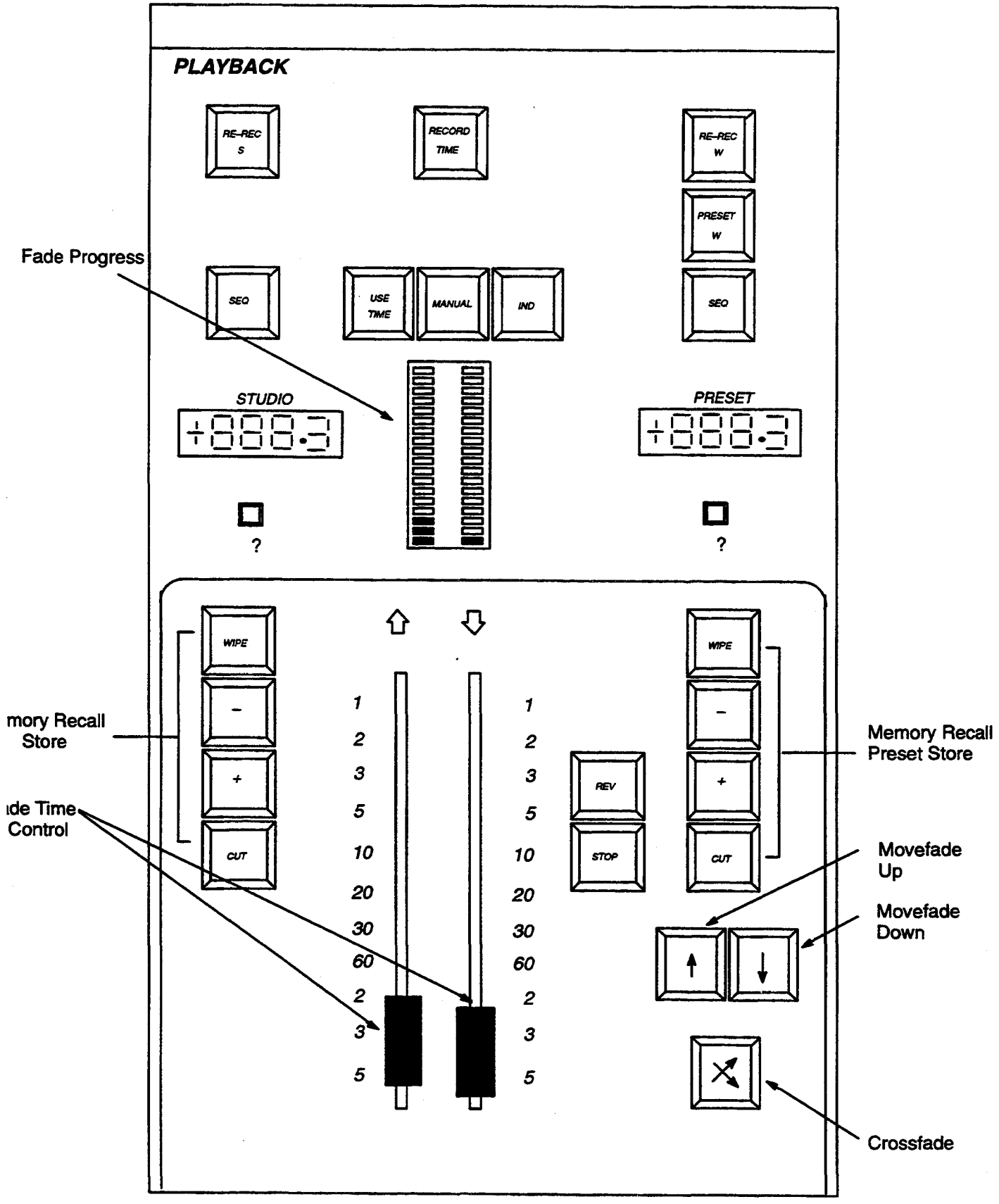
In all cases the error message **'LEARN PROFILE ABORTED'** will be displayed.

The number of the Fade profile created will be that which was shown in the memory number at the start of the learn process. Once the process has started, the memory keypad may be cleared or used to select memory numbers. On completion of the learning process, the fade profile just created will be automatically assigned to the memory whose number appears in the ACTIVE display on the **Advanced Playback.** The recorded fade time for the memory will also be updated.

A fade profile may be used on more than one memory, by assigning it using the CUE EDIT facility on the alpha keyboard.

6. 5. STUDIO PLAYBACK

Fig. 6.7 Studio Playback



Introduction

The Galaxy **Studio Playback** is divided into two sections, STUDIO and PRESET, mode each with CUT, '+', (Plus), '–' (Minus) and WIPE keys. The STUDIO controls operate directly into the Galaxy 'S' store while the Preset controls provide access to a Preset store which may be used to hold a lighting scene ready for fading or, routed to a **Channel Control**, for blind plotting.

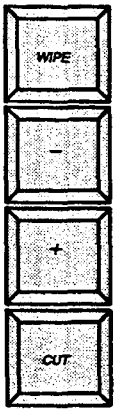
The fade controls comprise:– CROSSFADE, REV, STOP and MANUAL, MOVEFADE–UP and MOVEFADE–DOWN keys. Two faders, one for up and one for down calibrated from 1 second to 5 minutes govern fade duration.

Also included are two re–record keys, 'RE–REC S' and 'RE–REC W' which allow the state of the 'S' store and the state of the corresponding PRESET store to be re–recorded following modifications. A REC TIME key is also provided.

STORE CONTROLS

CUT, +, –, WIPE

Memories may be recalled directly to the 'S' store by means of three keys: CUT, '+' (Plus) and '–' (Minus). CUT has the effect of an instant crossfade to the memory whose number is displayed in the window above the **Memory** panel keypad. (Also refer to SEQUENCE on the next page).



The key '+' is similar, but adds the contents of the new memory to the lighting already in the 'S' store, common channels being subject to the Latest–takes–precedence rule. The key '–' switches Off in the 'S' store all common channels in that store and in the selected memory.

> **Note:–** Any '+' or '–' prefix to the memory number will be ignored and memories may not, therefore, be combined in advance.

The WIPE key, has the same effect as recalling memory 0, i.e. it sets all channels Off in the 'S' store.

SEQuence

As an alternative to selecting each memory number on the **Memory** panel keypad, memories may be automatically recalled in numeric sequence. This is selected by means of the SEQ key. The key is illuminated when sequence mode is selected and, under these circumstances, whenever the CUT, '+' or '–' keys are operated the next memory in numeric sequence will be automatically recalled. The next memory is always selected with reference to the number currently displayed in the STUDIO window and the sequence will include memory 0 (blackout). Only memories which have been recorded will be used (unused number will be stepped over) and any recorded links will be taken into account.

Interrogate Push

The Interrogate push (?) below the STUDIO display window is used to display on the VDU the channels which are currently in the S store. This is irrespective of whether the channels are, or were, controlled via the **Studio Playback**, or any other panel.

Memory Number Display

The STUDIO display window shows the number of the last memory recalled to the 'S' store via the **Playback.** If the memory was recalled using the Plus or Minus keys, the number is prefixed '+' or '–' as appropriate. A '+' prefix will also be added to the display if the lighting state in the S store is not an identical copy of the memory. i.e. if the lighting state has been modified in any way since the memory recall. Any existing prefix, however, will remain unchanged.

PRESET CONTROLS

The Preset controls are similar to those described above, consisting of CUT, '+', '–' and WIPE keys which are used to recall memories to the associated Preset store. There is, however, one important difference regarding the operation of the '–' key. When the Preset '–' key is operated, all of the channels which are on in the new memory will be set On at zero in the Preset store. If a Move–fade is now started, these channels will fade to zero in the 'S' store, whereas channels which are Off in Preset will not take part in the fade.

Preset Sequence

As S sequence, plus fade actions do an auto cut in the preset store.

Preset (W,X,Y,Z) Store

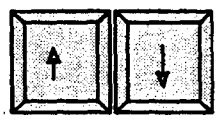
Each **Playback** has a green PRESET key which lights when pressed, cancelling similar keys on other **Playbacks** and **Preset Masters.** Its purpose is to indicate that this is the Preset Store which will be modified by any **Channel Control** operating in Preset mode. It is this selected Preset whose contents are displayed when the **Memory/Mimic** panel is routed to Preset, and whose contents are recorded when REC PRESET is pressed.

Interrogate

The Interrogate push below the PRESET memory number window is used to display the contents of the Preset store on the VDU.

Memory Number Display

The PRESET display window shows the number of the last memory recalled to the Preset store. If the memory was recalled using the Plus or Minus keys, the number is prefixed '+' or '–' as appropriate. A '+' prefix will also be added to the display if the memory modified in the Preset store is using a **Channel Control** switched to PRESET. Any existing prefix, however, will remain unchanged.



Move Fade UP/DOWN

The fade controls on the **Studio Playback** allow a Movefade–up to be started independently of a Movefade–down and vice–versa.

USE TIME

This loads times and profiles into the **Playback** when the memory is transferred to preset. Faders then have no effect except when MANUAL mode is selected.

Setting Fade Times

These are set by utilising the right fader for FADE DOWN time and the left fader for FADE UP time. Faders may be moved any time during the fade in order to speed up or slow down the fade duration.

Studio Memory Number Display

When a fade is initiated, a '+' prefix will be added to the STUDIO memory number display to indicate that the 'S' store contents are being modified. (an existing '–' prefix will remain unchanged). On completion of the fade, the number will change to the one shown in the PRESET window.

Multiple Move–fades

Initiating a Move–fade does not effect any fades which may already be in progress (except, of course, in the case of common channels). If, however, several fades have been initiated on the **Playback**, these will all be subject to the settings of the faders. Thus, speeding–up or slowing–down the latest fade will also speed–up or slow–down any previously initiated fade which may still be in progress. Similarly, the STOP and REVerse keys will affect not only the latest fade, but also any other fades initiated on the **Playback** which may still be in progress. Fades initiated on other **Playback** panels will not be affected.

Manual Fades

The manual operation procedure is as follows:–

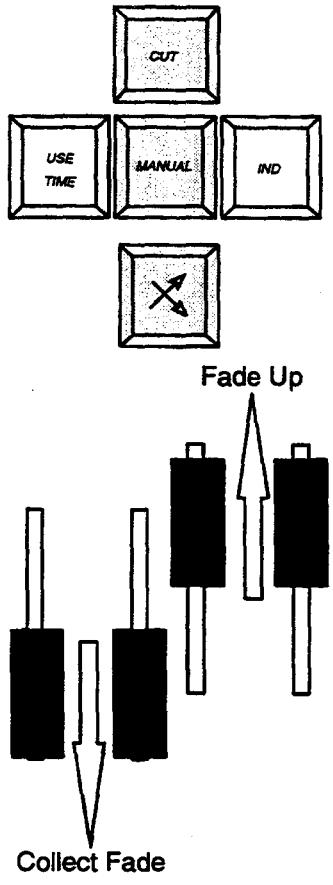
1) Cut the next memory to the Preset store.

2) Press the Manual (MAN) key, which will light.

3) Press CROSSFADE or MOVEFADE–UP MOVEFADE–DOWN to determine the type of fade.

4) Move the Fade duration controls, which are now manual masters, to the bottom to 'collect' the fade. The fade is then actioned by moving the controls from the bottom to the top at the required rate. The fade progress display above the faders will track as the faders are moved upwards.

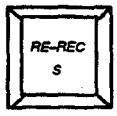
The fade may be reversed at any time by simply moving the faders down again.



Manual mode may be selected or de–selected while a fade is in progress. If selected the fade will stop and the faders must then be matched to the fade progress display to 'collect' the fade. If manual mode is de–selected the fade will immediately resume at the speed currently set on the faders.

> **Note:** When Manual mode is selected, all of the fades currently in progress under the control of the **Playback** will stop. Only the latest fade may then be taken under Manual control or restarted.

Record keys



Two record keys, RE–REC S and RE–REC W, are provided, these have a slightly different function to the other record keys in the system and can be used only for updating existing memories.

RE–RECORD S

When the RE–REC S key is operated (provided that the MEMORY LOCK keyswitch is in the OPEN position) the current state of the 'S' store will be recorded in the memory whose number is displayed in the STUDIO display window. The lighting state recorded will not include any contributions from the Preset Masters and the settings of the Grand Master faders will be ignored. If there is no number displayed in the STUDIO window, the system alarm will sound.

RE–RECORD W

The RE–REC W key is similar in operation to RE–REC S, but in this case the state of the appropriate Preset store is recorded in the memory whose number is displayed in the PRESET window.

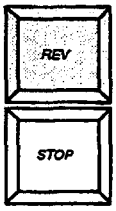
RECORD TIME

The REC TIME key, when fitted records the time currently set on the faders or, if the MANUAL key is illuminated, this time will be recorded instead.

STOP

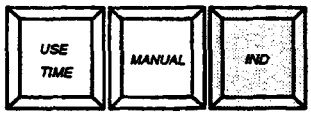
Pressing the STOP key causes it to light and halt all running fades. A second push will cancel the indication and allow the fades to continue from where they left off.

REVersing a Fade



When the reverse (REV) key is pressed it lights, and reverses the direction of the last completed fade therefore restoring the original lighting. In addition all running movefades will be reversed. The reverse fade is carried out at the same speed as the forward fade but this may be adjusted at any time by the faders. Pressing the REV key a second time causes the fade direction to change again and hence progress in the original direction.

INDependent

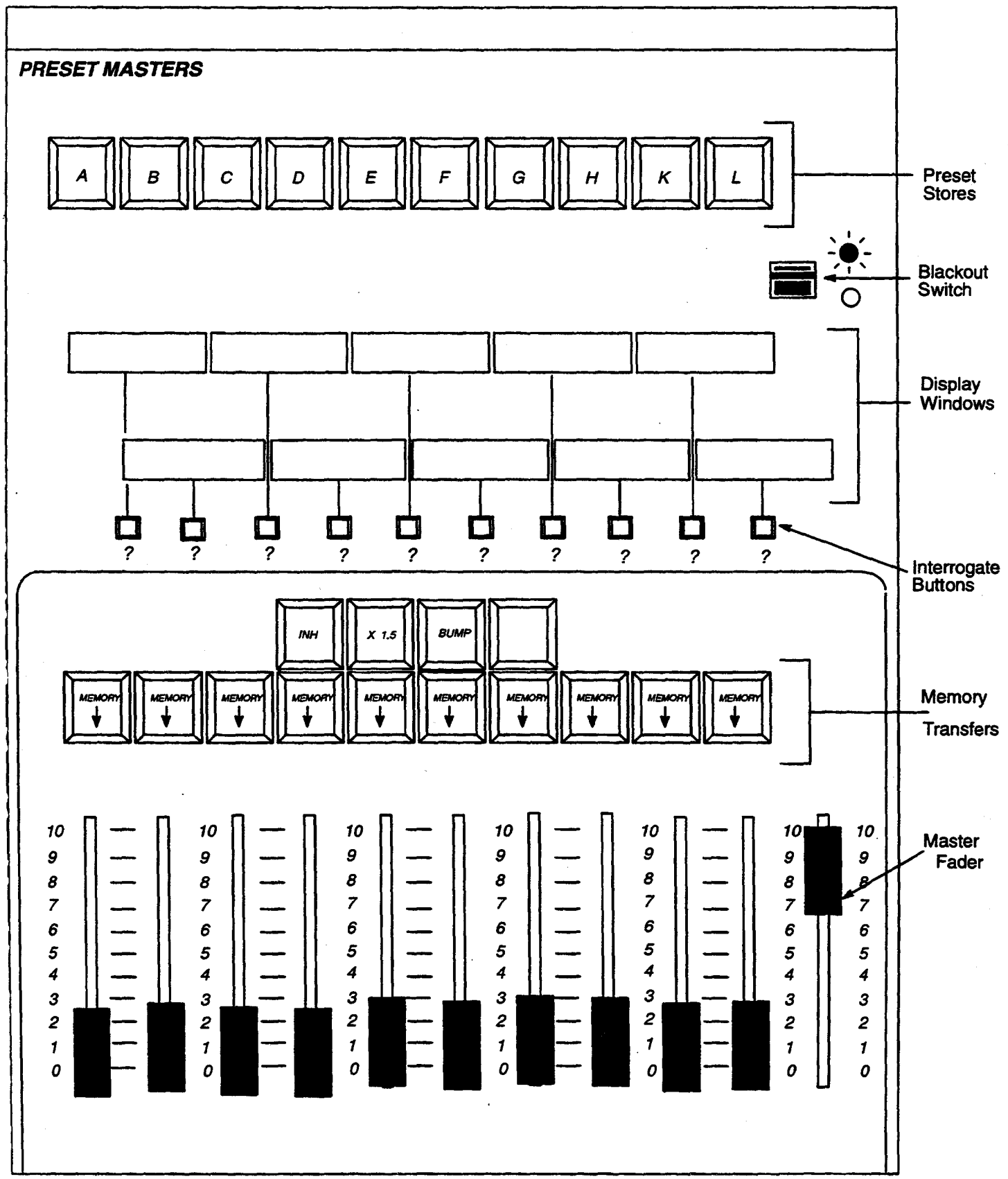


The purpose and operation of the Independent (IND) keys throughout the Galaxy system are described in section 5.3 (page 59). and their use on the **Studio Playback** is the same.

IND may be pressed at any time and will light if this mode is selected. Any fade currently in progress on this **Playback**, or subsequently started will have all channels that are used by it locked onto this panel and will not be available for modification by a **Channel Control** or for changing by any other fade action.

7. Preset Masters Panel (option)

Fig. 7.1 Preset Masters Panel



Introduction

This optional panel has ten Preset Master faders, each of which has an associated MEMORY TRANSFER key and memory number display. At the top of the panel is a row of ten green, illuminated keys labelled A, B, C, etc. which are used to select the required Preset when using a **Channel Control** in PRESET mode, or when recording lighting states using the REC PRESET key.

The ten Preset stores associated with the panel are totally independent of each other. Each may hold a complete lighting scene, which may include channels set at different levels in other preset stores or in the Galaxy 'S' store.

The combined output of the ten Preset Masters is controlled by a Grand Master fader.

A maximum of 2 Preset Master panels may be installed in the system. They may be located on either console, or both on one. The first panel contains masters A to L, with the second containing M to V. The first panel shares its functions with the **Programmable Effects** panel.

Setting-up lighting using the Preset Masters

Lighting may be set up either 'blind' or 'live' in any one of the Preset Master stores, using a **Channel Control** set to PRESET. The Preset store required is selected by means of the green selection keys (A, B, C, etc.) and the setting of the appropriate master fader determines the blind/live state.

Note:- The Blackout switch must be ON and the Grand Master at position 10 (Full) when working live.

Channels selected and adjusted on the **Channel Control** will immediately be set in the appropriate Preset store and the MEMORY TRANSFER key above the fader will light to show that the Preset is in use. The 'last' entered channel number plus a 'C' will be shown in the appropriate display window if the option has been selected in the 'SYSTEM CONFIGURATION' facility on the alpha keyboard. Adjusting the Preset fader will then vary the channel levels proportionally in the corresponding Preset store.

The lighting controlled by any one of the Preset Masters may be recorded independently of any other lighting by means of the REC PRESET key (**Channel Control**). The required memory is selected on the **Memory/Mimic** keypad, and the Preset store by means of the green selection keys. Channel levels recorded will be those in the Preset store, no account will be taken of Master or Grand Master fader settings, or of the setting of the 'x1.5' mode.

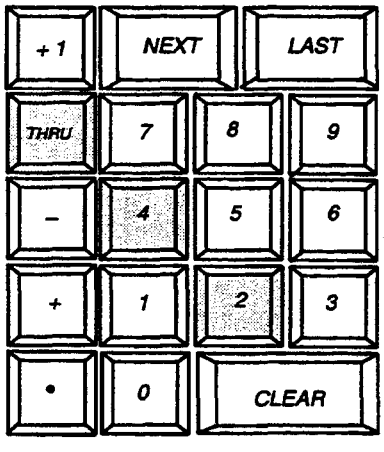
Recalling Memories to the Preset Masters

A memory may be recalled to a Preset Master at any time by selecting the required memory number on the MEMORY/MIMIC keypad and pressing the appropriate Memory Transfer key. Unless the number is prefixed by '+' or '–', any previous lighting in the store will be completely replaced by the memory. The number of the transferred memory will be shown in the appropriate display window.

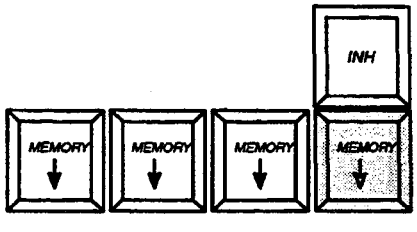
Note:– The corresponding Preset Selection key need not be illuminated. If the memory number selected is prefixed by '+' or '–', the new memory will combine with the one already present in the Preset store.

Gang Loading the Preset Masters

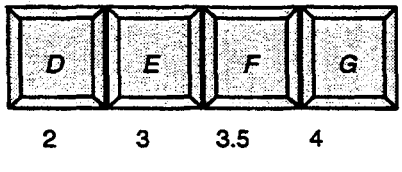
This facility allows a number of Preset Masters to be simultaneously loaded, each with a different memory from a range selected on the memory keypad. Only memories which exist will be used.



The facility is best understood by means of an example:– Memories 2, 3, 3.5, 4 have been recorded and these are to be loaded onto Preset Masters D to G. First, select memories 2 THRU 4 on the MEMORY/MIMIC keypad.

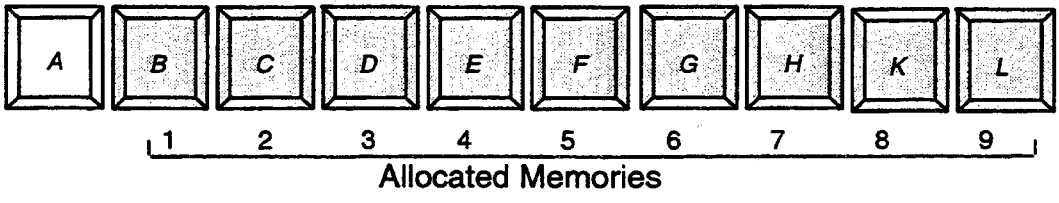


Press the **Preset Master** D MEMORY TRANSFER key.



The memories will be simultaneously loaded, 2 into Preset Master D, 3 into E, 3.5 into F and 4 into G. The first memory in the range is always loaded onto the Preset Master whose MEMORY TRANSFER key is operated. The assigned memories will follow in sequence.

If required, the range of memories may be left open ended, e.g. 1, THRU, MEMORY↓, (B) will assign each of the first 9 memories Preset Masters starting at B. The master to the left of the one selected, will remain unaffected.



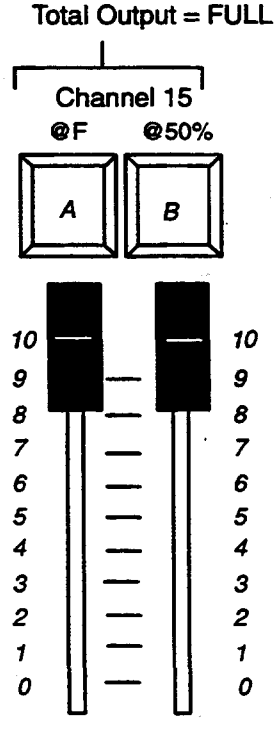
Selecting CLEAR, THRU on the keyboard allows Preset Masters to be simultaneously cleared from left to right when pressing a MEMORY ↓ key.

If Two **Preset Master** panels are fitted, the SYSTEM CONFIGURATION facility on the alpha keyboard can be used to define whether 'Gang Load' will load across both panels or only the panel which initiated the 'Gang Load'.

Preset Mimic Display

The contents of any of the **Preset Master** stores may be displayed on the VDU by means of the momentary action Interrogate buttons labelled (?) below the display windows. If a continuous display is required, the VDU's PRESET mode should be used, the required Preset being selected by means of the green keys. The channel levels shown will be those in the appropriate store, with no account taken of master fader level, etc.

Common Channels

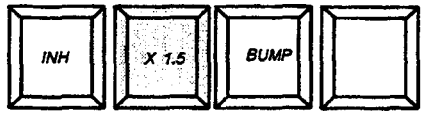


If the same channel is ON in one or more **Preset Master** stores, the level which appears at the system output will be that produced by the highest combination of channel and fader level, i.e. the level is subject to a 'Highest takes Precedence' rule.

e.g. If channel 15 is at full in Preset A and at 50% in Preset B, and both faders are fully raised, the output level of that channel will be Full. If fader A is now lowered, the channel will dim until 50% is reached, then the level produced by Preset B becomes the higher. To reduce the level further, both faders must be lowered.

The combined outputs of the Preset Masters and the Galaxy 'S' store are also subject to the 'Highest takes Precedence' rule.

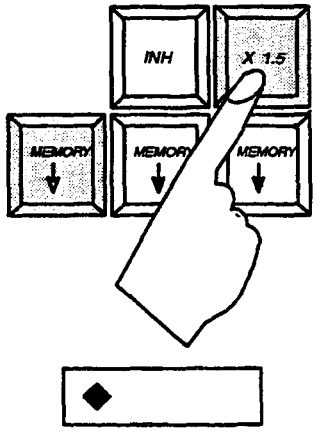
X1.5



Setting a Preset Master to 'x1.5' allows you, temporarily, to increase the output levels of channels assigned to a Preset Master, above the levels which are set in the Preset Master store.

When a Preset Master is at maximum, the only way to increase the levels of the assigned channels is to use the **Channel Control,** selecting all of the channels together and using the wheel to make the adjustment. If the Playback Lighting has not been memorised, this process can take a long time, and may not easily be reversed at a later date. To overcome this problem, the **Preset Master** panel is provided with a 'xl.5' key. This key may be used to convert each Preset Master to the 'x1.5' mode.

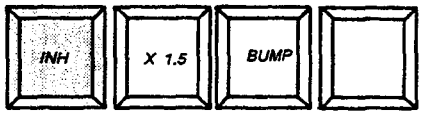
When the 'x1.5' mode is set on a Preset Master, it increases the levels of all the channels controlled by that Preset Master by 50%. Channels above 67% are increased to Full. The Preset Master output is still subject to the setting of the fader and thus an increase in level of less than 50% may easily be obtained.



To set a Preset Master to the 'x1.5' mode, press and hold the <x1.5> key (which will illuminate) and then press the MEMORY ↓ key on the relevant Preset Master. The Master may be converted while a memory is contained in the master.

When x'1.5' is active, a "diamond" indicator is placed in the Preset Master display window to indicate that it is in the x1.5 mode.

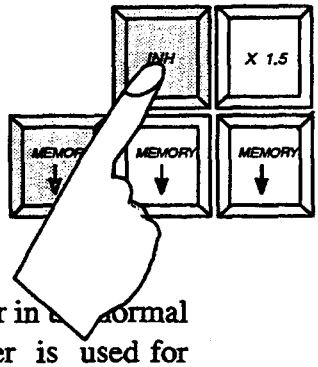
To reset the Preset Master to normal position, press and hold the <x1.5> key again and press the relevant MEMORY ↓ key. The diamond indicator will disappear.

INHibit 

A preset master set to INHIBIT mode operates in a similar manner to a master fader (as on the Memory/Mimic panel), but only over selected channels. Channels are 'selected' by being set ON, at any level, in the Preset Master store – either from a **Channel Control** or by loading a memory.

This facility may be useful for giving Master Fader control over a particular group of lighting channels (eg. Front of House lighting), or for temporarily limiting the levels of a particular group of channels.

.To set a Preset Master to the INHibit Mode, press and hold the <INH> key then press the MEMORY ↓ for the required Preset Master. A 'vertical bar' character will be displayed in the Preset Master display window, in addition to the memory number, to indicate that it is in INHibit mode.



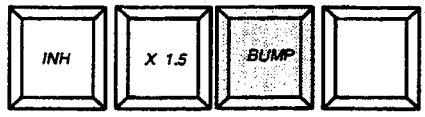
To reset the Preset Master to normal operation, press and hold the <INH> key then press the MEMORY ↓ key above the Preset Master. The bar in the Preset Master window will disappear.

Memories should be loaded into an INHibit Preset master in a normal manner. However, each channel ON in the Preset Master is used for inhibiting regardless of its recorded level.

If the Inhibited Preset Master is at 0 ; or the Preset Grand Master is at 0; or the Preset Blackout Switch is OFF then ALL channels in the Preset Master will be OFF regardless of their level in the rest of the system.

It is possible to 'invert' the operation of Preset master faders being used in INHibit mode i.e change fader operation so that as the fader is raised, channel levels are lowered. This setting is controlled from the SYSTEM CONFIGURATION facility on the alpha keyboard.

BUMP



When pressed the BUMP key illuminates and becomes active. If pressed again it will extinguish and de–activate.

When BUMP is active the MEMORY↓ keys do not load new information from memory, instead they cause all channels in the corresponding Preset Master to jump up to their stored levels. (or to 150% of their stored levels if x1.5 is set). Releasing the BUMP key will reset channels to their previous levels.

When two Preset Master panels are fitted, the Bump key illumination only covers its own panel. This permits the operator to have one panel as "Bump" and one as normal.

The Preset Grand Master Fader

The combined output of the ten Preset Masters may be reduced proportionally to zero by means of the Grand Master fader on the right of the panel. If an instant blackout is required, the Blackout switch at the top of the panel may be used.

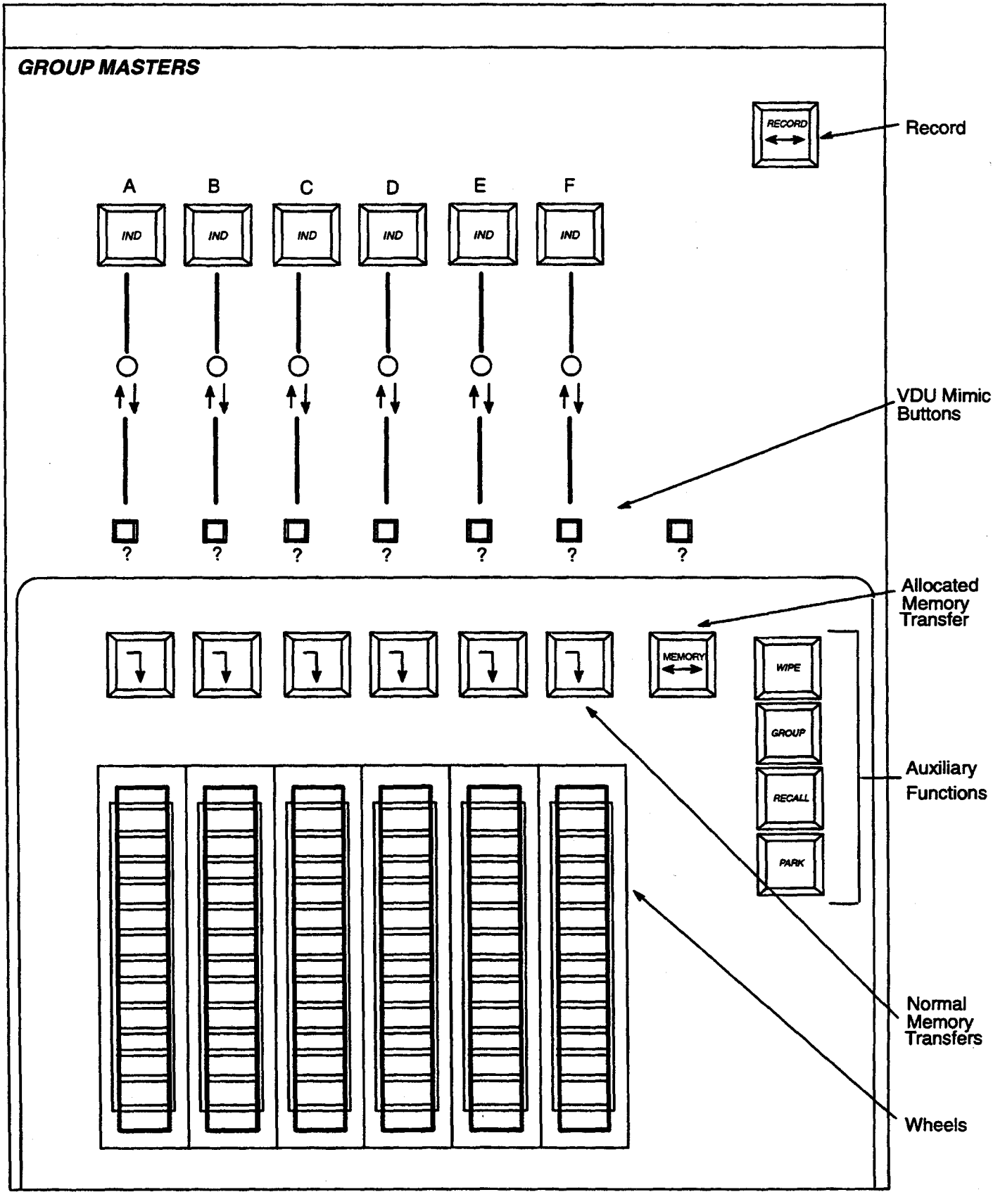
If Two Preset Master panels are fitted, the operation of the Grand Master fader on each panel may be set using the SYSTEM CONFIGURATION facility on the alpha keyboard.

OPTIONS

- Each panel mastered by its own fader (default setting)
- Both panels mastered by the A – L master fader
- Both panels mastered by the M – V master fader
- Both master faders master both panels on a 'Lowest Takes Precedence' basis

8. Group Masters Panel (option)

Fig. 8.1 Group Masters Panel



Introduction

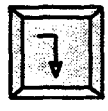
The **Group Masters** panel has six fader wheels and is operated in conjunction with a particular **Channel Control**. The Galaxy system may have up to four of these panels fitted, but only one with each **Channel Control.**

Group Masters act as a device for mixing groups during rehearsal or for manually replaying multi–part fades.

During rehearsal this panel may be regarded as an expansion of a **Channel Control** providing an additional six fader wheels. Channels are called–up individually or in groups on the **Channel Control** keypad then transferred to one of the Group Masters. This then frees the **Channel Control** to select the channels for a second group and so on. Up to six groups may be selected and simultaneously balanced in this way.

The Group Masters always operate live into the S store of the system, Like the **Channel Control**, each Group Master may carry–out Move–fades or Group/Shaft fades.

The **Group Master** panel allows the allocation of channels to masters and their respective levels to be recorded as special allocation memories. These may subsequently be replayed into the Group Masters allowing manual control of complex multi–part fades.

Transfer 

Pressing a TRANSFER key causes the lighting currently selected on the associated **Channel Control** to come under control of the adjacent Group Master wheel. These circuits are added to any circuits which may have previously been under control of the Group Master. It is also possible to transfer a Group, Movefade or a Crossfade to a Group Master.

> **Note:**––When a fade is transferred, the fade action on the Group Master is reset. When this occurs, if a Move–fade is combined with a Move–fade already transferred and in progress, all channels will reach their recorded destination levels, together, with approximately one sweep of the wheel.

Move–fades and groups may be transferred to the same fader wheel, but will combine as a group fade. Only a combination of Move–fades or a Crossfade will remain as a proportional fade after transfer.

The TRANSFER key illuminates when a successful transfer is completed. An attempt to transfer from a **Channel Control** which is operating in PRESET or INDEPENDENT mode or has no channels selected, will cause the warning to 'bleep' momentarily, to indicate an operating error.

If a Crossfade is transferred, this will cancel all other Group Master/Channel/Group fade allocations.

○
↑↓ An LED indicator above each wheel illuminates when a Move–fade or Crossfade is set on a Group Master.

Auxiliary Functions of the Transfer key

To reduce the number of keys on the **Group Master** panel and hence simplify operation, the function of the TRANSFER keys may be changed to carry–out one of four effects on the associated Group Master. These effects are carried out by pressing one of the four keys on the right of the panel as follows:–

1) WIPE 

Pressing a TRANSFER key after wipe has been pressed, causes all channels under control of the Group Master to be turned OFF and parked so that the master is cleared.

2) GROUP 

When pressed before a TRANSFER key, Move–fades under control of a Group Master will change to group fades. The recorded destination levels are ignored and the fade ceases to be proportional, allowing the channels under control to fade up or down until one by one they reach full or zero. The differences are restored if the fader wheel is backed off again. Once a fade has been converted from a move to a group it cannot be changed back again. The Move–fade LED for this master is extinguished on conversion to group.

3) RECALL 

This key, when pressed before a TRANSFER, causes the transfer to recall all the channels which were once controlled by this Group Master (but subsequently taken by other controllers) back to the control of this fader wheel. All channels that were transferred to this wheel since the control was last Wiped or Parked are recollected. If the Group Master is controlling a Move–fade, this is converted to a group–fade when the Recall takes place.

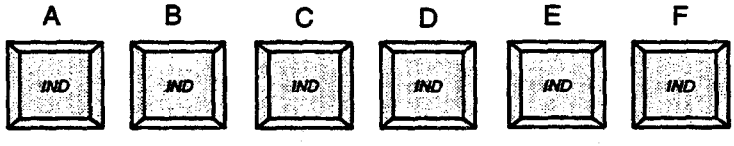
The channels which will be recollected to each Group Master may be previewed by use of the momentary action Mimic button above the TRANSFER keys. If one of these is pressed while the RECALL key is illuminated the VDU will show the channels currently under the control of the associated Group Master, plus those which will be recollected when the TRANSFER key is operated. i.e. The Group Master contents which will result from a recall action.

4) PARK

Prefixing a TRANSFER with PARK causes the channels currently under control of the Group Master to be cleared from the appropriate fade controller. Their levels remain unchanged, but the Group Master is then free to control another group of channels. Park may be regarded in the same way as CLEAR on the **Channel Control** panel.

All four of these mode change keys light when selected and extinguish when a TRANSFER key is pressed. Should the effect be required on more than one Group Master, the appropriate key should be pressed each time to prefix the TRANSFER key. Alternatively, a mode change may be held down while several successive TRANSFER keys are pressed. Be careful not to leave any of the mode change keys illuminated accidentally. A second operation will deselect them.

IND



The function and purpose of these six keys is identical to that on the **Channel Control**. Any Group Master may be made INDEPENDENT, in which case the channels allocated to it will remain under direct control of that wheel and will not be available for control by any other part of the system. Typical applications for the Independent facility include audience lighting, practical circuits, orchestra lights and camera headlights.

Mimic Buttons

Each of the six Group Masters has a small push to interrogate the channels under its control. While held down, the VDU display is changed from the currently selected Mimic, to show only the channels under the control of the particular Group Master. When the button is released the Mimic reverts to its previous display.

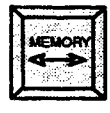
A seventh push is fitted in line with the others and to the right. This gives a display of all of the channels controlled by these six Group Masters, and shows the appropriate Group Master letter, as well as the level, for each channel.

RECORD

The **Group Master** panel RECORD key behaves like any other record key on the Galaxy system, storing data in the memory selected on the **memory** keypad. When pressed, this key records only the channels under the control of the six Group Masters, at their current level. Other channels ON, but not under control of these Group Masters are ignored.

In addition to the level data, the **Group Master** RECORD key also records the fader wheel to which each channel is allocated. This is stored in order that channels may subsequently be re–distributed across the same Group Masters, either for re–balancing or for playing back multi–part manual fades.

Allocation Memory Transfer



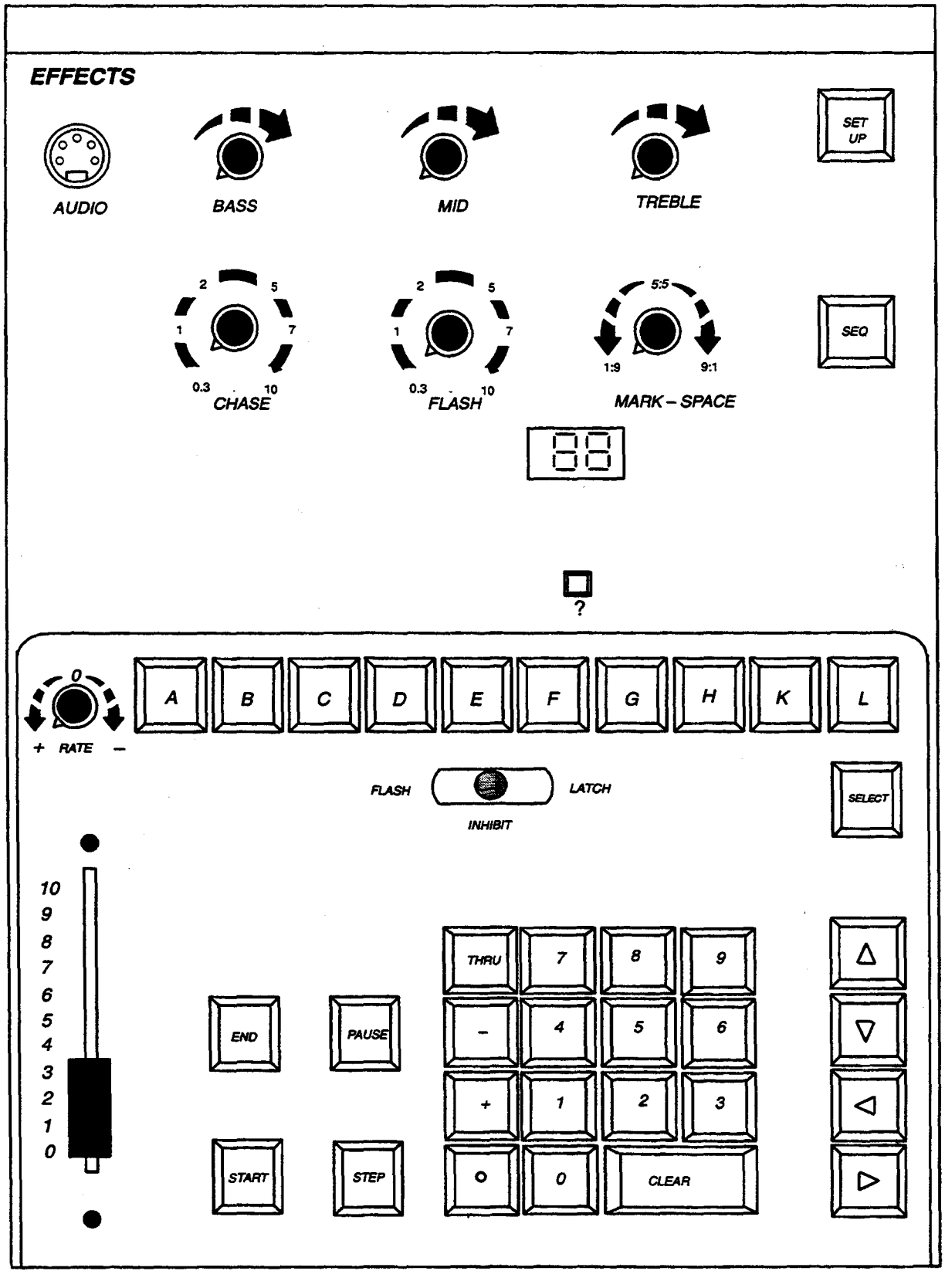
A memory which has been recorded from a Group Masters record key is usually referred to as an 'allocation' memory and is annotated, when interrogated, by the symbol '<–>'. Allocation memories may be treated as normal level memories and transferred to **Playbacks,** in which case the allocation data is ignored. Similarly, they may have recorded links and times added, although this data is irrelevant if the memory is replayed on a **Group Master** panel.

To replay an Allocation memory on a **Group Master** panel, the memory number is selected on the **memory** keypad and the ALLOCATION MEMORY TRANSFER key pressed. Any channels currently under the control of these Group Masters are parked, and the channels in the memory are re–allocated to the Group Masters to which they were assigned when the memory was recorded. The TRANSFER keys which have channels assigned to them illuminate, as do the corresponding Move–fade indicators. One full sweep of each of the **Group Master** wheels will then fade the channels to their recorded levels.

It is not possible to combine Allocation memories on the Group Masters and any Plus or Minus prefix is ignored.

9. Effects Panel

Fig. 9.1 Effects Panel



9. 1. INTRODUCTION

The **Effects** panel allows you to to create and control complex automatic lighting effects. It may be set up to control individual channels and, in conjunction with 10 Preset Master stores, complete memories.

Effects may include instructions to load new memories into the Preset Masters and to synchronise the effect with the start of a fade on a **Playback**. Each Effect may be executed in the following ways:–

- A specific number of times
- Set to run for a defined time
- Continue until stopped, either manually or by the start of a fade on a **Playback**.

Up to 99 separate effects may be recorded and, depending on their size, up to ten different effects may be performed simultaneously.

Effect Type

An effect may be one of six types as follows:–

Chase

A chase is an effect which has a number of steps taking place one after the other; each step has an associated group of lights which are faded to a preset maximum level. As each step occurs, one group of lights is faded down, to be replaced by a new group. A chase may have up to a maximum of 255 steps.

Flash

A flash effect has only two groups of lights, an ON group and an OFF group. When the effect is running, the system will flash between the two groups.

Audio

The Audio effect allows you to set up three groups of lights which are assigned so that their levels are controlled by by the BASS, MID and TREBLE frequencies of an audio input.

Lightning

The Lightning effect causes a single group of lights to flash randomly for a pre–determined period each time a trigger occurs. (To simulate lightning).

Flicker

The flicker effect has eight random flicker generators to which groups of lights may be assigned.

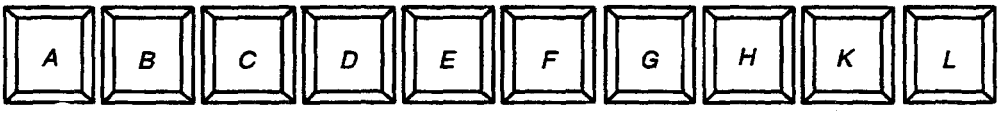
Cycle

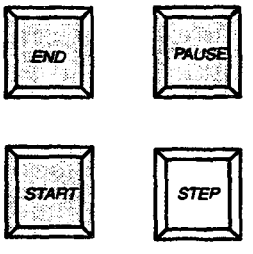
The cycle effect is similar to Chase, but permits separate up and down FADE SLOPES to be set. This permits greater control over the fade between each step and the next than is possible using a CHASE effect.

9. 2. CONTROLS

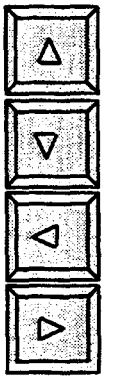
Effects and lighting control numbers are selected and displayed by the numeric keypad and corresponding LED window. The output of the effects system is under the overall control of its own master fader. Other controls are as follows:–

10 keys (A – L) correspond to the ten **Preset Master** panel faders. They are used for selecting Preset Masters when setting up an effect. They can also serve as flash keys.

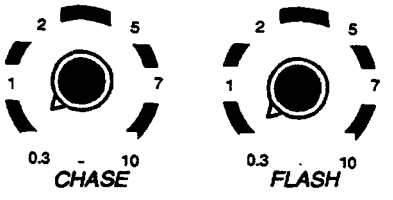




Effects may be started and stopped using the START and END keys, or temporarily halted with a PAUSE key.



4 cursor control keys are used for moving the cursor around on the VDU editing screen.



CHASE and FLASH rate controls for manual control over effect speeds.

BASS, MID, TREBLE for audio level controls.

Once running, an effect may be speeded–up or slowed–down by a RATE control.

SEQ(Sequence) key allows the next effect to be preselected automatically.

The **Effects** panel operates in two modes, NORMAL and SET–UP, controlled by the SET–UP key at the top right of the panel. When in NORMAL mode, effects may be selected on the keypad, and started and stopped as required.

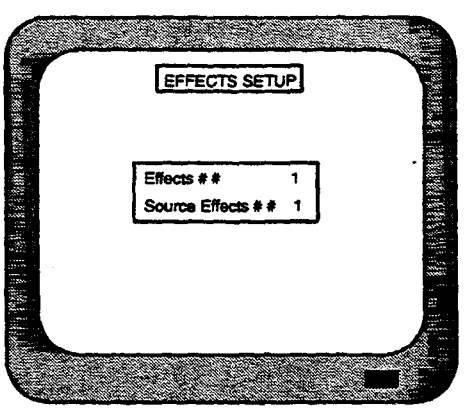
When SETUP is pressed, effects information may be entered and then stored in one of 99 effects memories. The VDU will be set into Effects mode automatically.

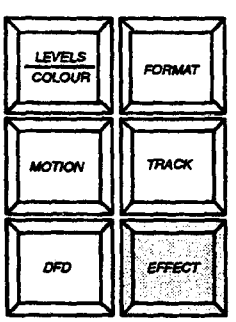
Effects Set–Up Display

This display permits the selection of effects for editing. The Effect numbers displayed will always initially be the same as that shown in the Effects keypad display window.

'Effects # #' is the number of the effect you are going to create or edit.

The 'Source Effects # #' is an effect that may be used as the basis, or root, for creating similar effects with minor variations. After creating the first effect and saving it, subsequent effects may be specified as having the 'Source effect number # # of the original effect number. This greatly speeds up the creation process.





MEMORY MIMIC PANEL

9. 3. PRINCIPLE OF OPERATION

In order to use the various Effects Set–up facilities, you enter information into 'fields' on the VDU. These fields are of two types:–

- Option fields – for choosing between available options
- Data Fields – for entering times, memory numbers etc.

The various fields are selected by moving a 'cursor' around the screen using the four cursor control keys. In Data fields, the ◁ and ▷ keys will repeat if held down for more than about one second, but only within the correctly selected field. The △ and ▽ keys also repeat, but only while in the STEPS/PRESETS section of the display.

The selected field is indicated by being displayed in inverse video and in Data fields the position of the cursor within the field is shown by a coloured block. Information entered into or changed within a field does not take effect until the cursor leaves that field; this is particularly important, as changing certain fields will delete or reset others.

Information is entered into Data fields by using the **Effects** keypad and the A to L keys. Only valid data can be entered, the system alarm will sound either if an invalid entry is attempted or on attempting to leave the field, depending on the nature of the error. Existing data can be changed by over–writing, or clearing by operating the 'CLEAR" key. The ◁ and ▷ keys allow you to move the cursor within the field.

Note:–Effects may be set–up or Edited regardless of the setting of the MEMORY LOCK keyswitch. However, if the keyswitch is in the LOCK position, an error message will appear on the VDU and attempting to record the effect in the memory will sound an Error alarm; you may then cancel the edit or alternatively set the keyswitch to the OPEN position.

The Effects Editor is selected by operating the SET UP key.

The numbers in the 'EFFECT ##' and 'SOURCE EFFECT ##' may be changed if required, as follows:

i) Change the EFFECT number via the keypad on the **Effects** panel, valid effect numbers are 1 to 99.

The new number will be copied to the SOURCE EFFECT number on exit from the field.

ii) Carry out the above and then enter a different number into the SOURCE EFFECT data field, if required.

Press the ▽ key to exit from this data field (two presses required if no entries have been made) and the display will change to a screen similar to that shown in Fig. 9.2

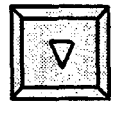
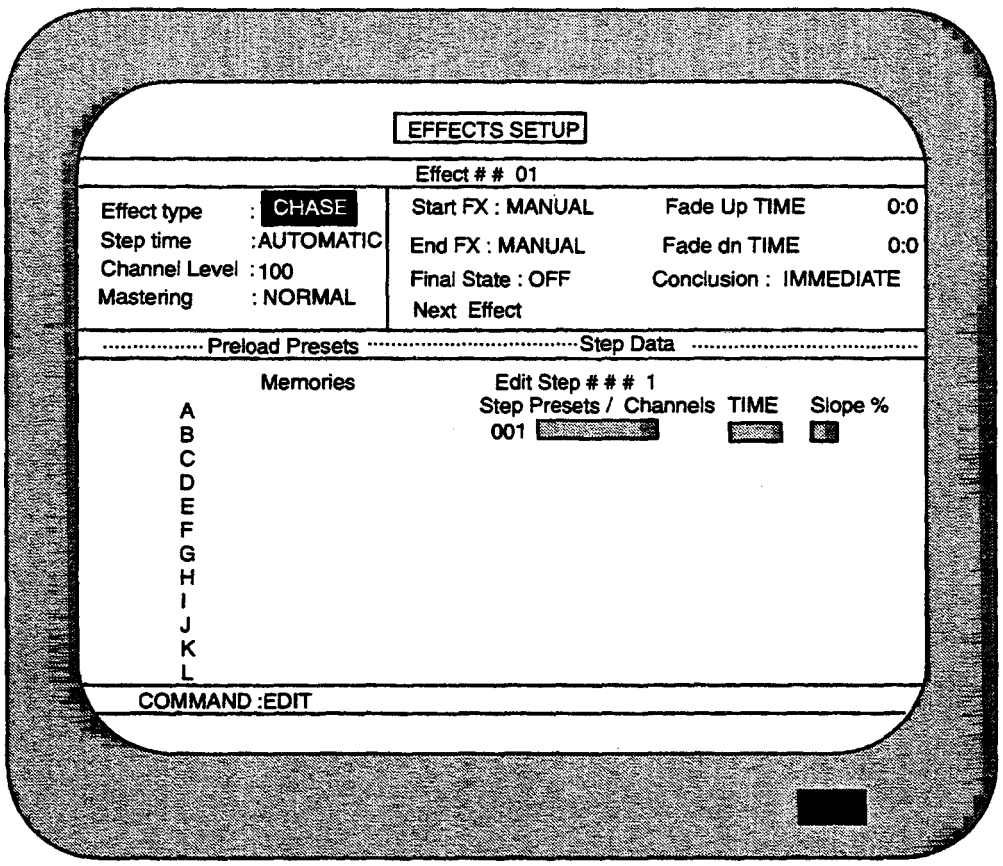


Fig. 9.2 Effects Setup Fields



9. 4. OPTION FIELDS

Pressing the 'SELECT' key will scroll through the various field options whilst the four cursor keys will select the actual field as explained previously. If the SELECT key is operated while a Data field is selected, the system alarm will sound to indicate an error.

Step Time

Fig. 9.3 Effect – Step Type Option Matrix

EFFECT	STEP TIME OPTION: VARIABLE	AUTOMATIC	MANUAL	BEAT	SYNC
CHASE	✓	✓	✓	✓	✓
FLASH	✓	✓	✓	✓	✓
LIGHTNING	✗	✗	✓	✓	✓
CYCLE	✓	✓	✗	✗	✗

Four of the six types of Effect work in 'steps'. The progression from one step to the next is controlled according to one of the step options shown in the STEP TIME OPTION matrix. The control of AUDIO and FLICKER effects are discussed later.

VARIABLE

The step progression is regular, at a rate controlled by the appropriate CHASE, CYCLE or FLASH rotary control. In the case of CHASE and CYCLE effects, fade–up and fade–down slopes may be set in the 'SLOPE %' field, while in the case of FLASH effects, the MARK/SPACE ratio may also be varied, using the MARK SPACE control.

Note:– MARK SPACE refers to the ratio of ON time to OFF time of a FLASH effect.

AUTOMATIC

The step progression is controlled by timing data entered in the STEPS/PRESETS of the display.

Auto–Chase:

For each step of the effect, the time in seconds before the next step occurs may be entered in the 'TIME' field and a fade up/down slope may also be set. The latter is entered in the 'SLOPE %'field as a percentage of the TIME value.

If nothing is entered in the 'TIME' field for the first step, a value of 0.1 seconds is used; for the second and subsequent steps, the value entered for the previous step is copied. Similarly, a value of '0' will appear in the 'SLOPE' field for the first step if nothing is entered and the value copied from the previous step for the second and subsequent steps.

Note:– If an effect with a VARIABLE step time is changed to AUTOMATIC, the settings of the CHASE and RATE controls will be combined to produce a 'TIME' value.

Auto–Flash:

A time in seconds may be set for the complete Flash cycle ('TIME' field) and a Mark–space ratio from 0 to 9 ('M–S RATIO' field).

If nothing is entered into the 'TIME' field, the settings of the FLASH PERIOD and RATE controls will be used. Similarly, the setting of the MARK–SPACE control will appear in the 'M–S RATIO' field if nothing is entered.

Auto–Cycle:

Cycle is similar to Chase, but has two 'SLOPE %' fields, 'UP' and 'DN'.

MANUAL

The progression of the effect must be performed by operating the STEP key. In the case of Lightning, an additional Data field (TIME) appears (in the 'STEPS' section of the display) into which the required flash duration must be entered; the STEP key is then used as a trigger.

BEAT

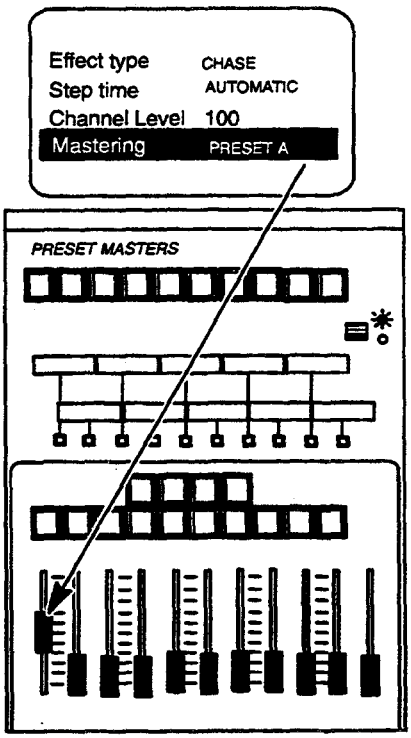
The effect progression is controlled by the Bass frequencies of an audio input. In the case of Lightning, the duration must be entered as described for MANUAL.

SYNC

A Step Rate may be set using the STEP key; the effect will continue at the average step rate if the key is then held down until the next step has occurred. This may be useful for 'disco' effects, where the same Chase or Flash may be used to match different tempos. In the case of Lightning, the duration period must be entered as described in MANUAL.

Mastering.

NORMAL – The effects panel Master fader, controls the maximum level of the channels controlled by the effect.

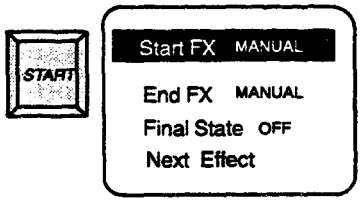


PRESET – permits an effect to be mastered by a fader on the **Preset Master** panel. A further press on any cursor key will highlight another field where a preset master letter is entered using the preset master keys on the **Effects** panel.

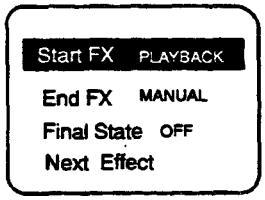
More than one effect may be assigned to be mastered by a **Preset Master** fader. A **Preset Master** fader may also be used to control a lighting state as well, by loading it in the usual manner. This permits a lighting state and Effect to be mastered simultaneously by the one fader. **Preset Masters** M to V (if fitted) cannot be used for mastering effects.

Start Effect.

MANUAL – The effect must always be started using the START key.
PLAYBACK – Start will be synchronised with the recall of a particular memory, either directly to the output or via one of the **Playbacks**.



If PLAYBACK is selected, an additional Data field for the number of the required memory will appear when any cursor key is next pressed. Additionally, the Fade Up TIME field, will be changed to Fade Up AUTO, indicating that the effect level will fade up at the same rate as the memory fade up. The field may be changed back to Fade Up TIME, if required, by moving the cursor to AUTO and pressing the SELECT key.



Note:– If 'PLAYBACK' is selected, the effect will start on recall of the memory concerned regardless of the current selection on the effects keypad; the effect may, however, still be started manually by pressing the START key.

Up to ten effects may in progress at the same time. These will normally all be different, but it it is possible to start the same effect several times resulting in a number of identical effects running simultaneously, but out of phase with each other. This possibility must particularly be borne in mind when editing effects and testing them immediately by using the START key.

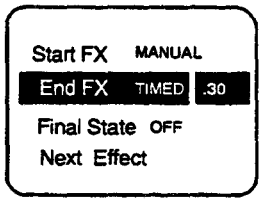
End Effect

This field is similar to the 'START FX' field, but determines what will cause the effect to terminate. The available options are as follows:–

a) MANUAL

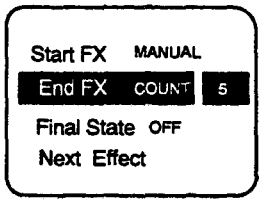
The effect must be terminated by operating the END key.

b) TIMED



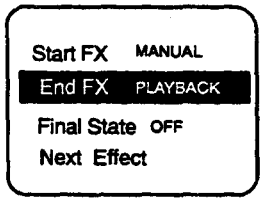
The effect will end automatically when a preset time has elapsed. The time is entered into an additional Data field which appears to the right of the 'END FX' field.

c) COUNT



The effect will end after a number of complete cycles. As in the case of TIMED, an additional Data field appears to allow the number of cycles to be entered.

d) PLAYBACK

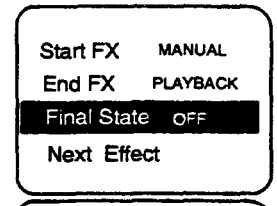


The effect will end when a particular memory is recalled either directly or via any of the **Playbacks.** An additional Data field appears to allow the memory number to be entered. Additionally, the Fade dn TIME field, will be changed to Fade dn AUTO, indicating that the effect level will fade dn at the same rate as the memory fade dn. The field may be changed back to Fade dn TIME, if required, by moving the cursor to AUTO and pressing the SELECT key.

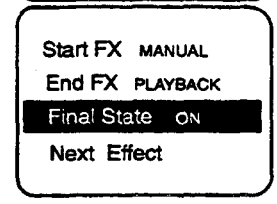
Note:– If 'TIMED', 'COUNT' or 'PLAYBACK' is selected, the effect may still be terminated manually by pressing the END key.

Final State

This determines how ending an effect sets light levels.
OFF – When the effect is terminated, all involved lighting will turn off.

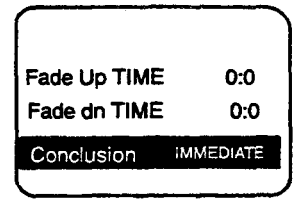


ON – The lights will remain in their finishing states, whatever these may be.

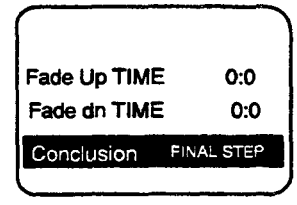


Conclusion

This determines at what point ending an effect becomes active.
IMMEDIATE – The effect will start to fade out immediately and stop at the end of the FADE DN time.



FINAL STEP – When the effect is ended it will continue to run to the highest numbered step, then stop, and begin its FADE DN time.



9. 5. DATA FIELDS

Entering Times

Some data fields require the entry of time; this is done in a similar way to Wait times on the **Advanced Playback** panel. Any time between 0 and 99 minutes 59.9 seconds may be entered as follows:–

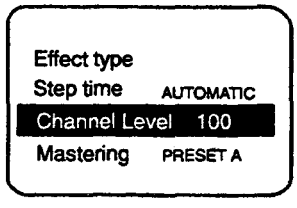
1.) Times up to 99 seconds may be entered as two digits; e.g. for a time of 45 seconds enter '4', '5'. On leaving the data field, this will be automatically converted to minutes and seconds if appropriate. If tenths of seconds are required, these must be separated from seconds by a decimal point; e.g. for a time of 5.7 seconds enter '5' '.' '7'

2.) Times longer than 1 minute may be entered as three or four digits; e.g. for a time of 5 minutes 30 seconds enter '5', '3', '0'. If the number of seconds is greater than 59, these will be converted to minutes and seconds as before. As in the case of seconds, tenths of seconds may be entered following a decimal point.

If a time greater than 99 minutes 59.9 seconds is entered the message **'FIELD ERROR'** will appear at the bottom of the effects display (on the same line as the 'COMMAND' field) and the system alarm will sound.

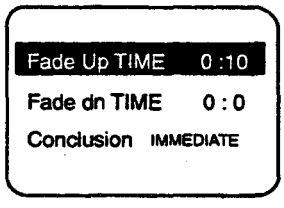
The On/Off contactor which controls the mains feed to the electronics crate power supplies and to the Galaxy peripherals may be actuated remotely by this keyswitch.

Channel Level



This Data field allows you to set a nominal level between 0 and 100 (Full) for all individual channels taking part in the effect. Channels assigned via the Preset Masters will be unaffected. The default value is 100.

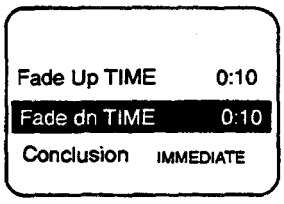
Fade Up Time



The 'FADE UP TIME' is the time taken from the start of the effect for the lights in the effect to fade from zero to full; in the case of individual channels, this time will be proportionally reduced if a level less than 100 has been set in the 'CHANNEL LEVEL' field. The time is entered as described at the beginning of the section.

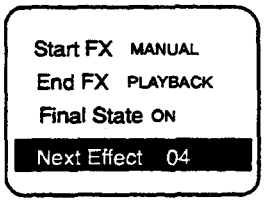
Fade Down Time

The 'FADE DN TIME' is the time taken from the end of the effect for the lights in the effect to fade from full to zero. (FADE DN TIME has no purpose if the FINAL STATE is set to ON and therefore disappears from the display).



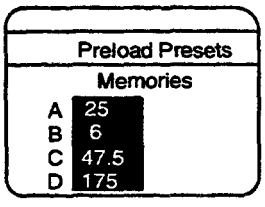
Next Effect

The 'NEXT EFFECT' Data field allows you to 'chain' effects together, the effect whose number is displayed in the field will start automatically as the current one ends. The facility is inoperative if there is no 'NEXT EFFECT' number or if the END key is used to terminate all effects simultaneously.



Preload Presets

If required, pre–selected memories may be automatically loaded into the ten Preset stores at the start of an effect. The numbers of the memories required are entered into the ten Data fields (A to L) in the 'PRELOAD PRESETS' section of the effects display.



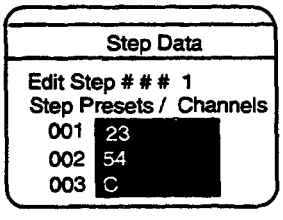
Unlike the normal method of recalling memories to the Preset Masters, Effects Preload does not include the Gang–loading facility. If a range of memories is entered using the THRU key, a 'FIELD ERROR' message will appear and the system alarm will sound on attempting to leave the field concerned. However, + and – may be used to specify a combination of memories to be loaded into a Preset store.

If the 'PRELOAD PRESETS' field is left blank, the contents of the preset store will be left unchanged.

If a number of memories is to be combined for Pre–load and the available space is exceeded, the field concerned will 'scroll' sideways to allow the entry to continue.

Presets/Channels

These are the Data Fields into which the channel groups for each step in the effect are entered. The information may consist of combinations of channel numbers and the presets A to L.



Using a Preset store rather than individual channels gives added flexibility, as the channels concerned may each be set to a different level in the preset store. Where individual channels are used, a maximum level may be set, but this will be the same for all channels used in this effect.

If a group is prefixed with '+' or '–', the Preset stores and channels concerned will be added or subtracted from the group assigned to the previous step.

The THRU key may not be used when producing groups of Preset stores; if this is done, the error alarm will sound on attempting to leave the field concerned.

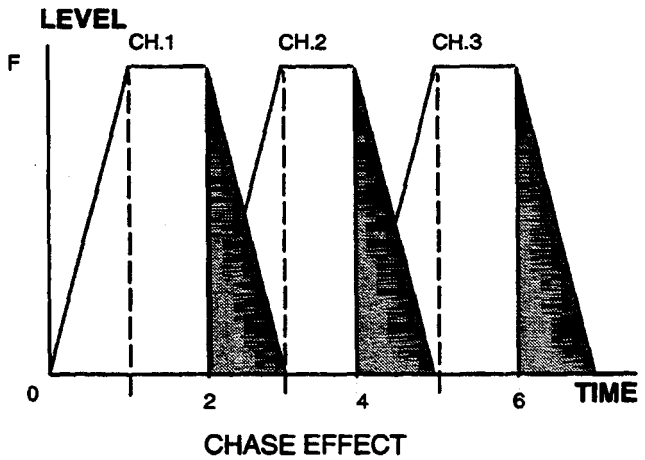
If complex combinations of Preset stores and channels are entered, the Effects Editor will rationalise the display to avoid confusion; for instance, entering '1 THRU 10 – 6' will result in the display **'1>10–6'**, but on leaving the field, the display will change to **'1>5+7>10'**.

Slope

The SLOPE parameter dictates how long a step takes to reach maximum and also how long it takes to return to zero. This is expressed in terms of a percentage of the slope time. SLOPE applies to both CHASE and CYCLE effect types, the CYCLE type having seperate SLOPE UP and SLOPE DOWN parameters.

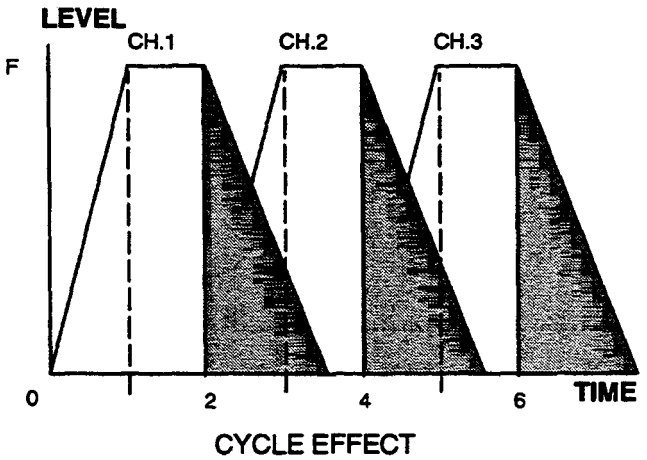
Fig. 9.4 Slope Graphs

Step Presets /	Channels	TIME	Slope%
001	01	2.0	50
002	02	2.0	50
003	03	2.0	50



CHASE EFFECT

Step Presets /	Channels	TIME	Slope% UP	DN
001	01	2.0	50	75
002	02	2.0	50	75
003	03	2.0	50	75



CYCLE EFFECT

9. 6. LEAVING THE EDITOR

There are three ways of leaving the Effects Editor.

1.) Use the ∇ key to move the cursor to the bottom of the display and into the 'COMMAND' Option field. This field has three options, EDIT, RECORD and QUIT.

EDIT (default setting) allows you to continue editing the currently selected effect.
The Δ key will move the cursor back into the EDIT display.
The other keys will change the display to 'EFFECTS SET UP' if pressed

RECORD causes the effect to be recorded in the memory.
The Δ key will move the cursor back into the EDIT display.
The other keys will change the display to 'EFFECTS SET UP' if pressed

QUIT allows you to exit from the editor without recording the effect.
Any cursor key, when pressed, will change the display to EFFECTS SETUP.

2.) Press the SET–UP key. This can only be done if the contents of the currently selected field are valid. If the option currently displayed in the 'COMMAND' field is EDIT or RECORD, the effect will be recorded into memory. The mimic display will revert to that selected prior to the effects edit.

3.) Press the 'START' key. This will have the same effect as pressing 'SET–UP' followed by 'START'.

Note:– If an effect that is currently running is edited and saved (recorded) the changes in the effect will not be seen until the effect is 'ENDed' and then re–STARTed.

9. 7. SEQUENCE

The 'SEQ' key on the **Effects** panel operates in a similar way to those on the **Playbacks.** The key is a toggle action type, illuminating when SEQUENCE mode is selected.

When the SEQ key is illuminated, starting an effect (whether manually, using the START key, or via recalling a memory), will cause the next recorded effect to be selected automatically. Its number will be displayed in the window above the effects keypad. The number displayed will always be the effect which has the next higher number relative to the one just started. If you start with the effect that has the highest number, the sequence will start again at the beginning.

9. 8. AUDIO CONTROLS


AUDIO


BASS


MID


TREBLE

An audio input should be connected to the input connector on the panel. This input may be mono, or stereo, and should be of 'line' level (maximum signal 5V peak to peak). The two channels of a stereo input will be mixed together.

The three controls set the levels respectively of the lighting in an Audio effect assigned to the BASS, MID, and TREBLE frequencies of the audio input. The optimum settings of these controls will tend to vary according to the nature of the audio input.

9. 9. MANUAL OVERRIDE

In addition to the various manual control options which may be selected when an effect is setup there are six ways in which effects already in progress may be controlled:–

1.) The effect selected on the keypad may be stopped by operating the END key. Any NEXT EFFECT will then start automatically.

2.) All effects may be stopped by pressing CLEAR and then END. In this case, any NEXT EFFECT instructions will be ignored.

3.) The effect selected on the keypad may be suspended by operating the PAUSE key; the key will illuminate to show that the effect is Paused. A second operation of the key will restart the selected effect.

4.) All effects may be suspended by clearing the keypad display and pressing PAUSE; any effects which are already paused will be unaffected. With no effect selected, the PAUSE key will only illuminate if there were any effects running.

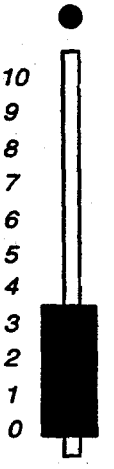
5.) The maximum intensity of the channels taking part in the effects may be adjusted by means of the Effects Master fader, except those effects assigned to Preset faders.

6.) The effects may be speeded up or slowed down by means of the RATE control. The associated indicator is coloured green if the speed is as programmed, but red if it has changed.

Note that 5 and 6 above will affect all effects which are in progress. Adjustments can only be made to individual effects if they have been programmed to allow this.

In addition to the above, any effect, even if programmed to start automatically on recall of a memory, may be started by selecting its number on the Effects keypad and pressing the START key.

9. 10. PRESET MASTER FADER



Once a Preset store has been loaded with a memory, its output can be controlled by both the corresponding fader (subject to the setting of the Preset Grand Master fader) and the Effects system, the two interacting on a highest–takes–precedence basis. For this reason, the Preset Grand Master fader should normally be set to zero when the Effects panel is in use. If required, however, the Preset Grand Master fader may be raised above zero and the Preset Masters faders used to determine a minimum setting for their assigned channels.

Individual channels under effects control are only subject to the Effects Master fader setting and will not be affected by adjustment of the Preset Master or Preset Grand Master faders. Unless the effect is set for Preset Mastering.

9. 11. FLASH MODE SELECTOR SWITCH

In addition to their use when setting up an effect the A to L keys may be used to flash the contents of the Preset stores. A selector switch below these keys allows them to operate in three different ways:–

1) FLASH 

When switched to the FLASH position, pressing a key will flash the channels in the corresponding Preset store to their stored levels (subject to the setting of the effects Master fader).

2) INHIBIT 

In this case, pressing a key will reduce to zero all the channels in the corresponding Preset Master store.

3) LATCH 

When the switch is set to LATCH, the result is similar to FLASH, except that the channels concerned will remain On when the key is released. A second operation will then reverse the process. All the Preset Masters may be unlatched at once by pressing the 'CLEAR' key on the effects keypad.

The above functions are inhibited while setting–up effects.

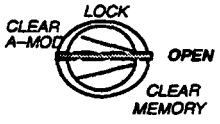
Each Flash key illuminates when operated, and during pre–programmed effects if the appropriate Effects system output is greater than that of the corresponding Preset Master output.

9. 12. DELETING EFFECTS

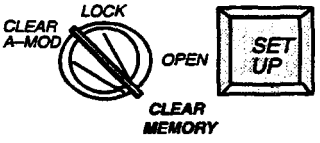
Effects may be deleted by using the following procedure:–

1) Enter the numbers of the effects to be deleted on the **Effects** keypad; the THRU key operates in the same way as that on the **Memory/Mimic** Keypad though it does not illuminate.

2) Insert a key in the LOCK keyswitch on the **Memory/Mimic** panel and turn it 90 degrees clockwise to enable recording (Open).



3) Turn the key a further 45 degrees against the spring to the CLEAR MEMORY position and while holding it there, press the SET–UP key on the **Effects** panel.



The memory used count on the VDU will update as the extra memory becomes free.

9. 13. EXAMPLE EFFECT SETUP

A chase is required to work automatically for 8 groups of lights, each group to remain on for a 2 second period.

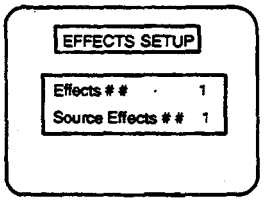
Effect 1– will be a straightforward chase where each light 'snaps' on and off. This will be the SOURCE EFFECT.

Effect 2– will add a SLOPE of 70%

Effect 1

1.) Press SETUP

2.) Enter Effect Number. (*1*)



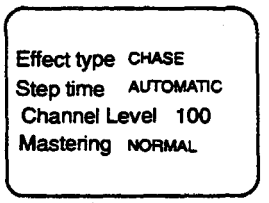
3.) Press ∇ cursor for next screen.
Set parameters as follows:–

4.) EFFECT TYPE – *CHASE*

5.) STEP TIME – *AUTOMATIC*

6.) CHANNEL LEVEL – *100*

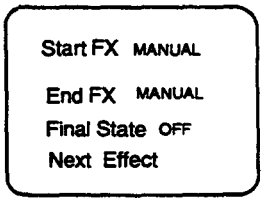
7.) MASTERING – *NORMAL*



8.) START FX– *MANUAL*

9.) END FX – *MANUAL*

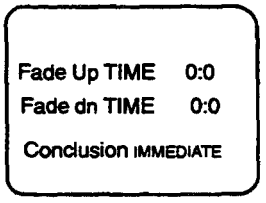
10.) FINAL STATE – OFF



11.) FADE UP TIME – *0*

12.) FADE DN TIME – *0*

13.) CONCLUSION – *IMMEDIATE*



14.) Enter memories (20–28) into PRELOAD PRESETS (A–H)

15.) Enter PRESET A into STEP PRESETS / CHANNELS

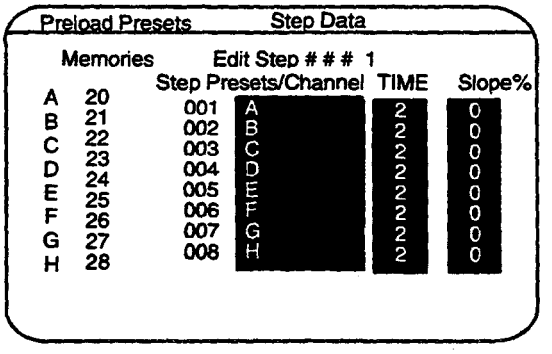
16.) Set TIME to 2

17.) Leave SLOPE at 0

18.) Repeat steps 13–16 for the seven other memories

19.) Press SETUP to record the effect.

20.) Press START to commence the effect and END to finish it. Use the RATE control to speed up or slow down the chase.



Effect 2

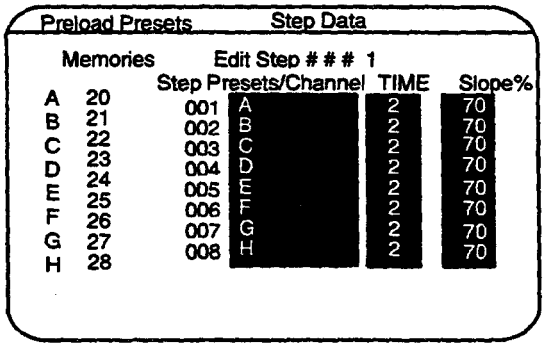
1.) Press SETUP

2.) Enter new number (*2*) in EFFECTS and enter the SOURCE number as (*1*).

3.) The only parameter that needs to be altered is the SLOPE – set to 70% for each step

4.) Press SETUP to record the effect.

5.) Re–run the effect, a distinct crossfade should now occur as opposed to a snap–on, snap–off action.



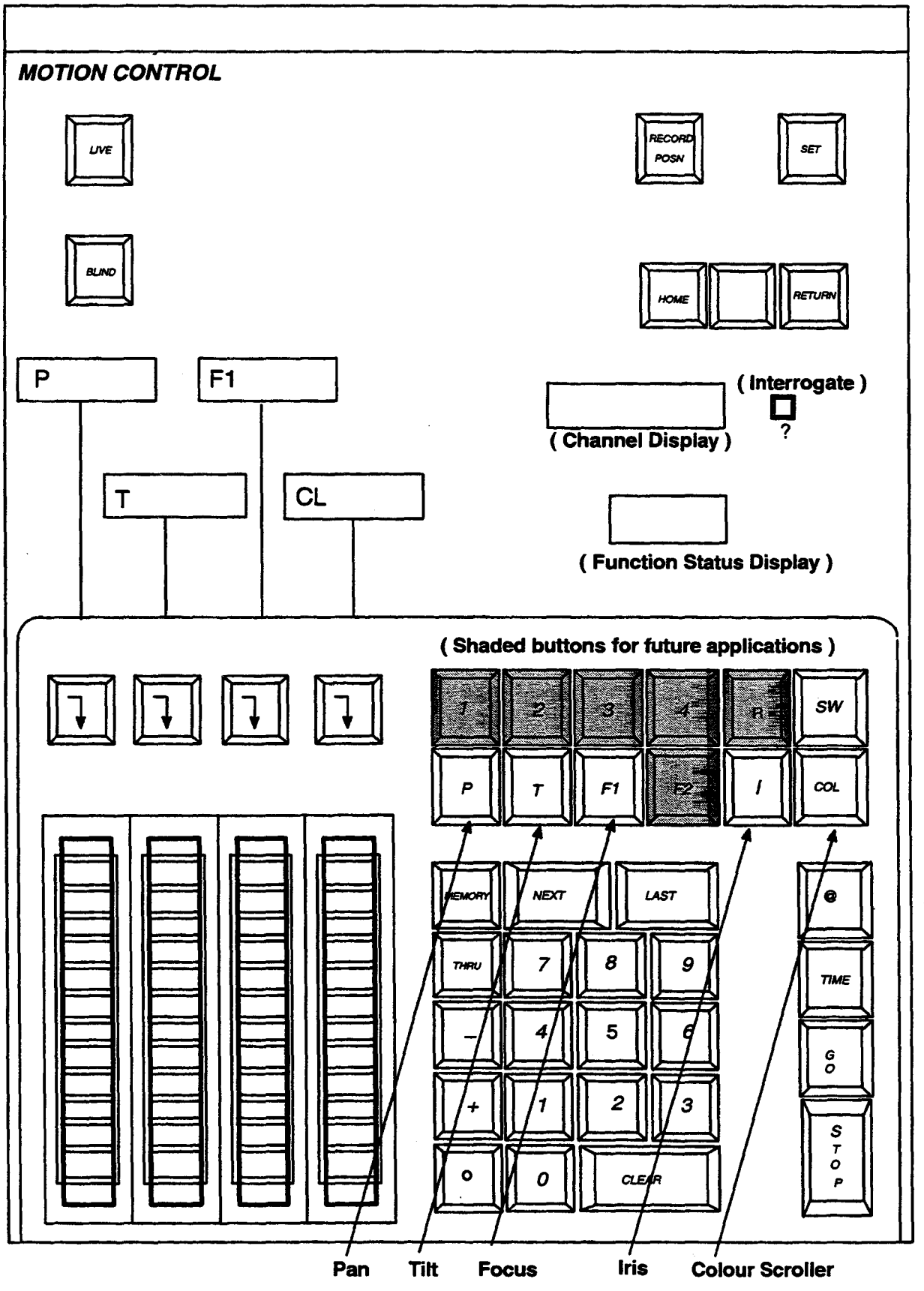
9. 14. PRINTING / SAVING TO DISC

A Printout of the Effects may be obtained by using the PRINT facilities on the Alpha numeric keyboard.

Effects may be copied to and from disc using the DISC CONTROL facilities on the alpha numeric keyboard.

10. Motion Control Panel

Fig. 10.1 Motion Control Panel



10. 1. INTRODUCTION

The **Motion Control** panel gives you the option to control Strand PALS luminaires with or without the appropriate colour scrollers. It can also control Strand COLOURCALL scrollers as long as they are fitted with the correct interface. Before any fixture can be controlled it must be defined on the panel as having a set of motion functions (Pan/Tilt/Focus/Colour etc). This may be done using the SET mode on the panel or from the Alpha–numeric keyboard.

The set–up process will allow you to assign a selected channel number (in the range 1–999) to an appropriate automated fixture, referred to as a unit number.

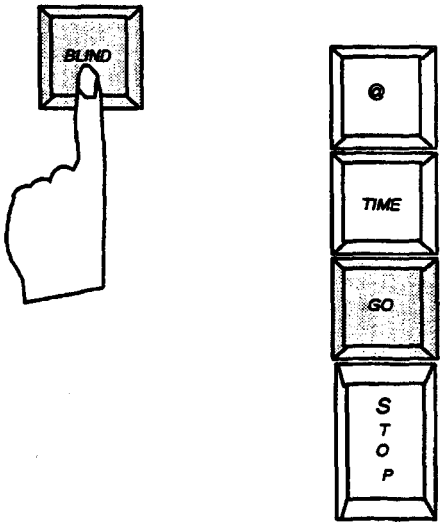
Unit number 000 is assigned as a "phantom" unit. This allows you to disable any fixture, on a temporary basis, should a fault develop thus preventing further movement of the fixture during memory playback.

10. 2. POWER UP/ STOP MODE

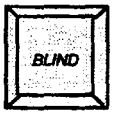
After initial power–up, the **Motion Control** panel remains in a STOP mode. The STOP button on the Panel will be flashing as a warning – depressing this button acknowledges the warning and it will remain illuminated signifying it is still in STOP mode.

Whilst in STOP mode it is not possible to control the position of any units. Any attempt to control Colour Changers on a **Channel Control** panel, or replay memories with recorded motion will result in a message on the VDU –' PALS/CC IN STOP'

To leave STOP mode and be in a mode to set–up or edit, hold down BLIND and press GO. The STOP light will go out. All units will move to their default or HOME positions.



To allow immediate control over luminaires, press LIVE. This will illuminate, and further control actions will be immediately transmitted to the luminaires.



If this key is pressed, it illuminates, and following control actions will be entered into a 'Blind' store, but will not be transmitted to the luminaires. This allows 'Setup' modification and recording of motion memory information, without luminaires actually moving.

Note:– Actions related to unit setup are always LIVE even if BLIND is lit.

10. 3. ASSIGNING CHANNELS TO UNITS

Assigning units

Before assignment can begin, it is important to have a good understanding of your particular units' functions i.e whether they have Pan/Tilt/Focus facilities etc. as there is no point selecting functions on the panel that are non–existent.

The chart below gives a good guide to some of the more common Strand units that can be attached to PALS yokes and also shows their respective functions and default (Home Position) values. A Strand PALS lantern yoke has internally (software) defined limits of motion for the lantern type fitted. This ensures that movement is restricted, where appropriate, for the size of the lantern/yoke combination.

UNIT	PAN	TILT	FOCUS (F1)	IRIS.	COL.	SW
Cadenza Profile	500	150	–	050	000	–
Cadenza P.C	500	360	050	–	000	–
Cantata P.C/F	500	360	050	–	000	–
Cantata Profile	500	150	050	050	000	–
Punchlite 1000	500	150	–	–	000	–
Alto P.C/F	500	360	050	–	000	–
Alto Profile	500	150	–	050	000	–
Optique Profile	500	150	–	050	000	–
Beamlite	500	150	–	–	000	–
Polaris	500	360	050	–	000	–
Castor	500	360	050	–	000	–
Pollux	500	360	050	–	000	–
Pollux Bambino	500	360	050	–	000	–
Arturo	500	–	–	–	000	001

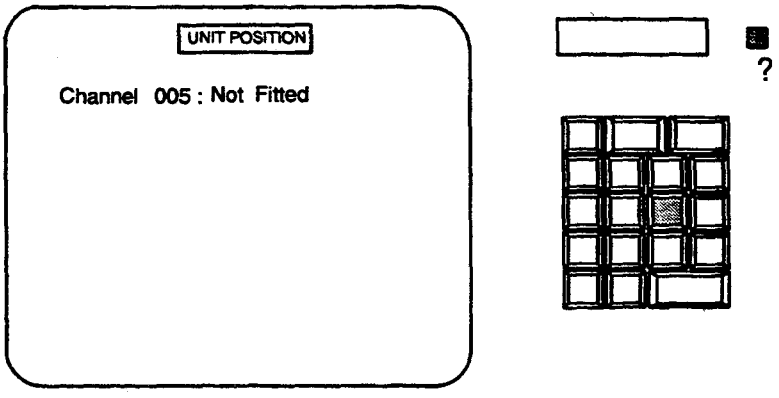
UNIT	B1	B2	B3	B4	COL
Barn Door	000	000	000	000	–
Colourcall (11) MRL					000
Colourcall (16) MRL					000

Note:– User 1 –For Future Expansion
User 2 – For Future Expansion

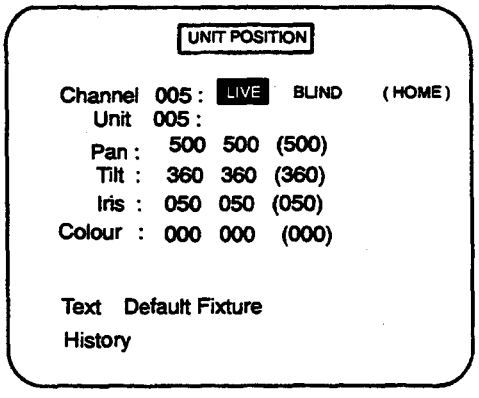
Normally, units are best assigned using the motion facility on the Alpha–Keyboard, as detailed at the end of this section. However, units can be configured from the **Motion Control** panel as demonstrated below.

For the following procedure we shall assume that only CANTATA P.C units have been installed.

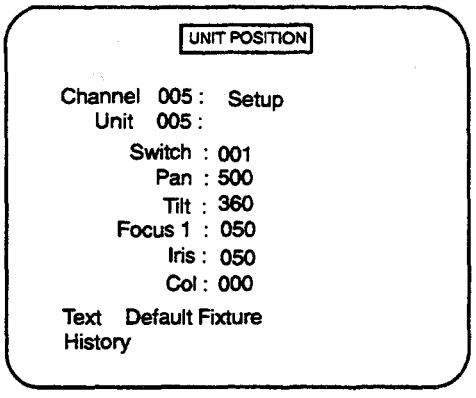
1.) Press interrogate button to view UNIT POSITION screen on the VDU then select an un–assigned channel number, e.g. 5, on the **Motion** panel. The screen appears as below.



An assigned unit to channel 5 would look like:–

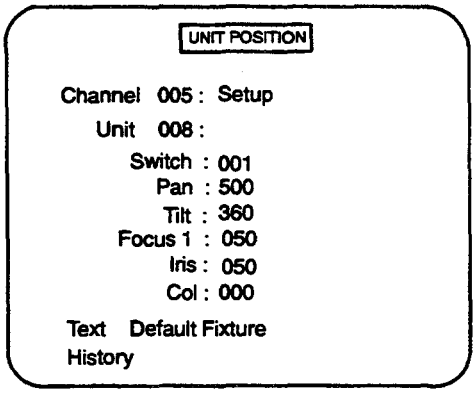


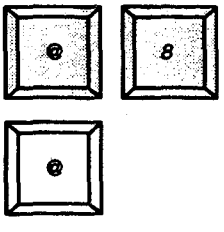
2.) Press SET, Galaxy automatically assigns a unit to the selected channel and the screen will change to that shown below.



Note:– The fixture type will be the same as that last allocated (using the Alpha–Keyboard), or the Default Fixture.

3.) To assign a different numbered unit to this channel, press @ , the new unit number,in this case 8, and then @ again.





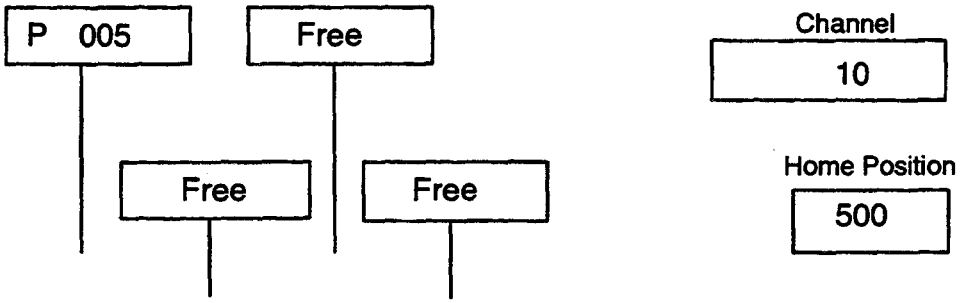
4.) The CANTATA will accept only PAN, TILT, FOCUS and a COLOUR SCROLLER. The iris and Switch functions should be removed. To do this, press the SW key, which will flash; press CLEAR, which will remove the Switch function. Repeat procedure for the Iris function.

Note:– If the unit has been previously configured as a COLOURCALL, the PAN, TILT and FOCUS functions will be missing.

Set–up functions on the panel as follows:–

5.) Press the PAN button, this will flash.

6.) Press the transfer button ↴ to assign the function to a wheel. The appropriate display will confirm this by changing from 'Free' to 'P 005' showing the channel number, (not unit number), alongside the Home Position value as shown below.



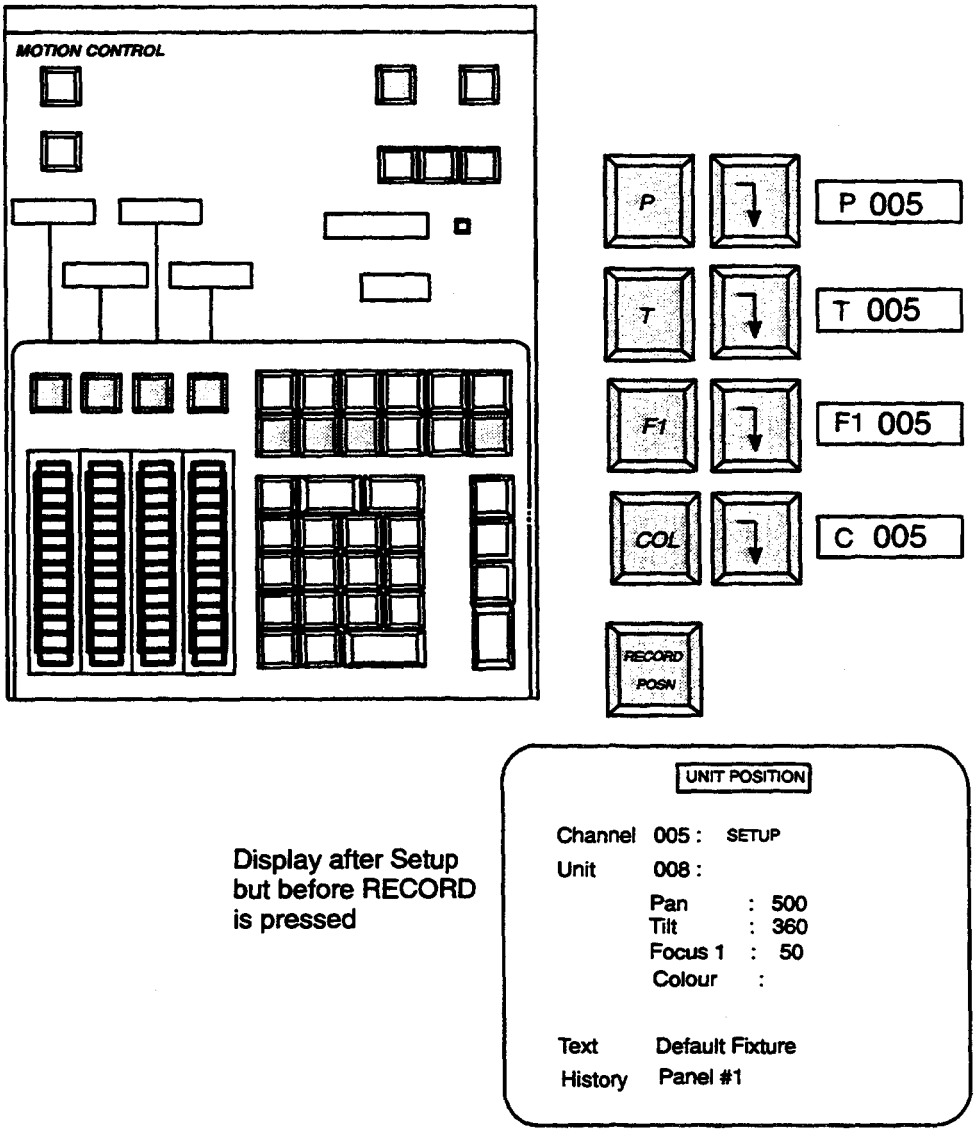
The Home position value can be altered by using the wheel.

This procedure also applies when the Home position needs to be altered for a function already present.

7.) Repeat for all other functions

8.) When all functions have been configured, press RECORD POSN., displays will clear and the transfer displays will return to 'Free'.

Fig. 10.2 Setting Functions on Motion Control Panel



Display after Setup but before RECORD is pressed

The TEXT parameter shows the unit type, but may not be altered from the **Motion** panel

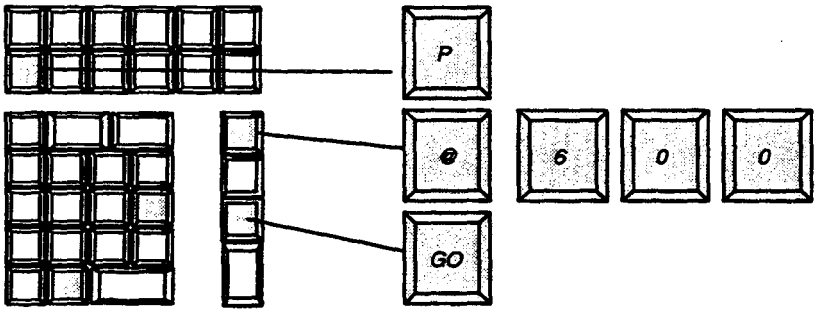
The HISTORY parameter states which panel, if any, last had control of the unit's, functions.

Each time a channel is selected, the keys corresponding to the functions assigned to the unit, will illuminate. Pressing one of the function buttons will cause it to flash and allow the function to be taken under control.

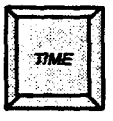
10. 4. TYPES OF CONTROL

Direct Control

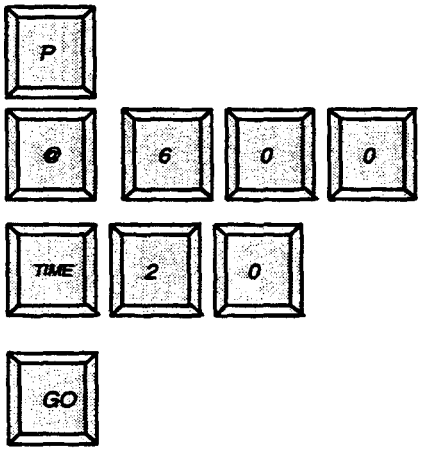
Direct control simply uses "@" and "GO" buttons to input data. If for example you require the PAN to be at 600, all that is required is to press the following:–



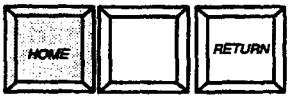
The NEXT and LAST buttons increment any selected function by small steps without the need to press GO.



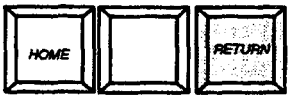
The TIME button will cause an action to occur over a period of time, e.g. the one just mentioned could be made to occur over a 20 sec. period by the following commands:–



Galaxy allows time selection between 0 and 99 seconds; actual response may be limited by the type of automated fixtures that are connected.

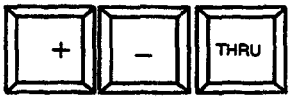


HOME will return the motion function to the HOME position as defined when the unit was configured using SET–UP



RETURN returns the motion function to the last recorded position, i.e. the one existing before "taking control."

Operation of HOME or RETURN with a Unit number and a specific motion selected, (i.e. with the function button flashing) will only action that function. Operation without any functions selected will action ALL motion functions of that unit.

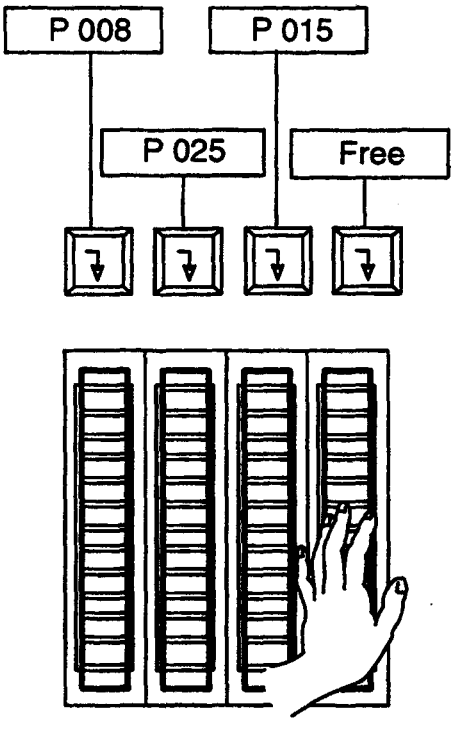


These keys may be used to select 'groups' of motion units for simultaneous control, in exactly the same manner as selecting groups of channels.

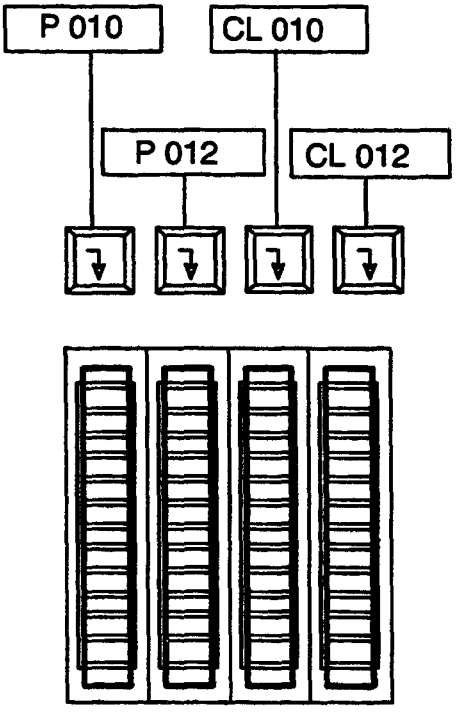
Wheel Control

Control of motion functions via the wheels allows you to make very precise adjustments whilst actually viewing the scene. Any function can be assigned to any wheel on any channel. Once assigned, the wheels remain in control of their designated function even if different channels are selected on the panel for controlling further units. The diagram overleaf shows two cases of this:–

A) Three wheels are assigned to controlling the PAN on units patched to channels 8, 25, and 15. The fourth wheel is 'Free' and can be assigned to any other unit function on a different channel or alternatively to a different function on an existing channel.



B) Here the four wheels are all assigned, Two controlling the PAN on channels 10 and 12 and two controlling the COLOUR SCROLLERS on the same channels.



10. 5. RECORDING

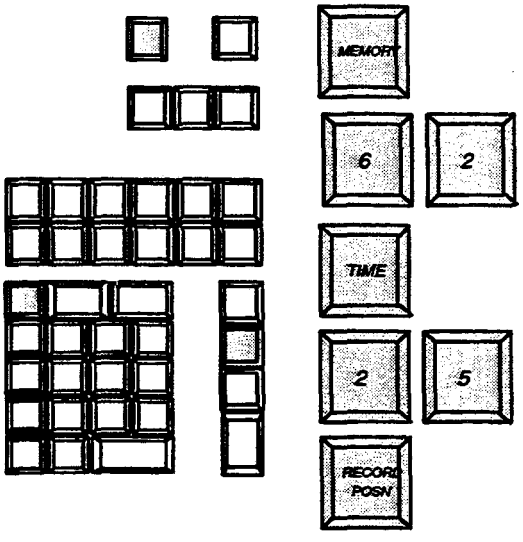
Depending on the setting of the appropriate System Configuration option, Position, Focus and Colour information may be automatically recorded whenever the **Memory/Mimic** panel RECORD Σ button is operated. This ensures that Motion and Colour data are recorded as part of each lighting state.

Use of RECORD Σ to record Motion data will create a Motion "part" in the memory, this uses a default time if no previous memory exists. Any new lighting memory created will be given the fade type MOVE FADE.

MEMORY LIST displays show memories with Motion/Colour data by appending '+' to the memory number. The '+' is only displayed if units are actually recorded to move.

Motion data may be recorded, without channel level information, from the **Motion** panel using the following procedure:–

Example – Record the current motion positions in memory 62 with a time of 25 seconds.



The TIME entry may be omitted, in which case the default motion record time is used, or in the case of an already existing motion memory, the recorded motion time will remain unchanged.

10. 6. PLAYBACK CONTROL

The recall of colours and positions recorded for a lighting state can be controlled from the **Motion** Panel or a **Playback** panel. The difference is that playing back a lighting state on a **Playback** panel also initiates Intensity changes and commencement of Programmable Effects. The **Motion** panel, however, will only playback colour and position changes.

The TIME parameter applies to all units and all functions in the memory being replayed.

Using a Playback Panel

If USE TIME is NOT active, starting a fade (using CROSSFADE, MOVEFADE or DIM FADE) will cause any associated motion movements to occur using the default Motion Playback time.

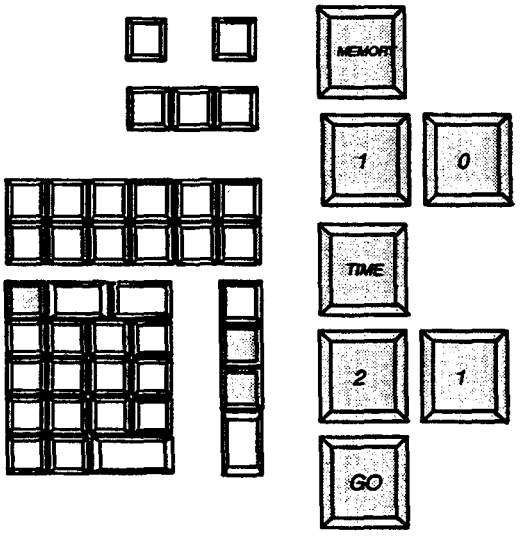
When USE TIME is active, the fade will cause these motion movements to use the recorded Motion time.

If, for any reason, it is necessary to prevent playback operation instigating positional changes, the **Motion** panel STOP button should be set to on. To limit movement of the individual units on a particular channel, the channel may be temporarily patched to unit 000 as mentioned in the **'Introduction'** section.

Using a Motion Panel

A motion memory may be replayed on the **Motion** panel using the following procedure:–

Example – Replay memory 10 in a time of 21 seconds.



If the TIME entry is omitted the memory will be replayed using the default GO time.

If the panel is in BLIND mode, all time information is ignored; the unit positions from the memory are copied instantaneously into the Motion 'Blind' store.

Using an Output Panel

If a Motion memory is selected on the **Memory** panel followed by a transfer to Output, units will move to their recorded positions, in the recorded Motion time.

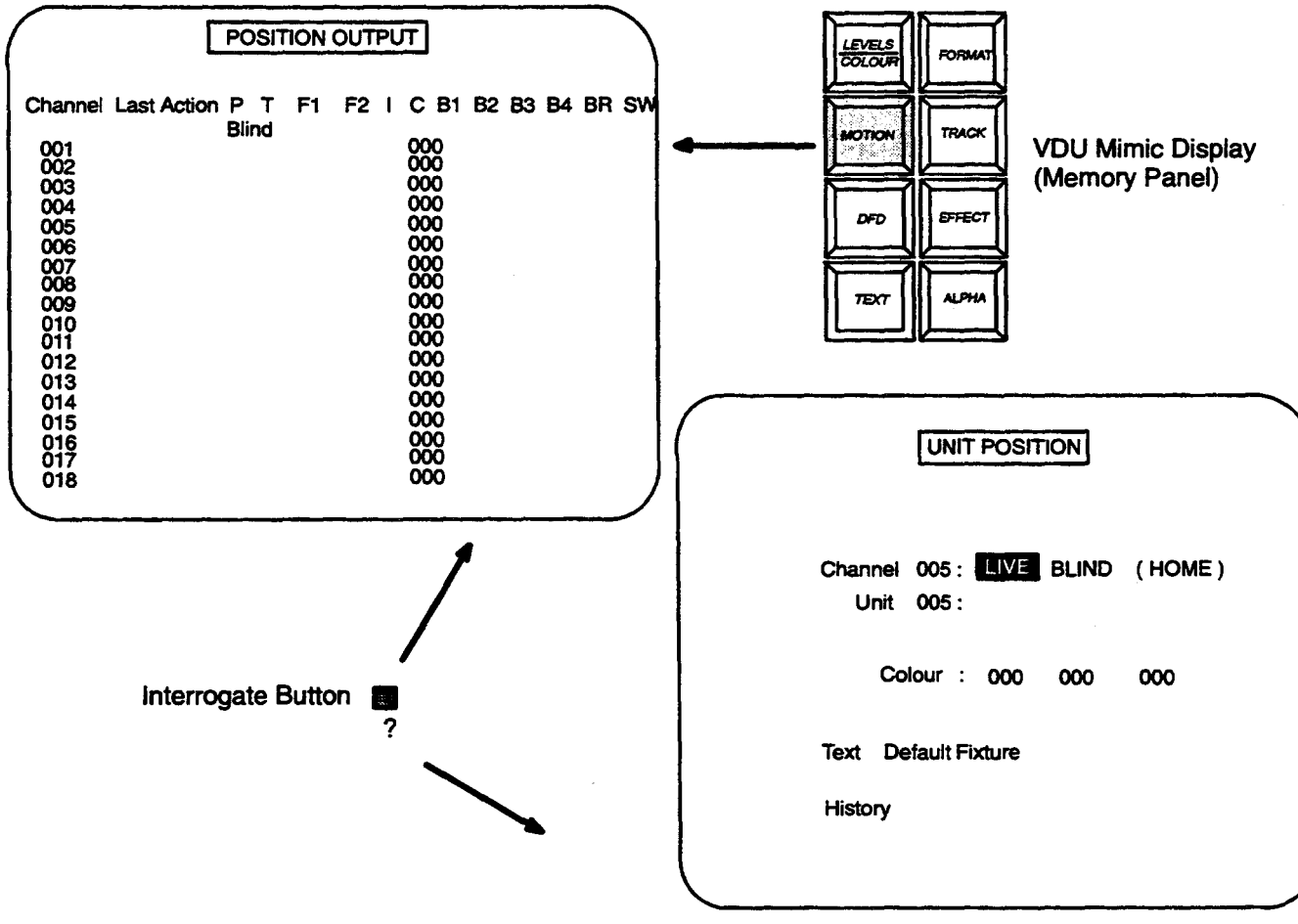
10. 7. SCREEN DISPLAYS

There are two display screens associated with Motion unit positions – UNIT POSITION and POSITION OUTPUT. The UNIT POSITION display, covered in '**Assigning Channels to Units**' section, can always be accessed by pressing the **Motion** panel interrogate button. To access the POSITION OUTPUT display you must select it with the VDU mimic button on the **Memory / Mimic** panel.

Once the display is selected the interrogate button on the **Motion** panel will toggle between the two when pressed.

> **Note:–** The **Motion** panel interrogate button will always toggle between the UNIT POSITION screen and whatever happens to be selected on the VDU mimic.

Fig. 10.3 Selecting Motion Panel Displays



Position Output Display

This gives an overall picture of what units are in use and what their current positions are.

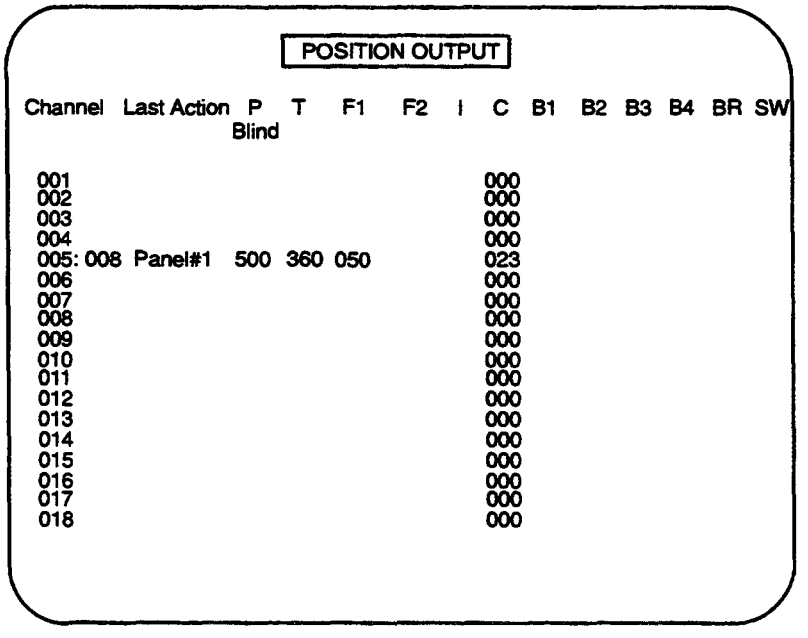
Units appear in channel number order, 18 channels at a time, pressing PAGE on the VDU mimic bank will show further channels. Where a channel is assigned to a different unit address, the address is also shown. e.g. the diagram below shows channel 5 patched to unit 8.

The Last Action field indicates which lighting memories have effected motion changes. The Last Action field also indicates functions and colours that have been modified from a Motion Panel or, in the case of colour, a Channel Control. These two fields relate to the current panel routing of LIVE or BLIND.

The current position for each units' configured functions is shown under the appropriate column headings.

Comparison between current positions and those recorded in memory may be made by switching from LIVE to BLIND, having replayed the memory in BLIND.

Fig. 10.4 Position Output Display

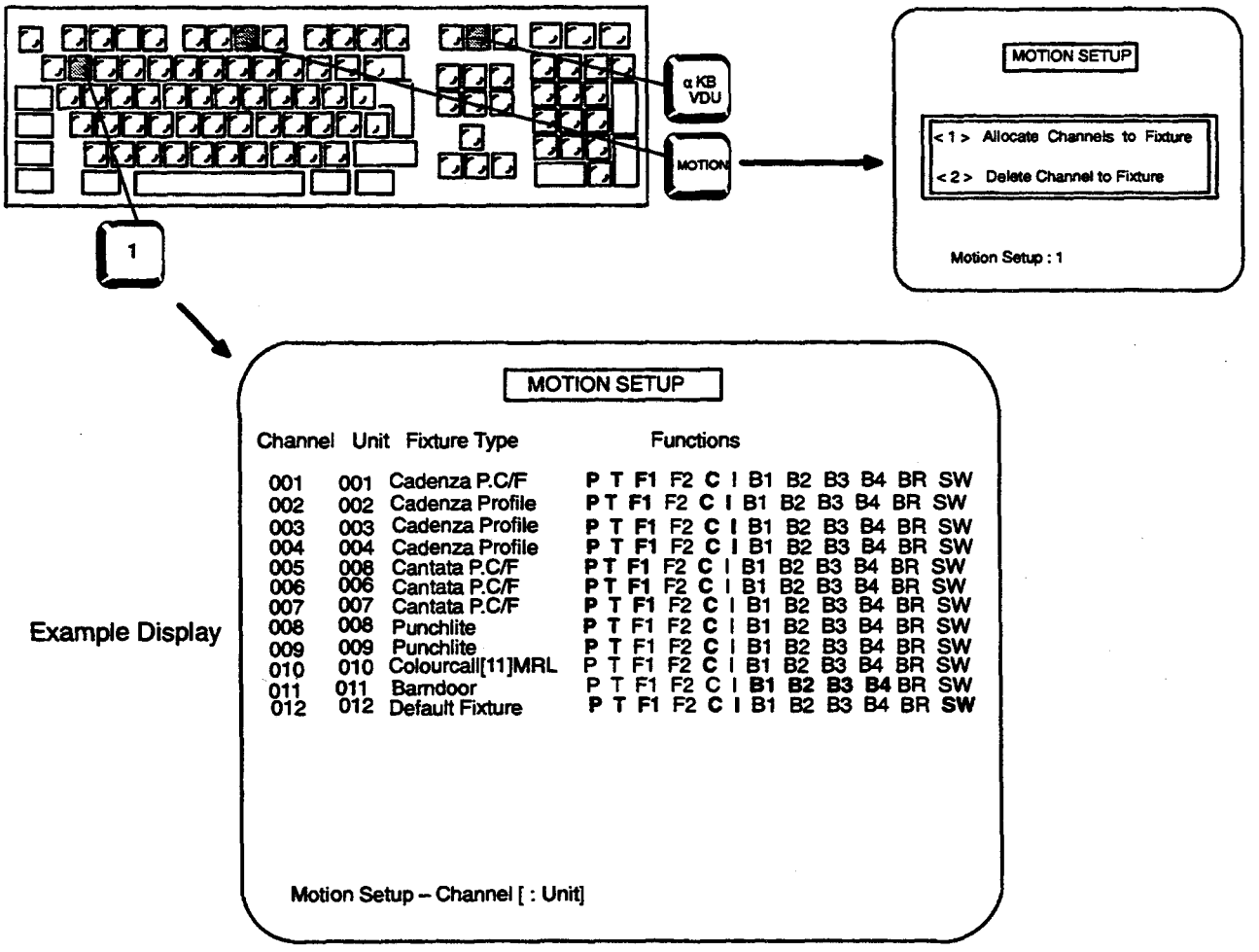


10. 8. MOTION SET–UP FACILITY

This facility is accessed via the alpha–keyboard and will allow you to configure units in a quick and easy manner.

To access the screen press α KB VDU and then MOTION. Two options are now shown, select option < 1 > press ENTER ↵ key.

Fig. 10.5 Motion Setup



Example Display

MOTION SETUP

Channel	Unit	Fixture Type	Functions
001	001	Cadenza P.C/F	P T F1 F2 C I B1 B2 B3 B4 BR SW
002	002	Cadenza Profile	P T F1 F2 C I B1 B2 B3 B4 BR SW
003	003	Cadenza Profile	P T F1 F2 C I B1 B2 B3 B4 BR SW
004	004	Cadenza Profile	P T F1 F2 C I B1 B2 B3 B4 BR SW
005	008	Cantata P.C/F	P T F1 F2 C I B1 B2 B3 B4 BR SW
006	006	Cantata P.C/F	P T F1 F2 C I B1 B2 B3 B4 BR SW
007	007	Cantata P.C/F	P T F1 F2 C I B1 B2 B3 B4 BR SW
008	008	Punchlite	P T F1 F2 C I B1 B2 B3 B4 BR SW
009	009	Punchlite	P T F1 F2 C I B1 B2 B3 B4 BR SW
010	010	Colourcall[11]MRL	P T F1 F2 C I B1 B2 B3 B4 BR SW
011	011	Barndoor	P T F1 F2 C I B1 B2 B3 B4 BR SW
012	012	Default Fixture	P T F1 F2 C I B1 B2 B3 B4 BR SW

Motion Setup – Channel [: Unit]

Editing / Adding Motion channels

1.) Enter the number for the channel to be added on the COMMAND line. If it is desired to patch the channel to a different numbered unit enter a colon (:) and the unit number.

2.) Press ENTER. ↵

The new unit will be added to the displayed list.

The fixture type will be the same as set for any previous entry, or will be shown as 'Default Type'.

3.) The type of fixture may be altered via the **F3/F4** keys. These will step forwards and backwards through the possible types.

4.) Functions can be deselected, or reinstated, by using the TAB key to select the Function and then pressing **F3/F4** to deselect / reinstate.

5.) Press ENTER ↵ to finalise any action.

Note:– It is not possible to add a function to a fixture type which does not support it. e.g. It is not possible to add F1 (focus) to a Puchlite.

Deleting a Motion Channel

1.) Press MOTION key on alpha–keyboard

2.) Select option < 2 >

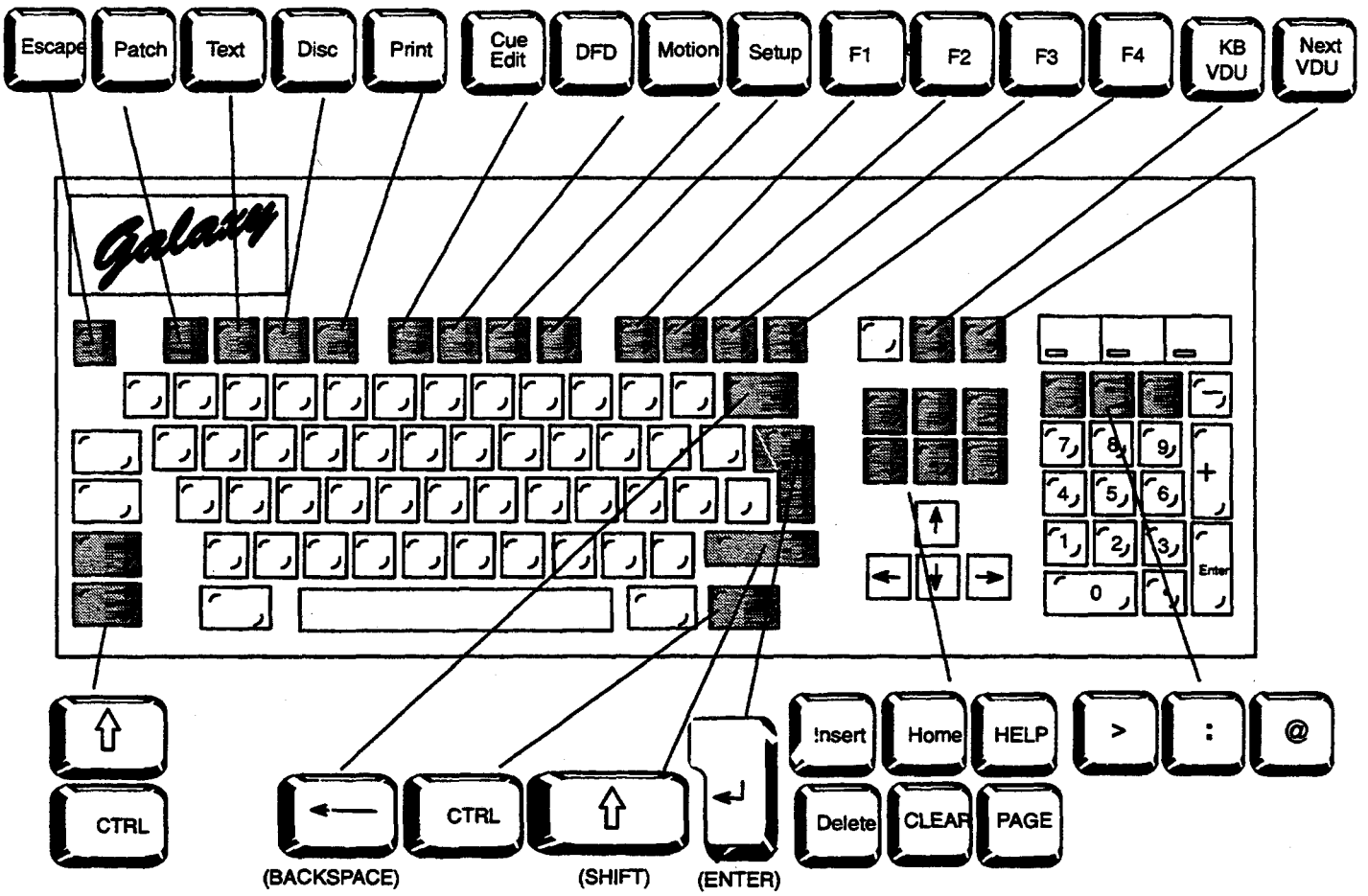
3.) Press ENTER↵

4.) Enter the number of the channel to be deleted on the COMMAND line.

5.) Press ENTER↵

11. Alpha Numeric Keyboard

Fig. 11.1 Alpha – Keyboard



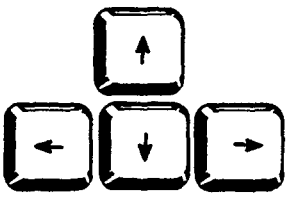
11. 1. HOW TO USE THE KEYBOARD

The Alpha–Numeric keyboard is a unit which provides many extra facilities and allows precise control and customisation of various Galaxy parameters which are not accessible from the main control desk.

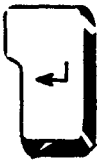
The keyboard operates in a similar manner to a personal computer, but the keys shown as shaded in the diagram above have markings and functions exclusive to Galaxy.

The number keypad on the right of the keyboard has been arranged to ease numerical entries, particularly those for dimmer to channel patching.

The alpha–keyboard is used in conjunction with a series of specific video mimic displays.



These four keys situated on the right of the keyboard are ENTRY and COMMAND keys used to control the position of the screen cursor, they will each move the cursor one space, or line, in the direction indicated by the arrow on the key. If the keys are held down they will 'auto–repeat after a few seconds.



This key along with the ENTER key have an identical function which is to terminate a command or data entry, and cause Galaxy to act on that command or data.

Note:– If the MEMORY LOCK keyswitch is not in the OPEN position, any data entry or command which would normally cause a recording or clearing of information in system memory, will be ignored. Pressing an ENTER key will cause a warning tone to sound.

Holding down the CONTROL key whilst pressing certain other keys will send specific commands to Galaxy. Control codes are mentioned throughout the handbook except those listed below.

CTRL E (ALT+PRINT SCREEN) Will cancel flashing error messages from the VDU mimics.

CTRL J Acts in a similar manner to ENTER for data entries but does not advance the display to the 'next' line of data.

CTRL L Operates only when entering text and inserts a black line at the cursor position.

CTRL K Operates only when entering text and deletes the line indicated by the cursor position.

Holding down the SHIFT key with another key will send to Galaxy either 'Upper Case' letters or the upper of two symbols marked on the key. e.g. pressing SHIFT and key 5 would give you % on the VDU.

Pressing the ESCAPE key will cause the VDU mimic display to move 'upwards' through the menu hierarchy, until a highest level is reached.

These are special FUNCTION keys, their use is described in the relevant sections.

This is the THRU key used to allow entry of a range of numbers.

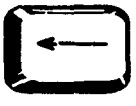
This is the AT LEVEL key, used to allow entry of level information.

This key is used mainly to seperate different sections of a keyboard command entry, particularly with 'allocation' type commands. The = key may be used in place of the colon in such commands.

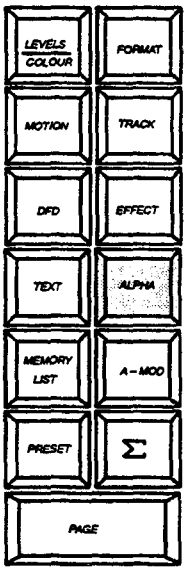
(or CTRL S) This key will insert a space in the command line, or text, at the cursor position allowing the entry of an additional character.

(or CTRL X) This key will clear all characters from the line indicated by the cursor position.

(or CTRL D) This key will delete the character to the right of the cursor position, and move following characters one place to the left.



The BACKSPACE key will delete the character to the left of the cursor position and move the cursor into that space without affecting other characters in the line.



(or CTRL V) This key must be pressed in order to gain full access to the VDU displays that apply to the Alpha Numeric keyboard. Alternatively the ALPHA button on the actual Mimic buttons(MEM/MIMIC panel) will do the same thing.

Pressing either button will always return the screen to the one previously selected.

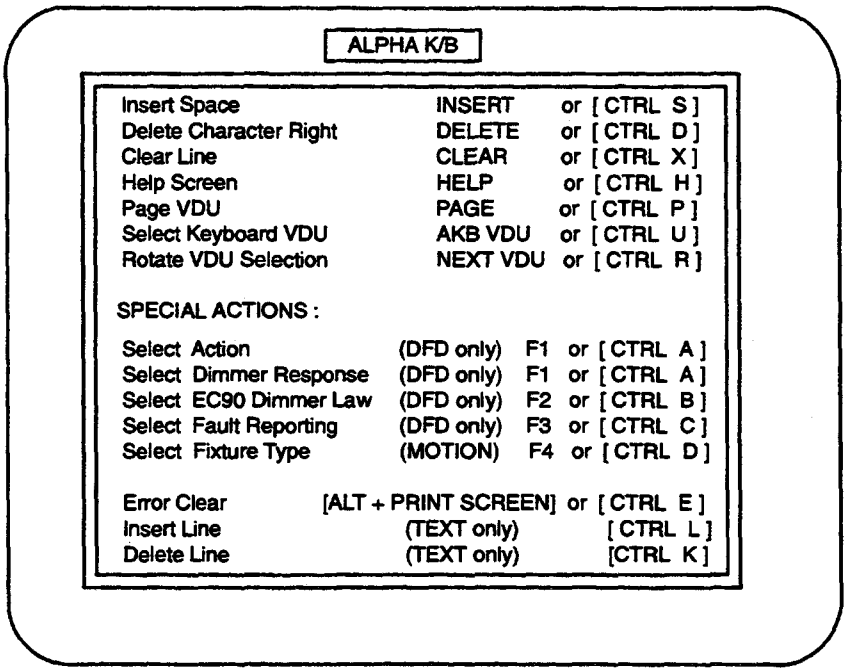
(or CTRL P) Will cause the VDU display to step through its different pages where applicable.

(or CTRL R) This key will step through, in sequence ten VDU screens that are associated with the VDU mimic, these being:–
ALPHA, TEXT, EFFECT, DFD, MOTION, TRACK, Σ (OUTPUT), PRESET, A–MOD, MEMORY LIST.
It does not give access to the FORMAT, LEVELS/COLOURS facilities..

(or CTRL H) The HELP key will display the HELP screen, shown below.

Note:– Normally the HELP screen is displayed whenever the ALPHA display is selected, however this will not be the case if another Alpha –Numeric function has been previously selected.

Fig. 11.2 Alpha / Help Screen



This screen gives a summary of keyboard commands available and their respective short–cut keys. It can be recalled at any time by pressing the HELP key. After referring to the HELP screen, pressing ESC will return you to the display previously selected.

Auxiliary / Secondary Control Codes

CTRL Q Steps through the possible options for the display on the 1st Auxiliary VDU.

CTRL W Steps through the possible options for the display on the 2nd Auxiliary VDU.

CTRL F Steps through the display pages on the 1st Auxiliary VDU.

CTRL G Steps through the display pages on the 2nd Auxiliary VDU.

The following codes will apply if the Alpha–keyboard is connected, for example, to the MAIN desk and there is a requirement to remotely control the VDUs in use with a STALLS desk, which may not have its own keyboard.

CTRL 

(or CTRL N) Toggles between the existing display on the secondary desk and the one on the MAIN VDU mimic.

CTRL 

(or CTRL T) Steps through the different displays on the VDU connected to the secondary desk.

CTRL 

(or CTRL Y) Steps through the display pages on the VDU connected to
the secondary desk.

Function Buttons

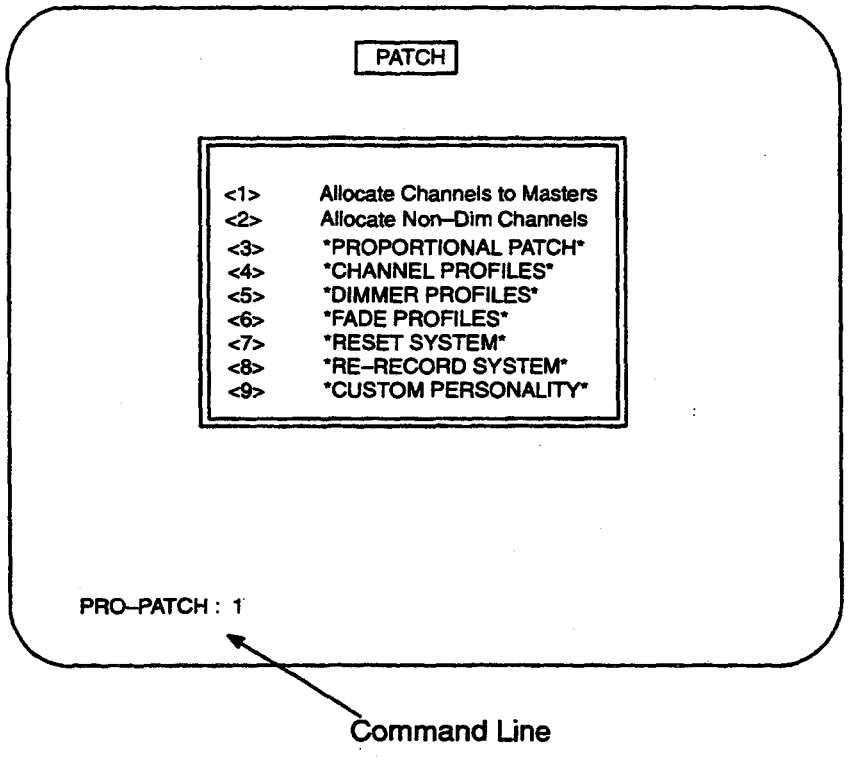
There are eight function buttons located across the top of the keyboard labelled PATCH, TEXT, DISC, PRINT, CUE EDIT, DFD, MOTION, SETUP.

As long as the Alpha screen has been selected, pressing one of these function buttons will give you full access to all their respective menus. Initially an opening menu will be displayed.

Command Line

The command line is the line shown at the bottom of the screen. It is used to input all data via the keyboard although ENTER must be pressed in order to confirm a command. Syntax of the command line varies and is covered in the appropriate function explanations.

Fig. 11.3 Command Line



The contents of the command line changes as the cursor keys and ENTER button are used to move through menus and data fields. The Command line shows, in dimly lit characters, an example of the the entry syntax required. These 'dim' characters may be cleared, over–typed, used as part of a command, or used in total as required.

Commands and sub–menus are selected by entering the associated number in the command line. Alternatively, the UP/DOWN cursor keys may be used to step through the possible options. The LEFT/RIGHT keys may be used to step through a command line entry to allow editing.

Note:– Numerical command lines often shows 'leading zeros'. If entering a completely new command(into a cleared command line) it is not necessary to enter these zeros.

If a VDU mimic display other than ALPHA is selected, the command line remains visible at the bottom of the display. The keyboard may be used to make entries, but this is not recommended when using the more complex functions.

The following sections give detailed information on the menus and data fields associated with each function button.

11. 2. PATCH FUNCTION

When the PATCH mode is selected, a primary 'Menu' will appear followed by a series of sub–menus and/or commands. This is the case for all other functions and the example shown will apply to those as well.

Fig. 11.4 Patch Menus 1–5

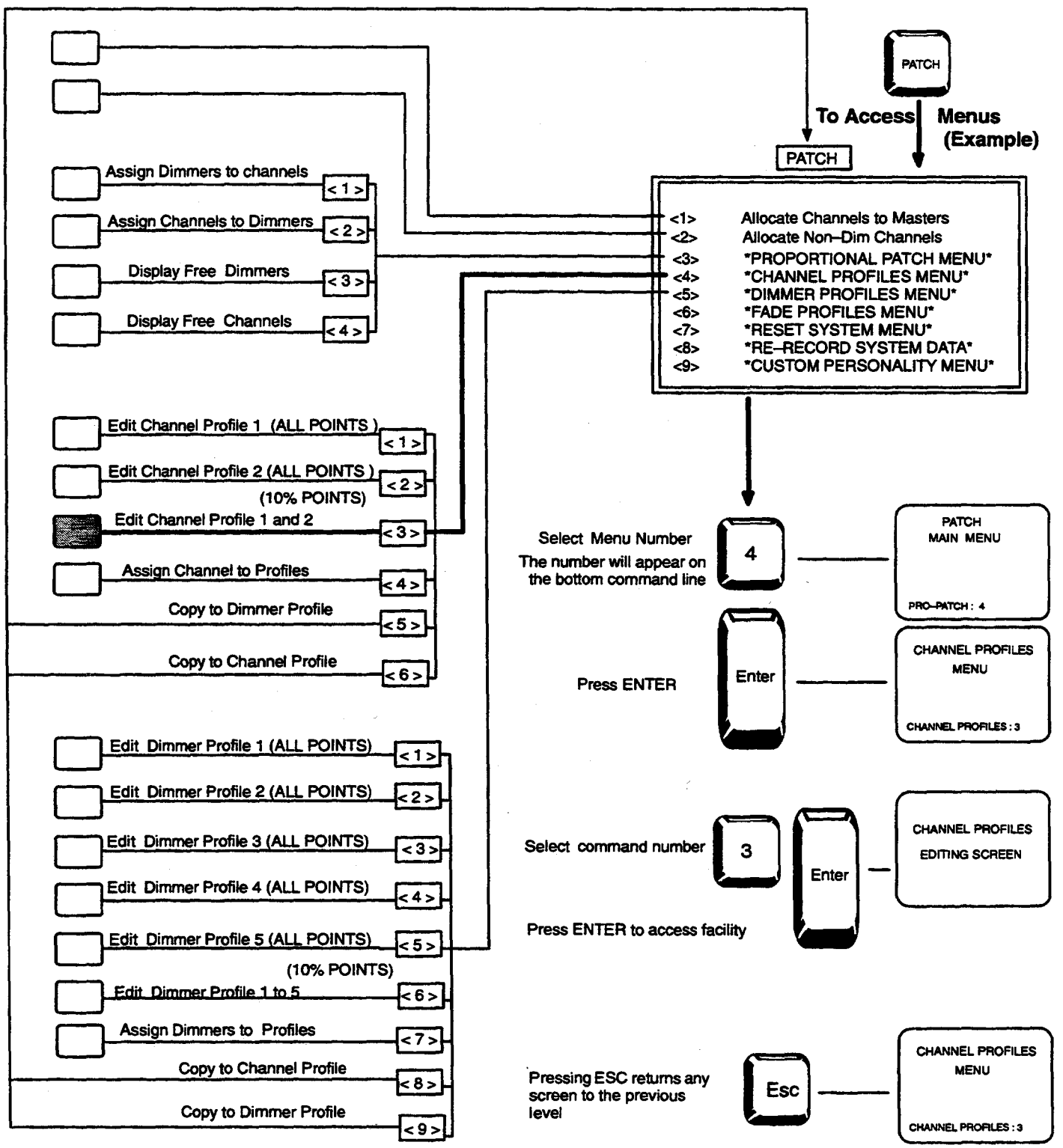
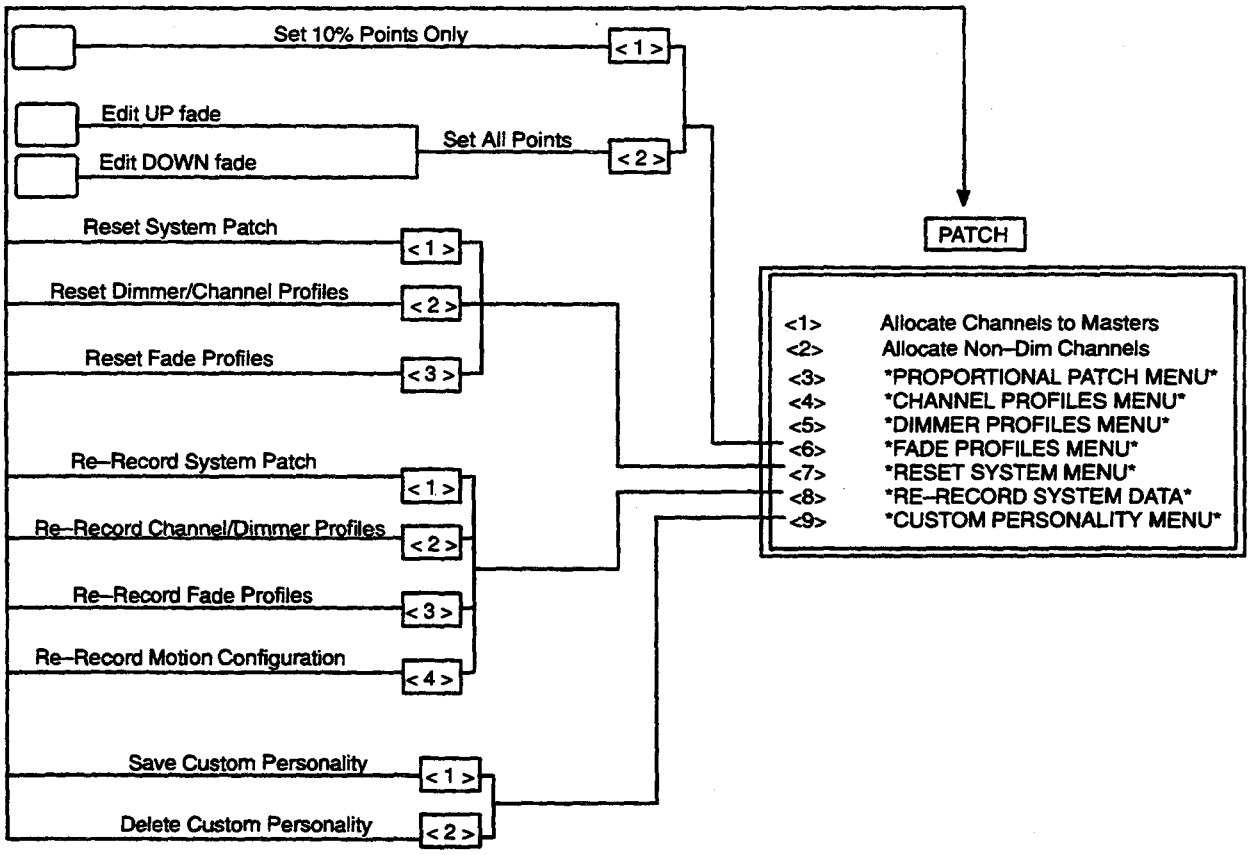


Fig. 11.5 Patch Menus 6–9



11. 2. 1. ALLOCATE CHANNELS TO MASTER

All of the channels active in the Galaxy system are normally allocated to the left–hand fader (Master 1). By using PATCH facility 1 (ALLOCATE CHANNELS TO MASTERS), any number of channels may be re–allocated to the right–hand fader, or to neither fader. In the latter case, only the hard–wired blackout switch will have overall control of the channels. The normal blackout facility will have no effect.

The VDU display simply lists channels in numerical order, an example command line could be :–

001: 2
002: 2
003: 2
004: 2
005: 1
006: 0
007: 0
008: 0
009: 0
010: 0

CHAN –> MASTER:(0= NOT MASTERED 1–LEFT 2=RIGHT) : *1 > 4 =2*

Channels not used (not entered in the Proportional Patch) do not show, although a space is left on the display for each unused channel number.

The formula in italics, *1>4=2* is the actual data input and means that channels 1 thru 4 have been allocated to master fader 2. The display shows that channel 5 is allocated to master fader 1 and that channels 6 to 10 are not mastered at all. (Channels not mastered will show 0).

Note:– The : key may be used as an alternative to the = key

11. 2. 2. ALLOCATE NON–DIM CHANNELS

Any channel in the Galaxy system may be allocated a Non–Dim function, i.e. as soon as the channel is raised above zero, it switches On to full brightness.

Both the operation of this facility and its VDU display are similar to the master allocation facility. The title of the display is 'NON–DIM CHANNELS' and the bottom line reads:–

CHAN –> NON–DIMS: (0= NORMAL, 1–NON–DIM 2=LEFT) : *001 = 0*

Non–dim channels are assigned by entering the channel number (or range of numbers) followed by = or : and the figure 1, while channels which are to operate normally are selected by entering the figure 0 after the channel number. On the display, channels which operate normally have no figure following the channel number.

11. 2. 3. PROPORTIONAL PATCH MENU

Assign Dimmers to Channels

Dimmers are listed in blocks of 100 per page. The default command line is in the order of DIMMER number: CHANNEL number : @ proportional level / Dimmer Profile number.

DIMMERS/CHANNELS: *0001=005 @ + 00/ L*

Note:– @ + *00* refers to channel at FULL.

The following example shows the type of information :–

```
0001:005  @ 50/L
0002:002  @ + 00/L
0003:003
0004:004
0005:005
0006:006
0007:007
0008:008
0009:009
0010:010

DIMMERS/CHANNELS: 0001=005  @ 50 / L
```

The example shows dimmer 1 patched to channel 5 at 50%. Proportional level is the percentage of the control channels level that the dimmer will come to; e.g. If the patch is set for @50 then the dimmer will be 50% of the control channel level. If the control channel is at FULL then the dimmer will be at 50%; if the control channel is at 75% then the dimmer will be at 37.5% and so on.

The Dimmer number may be in the range of 1 through 1536. The Channel number may be in the range of 1 through 999.

If the patch is set for @+50 then the dimmer will be 150% of the control channels level. If the control channel is at full, then the dimmer will be at full; if the control channel is at 50% then the dimmer will be at 75% and so on.

The Dimmer profile number may be any number in the range of 1 to 5. 'L' is used for the Linear Profile. 'N' is used for Non Dim. Upper or lower case may be used.

To un–patch a dimmer, patch it to channel 0 (nnnn=000 <ENTER>)

Use of the "comma" and ">" is explained in the following example:

1>10:1 Assigns dimmers 1 thru 10 inclusive to channel 1.

1,10:11 Assigns dimmers 1 thru 10 to channels 11 thru 20, one dimmer per channel.

1>10:1 /2 Assigns dimmers 1 thru 10 inclusive to channel 1 and sets dimmers 1 thru 10 to use dimmer Profile 2.

1,10:11 /N Assigns dimmers 1 thru 10 to channels 11 thru 20, one dimmer per channel with all dimmers Non Dim.

To advance rapidly to the next Dimmer/ Channel to be assigned or modified, simply press CLEAR and enter:

nnnn <ENTER>

where nnnn is the dimmer number. This will move the cursor to the specified dimmer number ready for patch editing.

Dimmer profile re–assignment may also be performed using commands in the Dimmer Profiles menu.

The Page button may be used for advancing screens.

Assign Channels to Dimmers

This function permits you to assign channels to dimmers in a similar manner to assigning dimmers to channels. Using this screen it is possible to patch dimmers (with their relevant proportional levels and dimmer profile assignments) to one control channel without having to roam around finding the dimmers etc. This greatly speeds up the patching of multiple dimmers to one control channel. The screen also displays each dimmer that is assigned to a control channel against the selected control channel.

Channels are only displayed in blocks of a maximum of 20 channels per screen. This number may be reduced if there is a large number of dimmers assigned to the one control channel.

The screen has the following format:

```
001:0001 @ +00/L
002:0002    0004    0005    0006    0007    0008    0009    0010
003:0003
011:0011
012:0012
013:0013
014:0014
015:0015
016:0016
017:0017
018:0018
019:0019
020:0020

CHANNELS/ DIMMERS:001=0001 @ + 00 / L
```

In the above example dimmers 2, 4, 5, 6, 7, 8, 9, 10 are all patched to control channel 2. All other dimmers are patched on a 1 to 1 basis.

Entering nnn<ENTER> will move the cursor to the specified channel number ready for editing.

The function of the comma (,)and (>) described in the previous section also applies here.

To unpatch a dimmer, patch channel 0 to it (000 = nnnn <ENTER>).

Display Free Dimmers

Selection of this function will cause the screen to display any dimmers which are not patched to a control channel, and are thus 'free.

Display Free Channels

Selection of this function will cause the screen to display any channel numbers which have not been assigned to dimmers and are thus 'free.

11. 2. 4. CHANNEL PROFILES MENU

Edit Channel Profiles (ALL POINTS)

Two channel profiles are provided in the Galaxy system. They are set up in an identical manner, and thus only one will be dealt with here.

A channel profile is a table of numbers used to alter the normal linear relationships between channel levels (as set on the **Channel Control** panel) and the levels used to control the dimmers patched to channels.

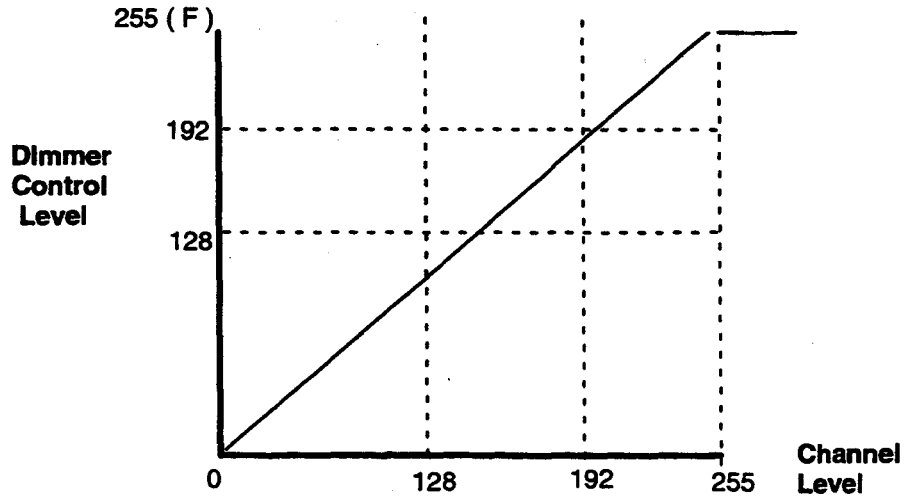
On selection of either profile above, the appropriate table is displayed in the following form:

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
000	000	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015
016	016	017	018	019	020	021	022	023	024	025	026	027	028	029	030	031
032	032	033	034	035	036	037	038	039	040	041	042	043	044	045	046	047
048	048	049	050	051	052	053	054	055	056	057	058	059	060	061	062	063
064	064	065	066	067	068	069	070	071	072	073	074	075	076	077	078	079
080	080	081	082	083	084	085	086	087	088	089	090	091	092	093	094	095
096	096	097	098	099	100	101	102	103	104	105	106	107	108	109	110	111
112	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
128	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
144	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
160	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
176	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
192	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
208	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
224	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
240	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

CHANNEL PROFILE:000=000

This shows in tabular form, the unmodified, i.e. linear, Channel Profile transfer characteristics. The numbers along the top, and down the left hand side of the table represent the stages in the channel level fade. A graphical representation of this is shown below.

Fig. 11.6 Linear Channel Profile Graph



Modified example – It is desired to match the response of a series of effects projectors, which use very large lamps, to other luminaires using smaller lamps. This may be achieved by setting up and allocating a channel profile.

The channel profile will be set so that at lower channel levels, a higher than normal dimmer control level is produced.

	00	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**	**13**	**14**	**15**
000	000	002	003	005	006	008	009	011	012	014	015	017	018	020	021	023
016	024	026	027	029	030	032	033	035	036	038	039	041	042	044	045	047
032	048	050	051	053	054	056	057	059	060	062	063	065	066	068	069	071
048	072	074	075	077	078	080	081	083	084	086	087	089	090	092	093	095
064	096	098	099	101	102	104	105	107	108	110	111	113	114	116	117	119
080	120	122	123	125	126	128	129	131	132	134	135	137	138	140	141	143
096	144	146	147	149	150	152	153	155	156	158	159	161	162	164	165	167
112	168	170	171	173	174	176	177	179	180	182	183	185	186	188	189	191
128	**192**	**193**	**193**	**194**	**194**	**195**	**195**	**196**	**196**	**197**	**197**	**198**	**198**	**199**	**199**	**200**
144	**200**	**201**	**201**	**202**	**202**	**203**	**203**	**204**	**204**	**205**	**205**	**206**	**206**	**207**	**207**	**208**
160	**208**	**209**	**209**	**210**	**210**	**211**	**211**	**212**	**212**	**213**	**213**	**214**	**214**	**215**	**215**	**216**
176	**216**	**217**	**217**	**218**	**218**	**219**	**219**	**220**	**220**	**221**	**221**	**222**	**222**	**223**	**223**	**224**
192	**224**	**224**	**225**	**225**	**226**	**226**	**227**	**227**	**228**	**228**	**229**	**229**	**230**	**230**	**231**	**231**
208	**232**	**232**	**233**	**233**	**234**	**234**	**235**	**235**	**236**	**236**	**237**	**237**	**238**	**238**	**239**	**239**
224	**240**	**240**	**241**	**241**	**242**	**242**	**243**	**243**	**244**	**244**	**245**	**245**	**246**	**246**	**247**	**247**
240	**248**	**248**	**249**	**249**	**250**	**250**	**251**	**251**	**252**	**252**	**253**	**253**	**254**	**254**	**255**	**255**

CHANNEL PROFILE: 255=255

a) Enter the channel level range which requires the increased output.
000>128

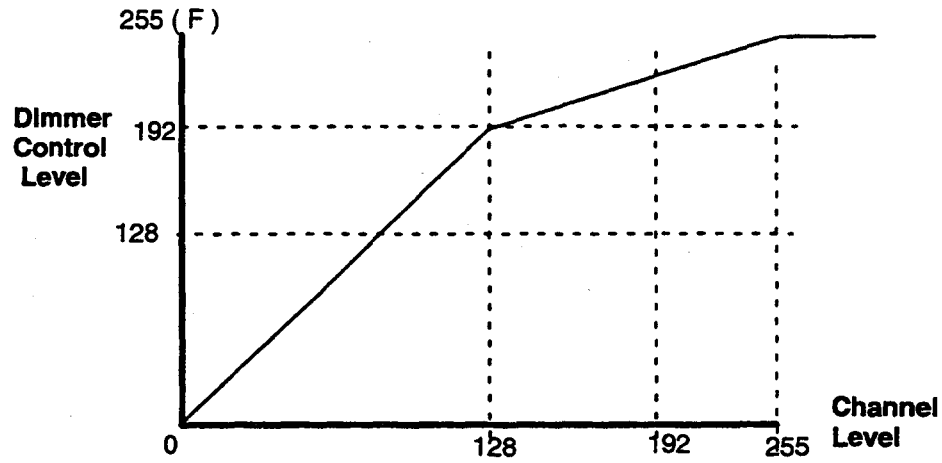
b) Type = or :

c) Enter the corresponding output level range required.
000>192

d) Press ENTER

e) repeat the procedure for the remaining level range.
128 > 255 = 192 > 255 ENTER

Fig. 11.7 Modified channel Profile Graph



Edit Channel Profiles (10% POINTS)

When function 3 is selected on the Sub menu, the following screen will be displayed:–

```
      00  10  20  30  40  50  60  70  80  90 100
1)   000 010 020 030 040 050 060 070 080 090 100
2)   000 010 020 030 040 050 060 070 080 090 100

1) text for profile 1
2) text for profile 2
1)   000 010 020 030 040 050 060 070 080 090 100
```

The first line of the screen shows the percentage of Channel Level. The second line of the display shows the corresponding Dimmer control level for each point. Profile Number 1 is also displayed in the command line ready for editing (italics). The cursor keys may be used to step the cursor to the required field or to the next profile.

If a level value is replaced by three spaces, this level will be automatically adjusted to give a linear transfer characteristic between the level values on either side. This remains true even if more than one level is replaced by spaces.

The TAB key may be used to step from one level to the next, or SHIFT TAB may be used to step to the previous level. This facility offers a simple method of setting up Channel Profiles, by entering values for only 10% steps of level. The levels between these points are automatically adjusted to give a linear transfer characteristic.

The two numbered lines below the profiles are for text associated with the profiles, only one line of text may be entered for each profile.

Assign Channels to Profiles

This function permits control channels to be assigned to Channel Profiles. Each channel may be assigned to profile 1 or 2, or may be set to the linear profile. This display is similar to ALLOCATE TO MASTER FADERS.

Copy to Dimmer Profiles

The construction of the dimmer and channel profiles are identical. This facility permits you to copy one of the two channel profiles to any of the 5 dimmer profiles.

When selected the screen will display:–

CHANNEL PROFILE , DIMMER PROFILE:

You then enter the channel profile number you wish to copy, type comma (,) and then enter the dimmer profile you wish to copy the profile to, terminating the entry with <ENTER>. The action may be aborted prior to pressing <ENTER> by pressing <ESC>.

Copy to Channel Profile

This facility permits you to copy one channel profile to another. This enables a second profile to be constructed using the first profile as a base.

When selected the screen will display:–

CHANNEL PROFILE , CHANNEL PROFILE:

Enter the Channel Profile you wish to make the copy of, type comma (,) then enter the profile you wish to copy to and terminates the entry with <ENTER>. The action may be aborted any time before <ENTER> is pressed by pressing <ESC>.

11. 2. 5. DIMMER PROFILES MENU

A Dimmer Profile is a table of numbers which may be used to alter the normal linear relationship between controlling channel levels and the actual levels transmitted to the dimmers. Each dimmer may be assigned to any one of the 5 profiles. This permits multiple dimmers assigned to one control channel to each have their own output characteristic.

Each of the Dimmer Profile facilities can be edited in an identical manner to the CHANNEL PROFILES. Please refer to that section for editing details.

11. 2. 6. FADE PROFILES MENU

A fade profile is a table of numbers used to alter the normal linear relationships between a Playback fade operation and the progress of a fade. Normally a fade Profile would be set up with the LEARN PROFILE facility incorporated on the **Advanced Playback** panel. Alternatively the Alpha–keyboard offers two other methods of setting up and editing Fade Profiles

The first is a simple method, whereby the required fade progress is set at 0%, 10%, 20% etc. of total fade duration, and the levels between these points are automatically adjusted to give a linear transfer characteristic from point to point. The second method allows the individual adjustment of each of 256 separate points in the profile.

Set 10% Points Only

If this command has been selected from the sub–menu, the following will appear on the data input line at the bottom of the screen asking for the number (1–10) of the profile to be entered :–

EDIT PROFILES: PROFILE ?

On entry of a valid Fade Profile number (i.e. between 1 and 10) the following display appears:

	00	**10**	**20**	**30**	**40**	**50**	**60**	**70**	**80**	**90**	**100**
1UP	00	15	23	30	40	50	60	70	80	90	100
1 DOWN	00	07	15	27	40	50	60	70	80	90	100
2 UP	00	10	20	30	40	50	60	70	80	90	100
2 DOWN	00	10	20	30	40	50	60	70	80	90	100
3 UP	00	10	20	30	40	50	60	70	80	90	100
3 DOWN	00	10	20	30	40	50	60	70	80	90	100
4 UP	00	10	20	30	40	50	60	70	80	90	100
4 DOWN	00	10	20	30	40	50	60	70	80	90	100
5 UP	00	10	20	30	40	50	60	70	80	90	100
5 DOWN	00	10	20	30	40	50	60	70	80	90	100

1) Text
2) Text
3) Text
4) Text
5) Text

1UP	10	20	30	40	50	60	70	80	90

The first line of the screen shows the actual percentage of fade duration. The lines below, display the corresponding fade progress for each point. The UP portion of the selected Fade Profile is displayed on the command line ready for editing in the normal way. The PAGE button will change the display to profiles 6 to 10. The line currently displayed on the command line is highlighted in inverse video.

Fade progress values may only be entered for percentages 10 to 90; percentages 0 and 100 are fixed points at the beginning and end of the fade respectively.

The five numbered lines at the bottom of the screen are intended for descriptive text, one line for each profile.

> **Note:–** Although in general the ↑ and ↓ cursor control keys may be used as alternatives to RETURN and LINE FEED when entering modifications, this is not possible when programming a Fade Profile using the 'SET 10% POINTS ONLY' option.

Set All Points

When 'SET ALL POINTS' is selected, a second sub–menu appears, as follows:–

1) Edit UP profile

2) Edit DOWN profile

On selection of either of the above, the appropriate Profile is displayed in the following form:–

FADE PROFILE 1 UP

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
000	000	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015
016	016	017	018	019	020	021	022	023	024	025	026	027	028	029	030	031
032	032	033	034	035	036	037	038	039	040	041	042	043	044	045	046	047
048	048	049	050	051	052	053	054	055	056	057	058	059	060	061	062	063
064	064	065	066	067	068	069	070	071	072	073	074	075	076	077	078	079
080	080	081	082	083	084	085	086	087	088	089	090	091	092	093	094	095
096	096	097	098	099	100	101	102	103	104	105	106	107	108	109	110	111
112	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
128	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
144	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
160	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
176	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
192	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
208	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
224	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
240	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

FADE PROFILE:001= 001

This shows in tabular form, the unmodified, i.e. linear, Fade Profile 1 UP transfer characteristics. Editing this profile is similar to editing a CHANNEL PROFILE table and that section should be referred to for these purposes.

Deleting Fade Profiles

As the default fade profile is linear, a Fade Profile is only created as such if it is changed from the linear state. Once created it occupies some of the Cue Memory, which would otherwise be available to store lighting states. If a high percentage of the available memory is in use, consideration should be given to deleting any Fade Profiles which are not being used.

A Fade Profile may be deleted from memory be resetting it to linear. Either **'SET 10% POINTS ONLY'** or **'SET ALL LEVELS'** may be used for this.

> **Note:–** Resetting a fade profile to Linear does not alter the associated Fade Profile Text; this should be deleted separately. If the memory is re–initialised, all Fade Profiles are reset to linear and any Fade Profile Text is deleted.

If Fade Profiles are to be used extensively, consideration should be given to fitting additional memory (if required).

The Difference Between Channel, Dimmer and Fade Profiles

A memory may be assigned to a FADE PROFILE. As such, when that memory is recalled on a **Playback** panel with USE TIME selected, the progress of a fade to that memory will be affected by the profile. This usually means that changes in channel level will not be linear as the fade progresses.

A channel may be assigned to a CHANNEL PROFILE. All dimmers patched to such a channel will have their dimmer control levels, corresponding to the possible channel levels, affected by the profile. This will remain true irrespective of the source of the channel level.

A dimmer may be assigned to a DIMMER PROFILE. As such the levels transmitted to a dimmer, corresponding to the possible channel levels, will be affected by the profile.

CAUTION:– It is not recommended to assign channels to a CHANNEL PROFILE when the dimmers controlled by that channel are also allocated to a DIMMER PROFILE. The results may become unpredictable.

11. 2. 7. RESET SYSTEM PATCH MENU

Reset System Patch

This function will clear patch options as follows:–

Channel to Master allocation –	Cleared
Channel to Profile allocation –	Cleared
Non–Dim channels –	Returned to normal
Proportional Patch –	Cleared with dimmers allocated 1:1 at level +00 with no Profiles.

Reset Channel / Dimmer Profiles

This function will clear <u>all</u> channel and Dimmer Profiles (but not allocations to them), leaving them at a 1:1 configuration.

Reset Fade Profiles

This function will clear <u>all</u> channel and Fade Profiles (but not allocations to them), leaving them at linear.

11. 2. 8. RE–RECORD SYSTEM DATA

If the system memory is re–initialised (refer to section 4.1.1.) all patch and Profile data are deleted. However, the system holds a 'working copy' of this information. By using a RE–RECORD function, it is possible to re–record from this 'working copy' back into the system memory.

> **Note:–** The 'working copy' will be lost if the system is turned off also RE–RECORD will not recover data deleted using the RESET SYSTEM PATCH functions.

Re–Record System Patch

This function will re–record the channel to master allocation,Non–Dim channels, the entire Proportional patch and the Channel to Profiles allocation.

Re–Record Channel / Dimmer Profiles

This function will re–record all Channel and Dimmer Profiles.

Re–Record Fade Profiles

This function will re–record all Fade Profiles.

Re–Record Motion Configurations

This function will re–record the entire set of Motion Configurations.

11. 2. 9. CUSTOM PERSONALITY

Custom Personality is an optional facility whereby the following information may be recorded into memory unaffected by the normal memory erasure procedures.

- PROPORTIONAL PATCH
- CHANNEL PROFILES
- DIMMER PROFILES
- FADE PROFILES
- NON–DIM CHANNELS
- CHANNEL TO MASTER ALLOCATIONS
- CHANNEL TO PROFILE ALLOCATION

The Custom Personality will be used automatically by the system for PATCH, PROFILES etc. If you wish to over ride it, simply enter the new information as normal. This will then be used by the system in place of the Custom Personality.

Save Custom Personality

This function will re–record the current Patch and Profile information into the Custom Personality memory.

You will be asked to 'confirm'(Y <ENTER>) or 'cancel'
('n'<ENTER>) this operation.

Note:– This operation can take up to 5 minutes to complete.

Delete Custom Personality

This function will clear the entire Custom Personality memory.

You will be asked to 'confirm'(Y <ENTER>) or 'cancel'
('n'<ENTER>) this operation.

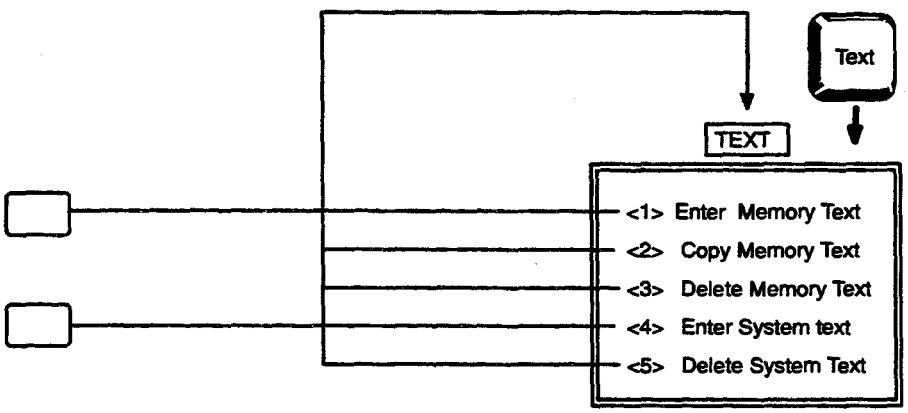
11. 3. TEXT FUNCTION

The TEXT function allows up to a page of information (20 lines) to be appended to any memory. In addition, up to 999 pages of 'System Text' may be appended to memory 0. However, it is important to remember that text uses a great deal of space in the memory, and that, even on the largest systems, it is best to keep any text entries as short as possible.

The text associated with the memory will only be displayed in its entirety when the TEXT display is selected. (the required memory must first be selected on the MEMORY keypad). If the memory is interrogated by use of the '?' button above the MEMORY keypad, the first line only will appear. On the MEM LIST display mode, only the first 30 characters of text appear.

The first page of the System Text is displayed by selecting TEXT on the VDU display, with no memories selected on the MEMORY keypad. Subsequent pages may be selected by stepping through using the Page button. The page number appears on the top left hand corner of the screen. Unused pages will be ignored when the PAGE button is used.

Fig. 11.8 Text Menu



As in the case of PATCH facilities, the required facility is selected by entering the appropriate number and pressing ENTER.

Entering Memory Text

The 'ENTER MEMORY TEXT' facility is selected by typing 1, ENTER. The bottom line of the display then changes to read, 'ENTER TEXT: MEMORY?'. The required memory number is now entered and when ENTER is typed, any existing text will appear on the screen. Initially, the cursor will be in the top left–hand corner of the screen, and the first line of text will be duplicated at the bottom. As the cursor is moved from line to line, the bottom line of the display changes to echo the contents of the current line.

In existing text, the current line (i.e. the line where the cursor is currently located) is always shown at a lower brightness level than the rest of the text. This indicates that it is existing text which may be modified simply by typing in new material. The new, un–recorded, characters appear at full brightness.

> **Note:–**When typing text, care must be taken at the ends of lines, as there is no automatic Carriage Return. When the end of a line is reached, new characters are simply typed in the last available space, i.e. that occupied by the previous character.

Copy Memory Text

The 'COPY MEMORY TEXT' facility provides a simple means of appending the same text to two or more memories. When selected, the bottom line of the display changes to read:–

COPY TEXT: FROM MEMORY, TO MEMORY?

The memories required are entered separated by a (,) or >

Example:– 27,135 ENTER.

Text may only be copied between single memories. If multiple copies are required, each must be made individually.

It is important to ensure that the memory in which the copy is being made does not contain text which must be retained, as the Copy action completely replaces any old text with the new. If the new text is to be added to that which already exists, it must be typed in, using the ENTER MEMORY TEXT facility.

Delete Memory Text

The 'DELETE MEMORY TEXT' facility allows all of the text associated with a memory to be quickly deleted, without affecting the recorded lighting state. When selected, the bottom line of the display changes, to read:–

'DELETE TEXT: MEMORY?'

The required memory number should now be entered, followed by ENTER to perform the delete action. Text may only be deleted from one memory at a time.

Enter System Text

The 'ENTER SYSTEM TEXT' facility is similar to 'ENTER MEMORY TEXT', with the exception that a page must be selected instead of a memory. When selected, the title of the display changes to:–

SYSTEM TEXT

ENTER TEXT: PAGE?

The required page number, which may be any whole number between 1 and 999, is now entered, followed by ENTER. Any existing text for the selected page now appears on the screen, with the first line duplicated at the bottom and the page number in the top left hand corner. New text is entered, or changes made, in the same way as for ENTER MEMORY TEXT.

Delete System Text

System Text may be deleted in a similar fashion to Memory Text, when this facility is selected, the title of the VDU display changes to:–

SYSTEM TEXT

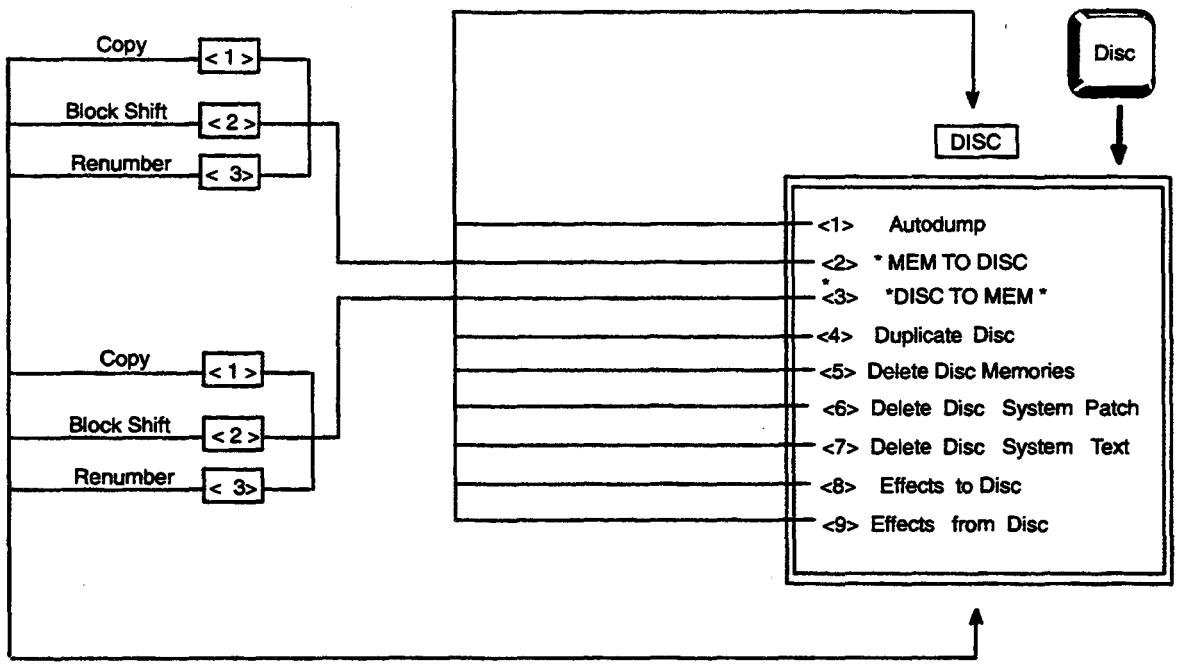
DELETE TEXT: FROM PAGE, TO PAGE ?

When the required page numbers have been entered (using the 'Thru' instruction), typing ENTER will initiate the delete action and the display will return to the TEXT Menu.

11. 4. DISC FUNCTION

The Disc Control functions greatly extend the facilities provided by the Floppy Disc unit. When the DISC CTRL button is pressed the VDU (if in αKB mode) displays the following Menu:–

Fig. 11.9 Disc Menu



The required facility is selected by entering the corresponding number on the keyboard and pressing ENTER.

Autodump

The 'AUTODUMP' facility causes the system to automatically create, on disc, a copy of each memory as it is recorded. The disc will then be always completely up to date and a separate Memory to Disc will be unnecessary.

When the Autodump facility is selected on the Keyboard (by typing 1, RETURN) the bottom line of the display changes, to read .

AUTODUMP: DRIVE?

On systems with only one disc unit, typing 1 RETURN will switch Autodump ON and 0, RETURN will switch it OFF. On systems with two disc units, either drive 1 or drive 2 may be selected. In this case, 1 , RETURN selects drive 1 and 2 , RETURN selects drive 2.

The selected disc unit must contain a disc with its Write Protect hole covered. If there is no disc or if the door of the unit is not closed, performing a record action will cause 'DISC NOT READY' to flash on the VDU screen. Similarly, if the disc is 'Write Protected', **'Disc Safe'** will flash on the screen. In Both cases, the Failure of the Autodump action does not affect the normal record action. Because Autodump is a mode of operation rather than a disc action, it need not be re–selected if either of the above error messages occur. Simply rectify the problem and press the ERROR button on the main desk.

When Autodump mode is entered, the system copies the patch data onto disc. This will not happen if an error occurs as described above.

When Autodump is in use, the 'LAST REC ' message on the VDU is replaced by ' AUTODUMP '.

> **Note:–** Autodump must be de–selected before other disc functions are used. This facility allows the copying of memory information from the system onto disc.

11. 4. 1. MEMORY TO DISC

When this is selected from the Disc Control Menu, the following commands appears on the display:

1) Copy

2) Block Shift

3) Renumber

'Copy' is automatically pre–selected and may be actioned simply by typing ENTER.

Copy

Any of the memories in the Galaxy system may be duplicated on disc by using the 'Copy' action. When 'Copy' is selected, the bottom line of the display changes to:–

MEMORY TO DISC: FROM MEMORY, TO MEMORY: (DRIVE)?

The required range of memories can now be entered separated by (,) or > followed, if the drive selection is to be changed, by : or = and the number of the required drive.

ENTER initiates the COPY action. Single memories may also be copied by omitting the 'Thru' instruction and the second memory number. If the memory range is 0 the Patch, Profiles, System Text, Motion configuration, Effects etc. will be copied to disc.

Block Shift

The 'BLOCK SHIFT' action allows you to duplicate a range of Galaxy memories on disc and, at the same time to automatically assign new numbers to these memories on the disc, by adding a pre–selected offset to the original numbers. The numbers of the memories in the main Galaxy system remain unchanged.

The same offset is added to all memory numbers so that, with an offset of 100, for instance, memory 1 becomes 101, 1.5 becomes 101.5, 2 becomes 102 etc.

If any of the memories copied onto the disc include recorded links, these will be deleted, unless they are links to memories within the selected range. In the latter case, the offset will be added to the link destination memory number.

For example:

Memories 1 to 10 are to be copied onto disc, block shifted by 100. Memory 5 is linked to memory 1 and memory 8 to memory 15. When the Memory to Disc action is complete, the ten memories will be numbered 101 to 110 and memory 105 will be linked to 101. There will be no link associated with memory 108.

The new memories thus created will be substituted for any existing memories with corresponding numbers on the disc. However, where there are memories on the disc for which there are no corresponding new memories, these will remain unchanged.

When the 'BLOCK SHIFT' action is selected, the bottom line of the VDU display first changes to:–

MEMORY TO DISC: FROM MEMORY, TO MEMORY: (DRIVE)?

The range of Galaxy memories is then entered, followed, if necessary, by the drive number. When ENTER is pressed, the bottom line of the display changes second time, to read :–

BLOCK SHIFT BY ?

The required offset is then entered and the BLOCK SHIFT action is initiated by typing ENTER.

Renumber

The 'RENUMBER' action is similar to BLOCK SHIFT, but in this case the memories are assigned consecutive numbers on the disc. Thus, if memories 1, 1.3, 2, 2.8, 3 and 4 are renumbered starting from 101, the new memory numbers on the disc will be as follows:–

Number in Galaxy memory	New Number on disc
1	101
1.3	102
2	103
2.8	104
3	105
4	106

As in the case of BLOCK SHIFT, each existing disc memory within the appropriate range will be overwritten unless there is no new memory with the same number. Any links associated with memories copied on to disc in this way will be deleted.

When the 'RENUMBER' action is selected, the bottom line of the VDU changes to:–

MEMORY TO DISC: FROM MEMORY,TO MEMORY: (DRIVE) ?

and the range of Galaxy memories is entered in the normal way. When ENTER is typed, the bottom line of the display changes again, to read:–

RENUMBER: FIRST MEMORY NUMBER?

When this has been entered, typing ENTER will initiate the action.

11. 4. 2. DISC TO MEMORY

This facility allows the copying of memory information from disc into the system.

The operation of the 'DISC TO MEMORY' facility is identical to that for 'MEMORY TO DISC', with the exception that the disc actions take place at a slightly higher speed. In the case of the Disc to Memory Renumber action, however, the disc action may be very much slower. When copying from disc to memory, the MEMORY LOCK keyswitch must be in the OPEN position.

Duplicate Disc

When the 'DUPLICATE DISC' facility is selected, the bottom line of the VDU display changes to:–

DUPLICATE DISC: FROM DRIVE, TO DRIVE? 1>2

'From 1 to 2' is automatically pre–selected and this may be actioned by simply typing ENTER. If disc 2 is to be duplicated on disc 1, the numbers should be re–typed in that order first. Before starting, ensure that both discs are correctly inserted, that both drive doors are closed, and that the destination disc has its write protect notch covered.

Delete Disc Memories

This function will delete memories from the disc, **not** the system. When selected the following is displayed on the VDU.

DELETE DISC MEMORIES: FROM MEMORY, TO MEMORY: (DRIVE) ?

The required range of memories is then entered followed by the number of the required drive. Pressing ENTER will then initiate the delete action.

Delete System Patch

This facility will delete the system patch (i.e.Proportional Patch, Channel/Dimmer Profiles, Channel Profile Allocation, and Master and Non– Dim assignment) from disc. Other data will remain unchanged.

When 'DELETE SYSTEM PATCH' is selected, the bottom line of the VDU display changes to:–

DELETE SYSTEM PATCH: DRIVE?

The required drive can now be selected and the action initiated by typing ENTER.

Delete System Text

System Text may be deleted from disc by using the 'DELETE SYSTEM TEXT' facility. When this is selected, the bottom line of the VDU display changes, to read:–

DELETE SYSTEM TEXT: DRIVE ?1

The selected drive is automatically pre–selected and if this is the drive required, the delete action is initiated simply be pressing ENTER. Alternatively, the other drive may first be selected.

> **Note:–** This feature will only delete the System Text from the disc. It will not delete text associated with Profiles or Memories.

Effects to Disc

Effects may be copied to disc using this facility. The operation is very similar to the Copy function for Memories to Disc.

Effects from Disc

Effects may be copied from disc using this facility. It is very similar to the copy function for Disc to Memory.

11. 5. PRINT FUNCTION

11. 5. 1. INTRODUCTION

If the Galaxy system is provided with a printer, this may be used to produce copies of memories, memory text, system parameters, etc. The printer is controlled by using the PRINT functions on the keyboard.

Before starting to print, the following should be checked:

1) Ensure that the printer has power available and that it is connected to the Galaxy Electronics crate.

2) Check that there is sufficient paper.

3) Switch the printer on and check that the 'ON LINE' indicator is lit. If not, press the adjacent ON LINE switch.

Refer to your printer instruction manual for further information.

With 

selected, the main print menu will appear as shown overleaf.

11. 5. 2. PRINT INITIALISATION MENU

Enter Print Title

If required, an identifying title may be added to every page of print. To enter this title, select function 1 ('ENTER TITLE') from the PRINT menu. The bottom line of the VDU display will then show any previous title. This may be cleared by pressing CLEAR and the new title may be typed in the normal way. Note that the title may not be longer than one line of 79 characters.

Initialise Printer

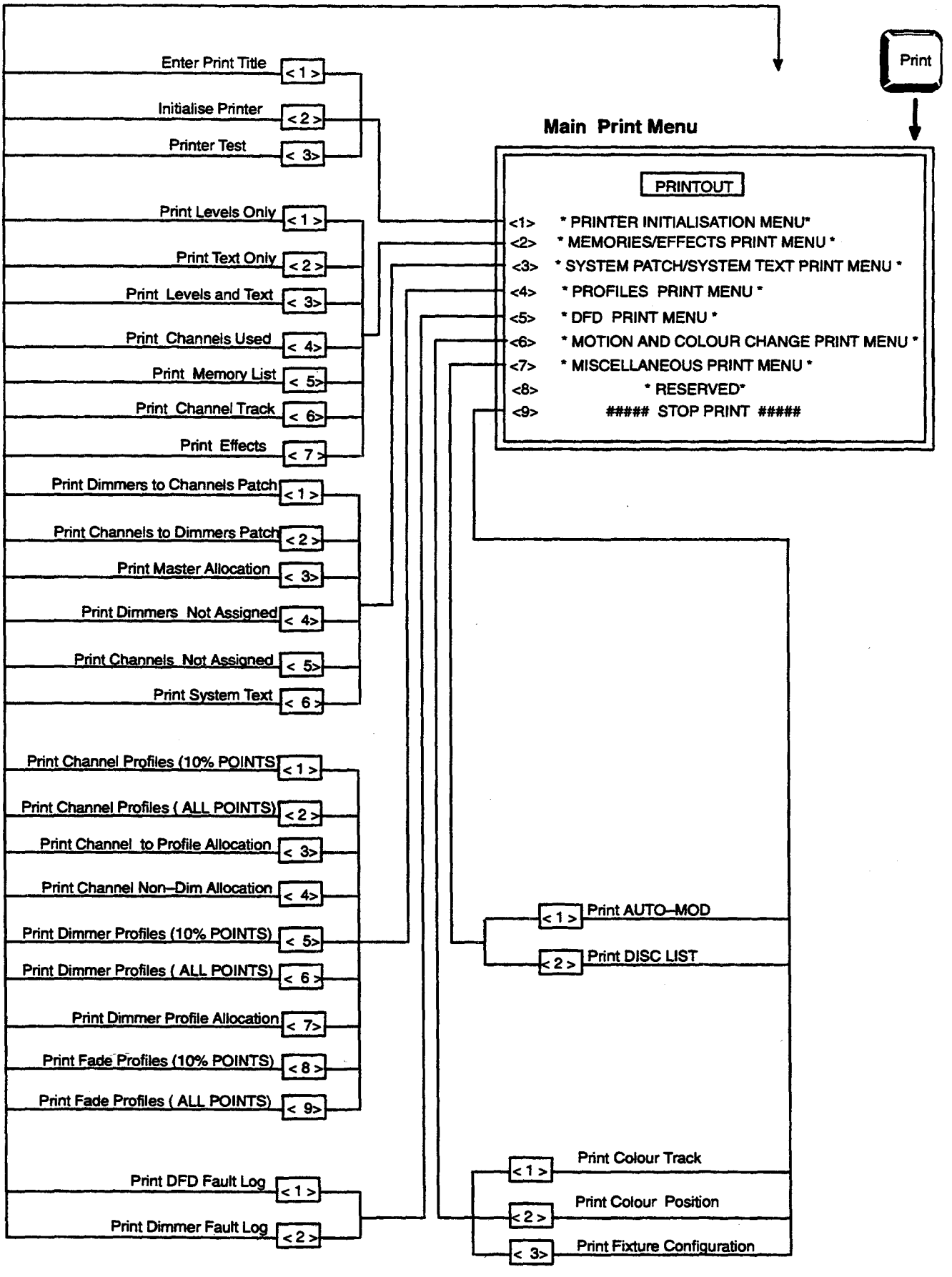
It is important that this is selected and utilised when the Galaxy is first used with a particular printer. It sends all the commands required to set the printer to conform with the PRINT section of the SETUP menu.

Printer Test

This may be used as a basic test of a printer. If selected, and actioned, the printer will be sent a repeated line:

Galaxy Printer Test Galaxy Printer Test Galaxy Printer Test..... etc

Fig. 11.10 Print Menu



11. 5. 3. MEMORIES / EFFECTS PRINT MENU

The operation of the functions within this menu are typical of those of other print functions. When each option is selected, the command line will prompt for a range of memories(or effects). Type in the first memory and the last memory to be printed separating them by a comma or >. <ENTER> will then action the command.

Print Levels Only

This function provides a printout showing the recorded levels of channels within the selected memory range.

The printout will show in BOLD those channels that have a different level relative to that in the previous memory. Channels whose levels have not changed from memory to memory will print as normal. This feature only applies to printers that support the Epson BOLD function.

When a channel has changed in level, the direction of the change will be shown as / (up) and \ (down) between the channel number and level.

The printout will also show memory times, link, profile and the first line of text for each memory printed. Format of the printout may be altered by using the Printer Setup Menu.

Print Text Only

This function provides a printout showing memory times etc., and the full text recorded for the selected range of memories, but without channel levels.

Print Levels and Text

This function provides a printout showing memory times etc., and the full text recorded for the selected range of memories with channel levels included.

Print Channels Used

This printout will show, for the specified memory range, the number of memories in which the channel has a non zero level, and the highest level for each channel. If a channel is recorded in more than 99 memories this will show as 99+. It should be noted that some time may elapse from the time this print function is requested until printing commences.

Print Channel Track

This Printout is similar in nature to the CHANNEL TRACK VDU mimic display that applies to the selected range of memories. The Channels to be tracked must be previously selected using the track button.

Print Memory List

This Printout is similar in nature to the MEMORY LIST VDU mimic display that applies to the selected range of memories.

Print Effects

This provides a printout of all recorded effects within the specified range.

11. 5. 4. SYSTEM PATCH / SYSTEM TEXT PRINT MENU

This series of functions provides Printouts of Patch and Text information. These are very similar to the corresponding VDU mimic displays.

Print Dimmers to Channels Patch

Prints the Proportional Patch in 'Dimmers to Channels' format.

Print Channel to Dimmers Patch

This option not currently available.

Print Master Allocation

This prints the assignment channels to Grand Masters.

Print Dimmers Not Assigned

Gives a list of each dimmer number in the system which has not been patched to a channel.

Print Channels Not Assigned

Prints a list of each channel number which has not been patched to a dimmer.

Print System Text

This prints a listing of selected pages of the system text. For memory text please refer to the Memories/Effects Print Menu.

11. 5. 5. PROFILES PRINT MENU

This series of functions provides Printouts of Profile information. These are very similar to the corresponding VDU mimic displays.

11. 5. 6. DFD PRINT MENU

Print DFD Log

Prints a hard copy of the 256 event Fault log which includes time and date of fault.

Print Dimmer Fault Summary

Prints a copy of the Dimmer Fault Status display.

11. 5. 7. MOTION AND COLOUR CHANGE PRINT MENU

Print Colour Track, Colour position

These will print representations of the appropriate VDU mimic displays for a selected range of memories.

Print Fixture Configuration

This will print a representation of the MOTION setup VDU mimic display.

11. 5. 8. MISCELLANEOUS PRINT MENU

When this item is selected the following items will be displayed on a sub–menu :–

Print AUTO–MOD

This printout will take the same format as the Auto–Mod display.

Print DISC LIST

The 'PRINT DISC LIST' facility is similar to 'PRINT MEMORY LIST', except that the information is taken from the disc in the selected drive.

The range of memories required must be specified, followed, if the disc drive selection is being changed, by the required drive number.

11. 5. 9. STOP PRINT

When selected, this will halt the print action. However, the print action will not stop immediately but only when the buffer store contents have been printed.

Once it has been stopped, the print action cannot be restarted without re–selecting the print facility required.

11. 6. CUE EDIT MENU

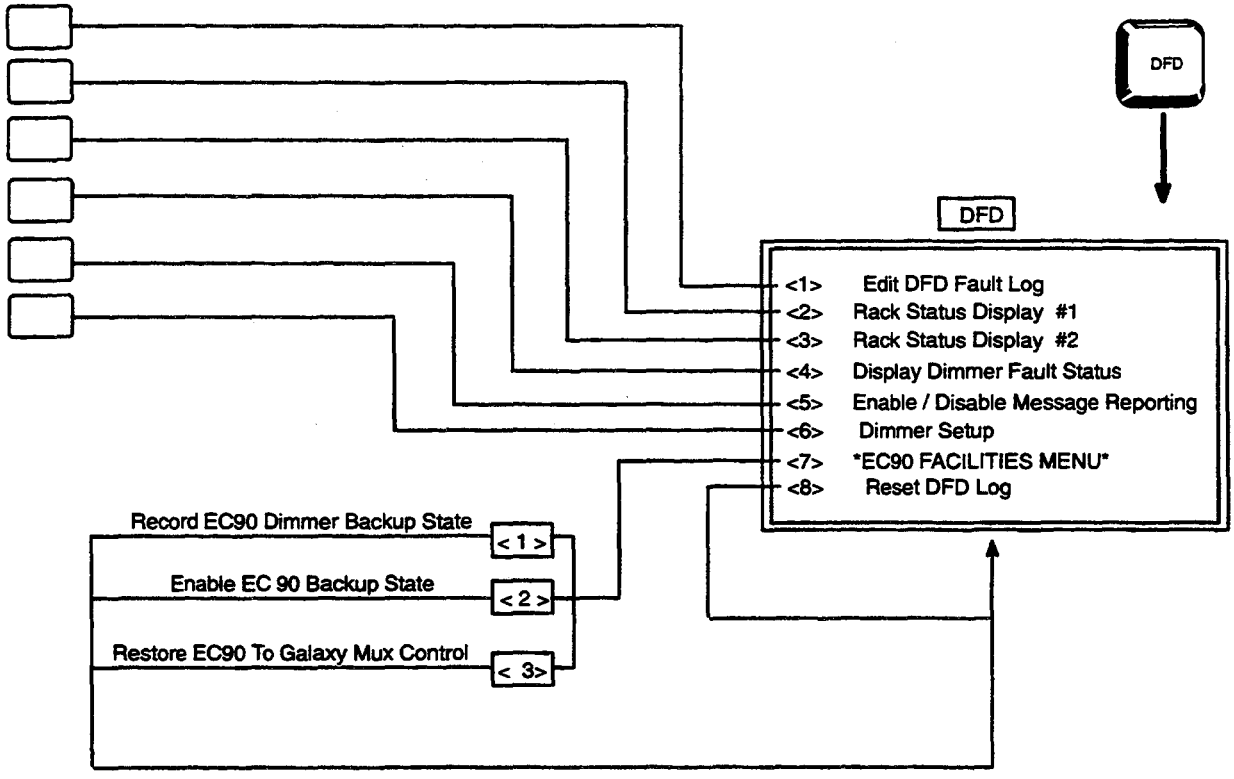
This function is covered in section 6.3 ADVANCED PLAYBACK

11. 7. MOTION MENU

This function is covered in section 10 MOTION CONTROL PANEL

11. 8. DFD FUNCTION

Fig. 11.11 DFD Menu



The DFD (Dimmer Fault Detection) menu allows you to setup, monitor and edit various parameters concerned with the Strand Lighting DFD system, which is available when the Galaxy is linked to EC90 MD+ dimmer units, or to specially constructed PIP dimmers.

The DFD system will provide warnings on the VDU mimic whenever a dimmer is not operating correctly. Additionally, selected options of EC90 MD+ dimmers may be set up from the Galaxy.

11. 8. 1. EDIT DFD FAULT LOG

Whenever a dimmer fault is reported it will be entered into the fault log. if the fault has been reported from EC90, the section under TEXT shows the relevant RACK:CRATE: DIMMER ID allowing you to find the problem dimmer easily.

REFERENCES	DIMMER FAULT LOG	D###	ACTION	TEXT
001	NO LOAD CURRENT–DIMMER	OO50		01 : 1 : 05
002	NO LOAD CURRENT–DIMMER	OO51		01 : 1 : 06
003	NO LOAD CURRENT–DIMMER	OO52		01 : 1 : 07
004	NO LOAD CURRENT–DIMMER	OO53		01 : 1 : 08
005	NO LOAD CURRENT–DIMMER	OO54		01 : 1 : 09
006	NO LOAD CURRENT–DIMMER	OO55		01 : 1 : 10
007	NO LOAD CURRENT–DIMMER	OO56		01 : 1 : 11
008	DFD FAULT CLEAR –DIMMER	OO57		01 : 1 : 12
009	DFD FAULT CLEAR – DIMMER	OO58		01 : 2: 01
010	DFD FAULT CLEAR –DIMMER	OO59		01 : 2 : 02
etc				

NO LOAD CURRENT _ DIMMER 0050 : 01 : 1 : 05

The  and  buttons allow you to select an individual entry. The text may then be altered. As ENTER is pressed, the action field will change to ACCEPT. Alternatively, pressing F1 will select an action of DELETE which will remove the log entry when ENTER is pressed.

11. 8. 2. RACK STATUS DISPLAY #1

Display 1 shows the total number of dimmers ENABLED in each rack, together with the first and last dimmer numbers and rack type. Line status indicates either ON–LINE (responding) or OFF LINE (disconnected or turned off).

RACK STATUS

RACK No.	— DIMMERS — – FIRST	LAST	TOTAL	RACK TYPE	LINE STATUS	ACTION	COMMS STATUS Nak	Rxm	Hdr	Msg
01	0001	0024	024	02	ON–LINE	04	000	000	000	000
02	0025	0048	024	00	OFF–LINE	06	000	000	000	000
03	0049	0100	032	EC90	ON–LINE	05	000	000	000	000
04	0050	1000	032	EC90	ON–LINE	02	000	000	000	000
05	0001	0024	024	02	ON–LINE	04	000	000	000	000
06	0048	0101	032	EC90	ON–LINE	05	000	000	000	000
07	0051	1001	032	EC90	ON–LINE	02	000	000	000	000
08	0061	0997	032	EC90	ON–LINE	04	000	000	000	000

DFD: MAX RACK : 16

The ACTION and COMMS STATUS fields are provided for service engineering purposes.

The COMMAND line allows you to specify the maximum number of dimmer racks within the DFD system.

11. 8. 3. RACK STATUS DISPLAY #2

Display 2 shows the additional information for each rack.

Note:– The majority of this information is only available from EC90 racks.

RACK STATUS – 2

RACK No.	RACK TYPE	MUX A	MUX B	MUX FAIL TIME	MUX FAIL STATE	VOLTAGE – PHASE – CURRENT R	S	T	R	S	T	FAN STATE 1	2
01	11	FAIL											
02	12	OK											
03	EC90	OK	OK	31	01	241	243	245	120	154	100	FAIL	OK
04	EC90	OK	FAIL	31	00	241	243	245	230	180	090	OK	FAIL
05	EC90	OK	OK	31	05	241	243	245	154	100	120	OK	OK
06	13	FAIL											
07	01	OK											
08	02	OK											
09	03	FAIL											
10	04	OK											
11	05	FAIL											
12	EC90	OK	FAIL	31	02	241	243	245	120	154	100	OK	OK
13	EC90	OK	FAIL	31	05	241	243	245	230	180	090	OK	OK
14	EC90	FAIL	FAIL	31	00	241	243	245	154	100	120	OK	OK
15	05	OK											
16	05	OK											

DFD: MUX FAIL STATE [TIME]:

The COMMAND line allows you to change the Backup state, and fade time, to be used by each rack in the event of loss of multiplexed dimmer control.

11. 8. 4. DISPLAY DIMMER FAULT STATUS

This will show a list of any dimmers which are currently being reported as faulty.

D###	DIMMER FAULT	CHANNEL
0013	NO OUTPUT VOLTS	013
0029	NO LOAD CURRENT	014
0192	EXCESS DC	912

11. 8. 5. ENABLE / DISABLE MESSAGE REPORTING

This allows you to ENABLE or DISABLE the showing of VDU mimic error messages for dimmer fault reports.

DFD MESSAGE REPORTING [ENABLED]

<ENTER> will toggle between the ENABLED and DISABLED.

Note:– Reported dimmer faults will always be visible on the FAULT STATUS display and will be entered into the fault log.

11. 8. 6. DIMMER SETUP

This display shows the dimmer type, dimmer law and dimmer response in a similar manner to the Galaxy dimmer–to–channel patch screen. The dimmer number is displayed in a different colour to the parameters for that dimmer. The first parameter is dimmer type, the second parameter is dimmer law and the third parameter is response speed.

If multiple dimmers in EC90 are patched to the same channel AND a certain parameter in the display is NOT the same in all dimmers patched to that channel, that parameter will be displayed by asterisks '*'.

The COMMAND line will identify the dimmer's parameters in a text format and allow you to check the parameters of a particular dimmer by typing its number on a blank line (similar to the current patch arrangement). You can change the current law by pressing the **F1** function key, and change response using the **F2** function key. Press <ENTER> when the desired law and speed are selected.

DIMMER SETUP

0001 16MD+ SQ / Fs	0021 16MD+ SQ / Fs /D	0041 16MD+ SQ / Fs	0061 16MD+ SQ / Fs
0002 16MD+ SQ / Fs /D	0022 16MD+ SQ / Fs /D	0042 16MD+ SQ / Fs	0062 16MD+ SQ / Fs
0003 16MD+ SQ / Fs	0023 16MD+ SQ / Fs /D	0043 16MD+ SQ / Fs	0063 16MD+ SQ / Fs
0004 16MD+ SQ / Fs	0024 16MD+ SQ / Fs /D	0044 16MD+ SQ / Fs	0064 16MD+ SQ / Fs
0005 16MD+ SQ / Fs	0025 16MD+ SQ / Fs	0045 16MD+ SQ / Fs	0065 16MD+ SQ / Fs
0006 16MD+ SQ / Fs /D	0026 16MD+ SQ / Fs	0046 16MD+ SQ / SL	0066 16MD+ SQ / Fs
0007 16MD+ SQ / Fs	0027 16MD+ SQ / Fs	0047 16MD+ SQ / SL	0067 16MD+ SQ / Fs
0008 16MD+ SQ / Fs /D	0028 16MD+ SQ / Fs	0048 16MD+ SQ / N	0068 16MD+ SQ / Fs
0009 16MD+ SQ / Fs	0029 16MD+ SQ / Fs	0049 16MD+ SQ / SL	0069 16MD+ SQ / Fs
0010 16MD+ SQ / Fs	0030 16MD+ SQ / Fs	0050 16MD+ SQ / N /D	0070 16MD+ SQ / Fs
0011 16MD+ SQ / Fs	0031 16MD+ SQ / Fs	0051 16MD+ SQ / N /D	0071 16MD+ SQ / Fs
0012 16MD+ SQ / Fs	0032 16MD+ SQ / Fs	0052 16MD+ SQ / Fs	0072 16MD+ SQ / Fs
0013 16MD+ SQ / Fs /D	0033 16MD+ SQ / Fs	0053 16MD+ SQ / Fs	0073 16MD+ SQ / Fs
0014 16MD+ SQ / Fs	0034 16MD+ SQ / Fs	0054 16MD+ SQ / Fs	0074 16MD+ SQ / Fs
0015 16MD+ SQ / Fs	0035 16MD+ SQ / Fs	0055 16MD+ SQ / Fs	0075 16MD+ SQ / Fs
0016 16MD+ SQ / Fs	0036 16MD+ SQ / Fs	0056 16MD+ SQ / Fs	0076 16MD+ SQ / Fs
0017 16MD+ SQ / Fs /D	0037 16MD+ SQ / Fs	0057 16MD+ SQ / Fs	0077 16MD+ SQ / Fs
0018 16MD+ SQ / Fs /D	0038 16MD+ SQ / Fs	0058 16MD+ SQ / Fs	0078 16MD+ SQ / Fs
0019 16MD+ SQ / Fs /D	0039 16MD+ SQ / Fs	0059 16MD+ SQ / Fs	0079 16MD+ SQ / Fs
0020 16MD+ SQ / Fs	0040 16MD+ SQ / Fs	0060 16MD+ SQ / Fs	0080 16MD+ SQ / Fs

```
0001: Type 16MD+, <Square Law>, <Fast>
```

By pressing F3 <ENTER> you can disable fault reporting from an individual dimmer. Dimmers so disabled will show with an additional '/D'

Pressing F3 <ENTER> again will re–enable fault reporting.

11. 8. 7. EC90 FACILITIES MENU

Record EC90 Dimmer Backup State

This entry will allow you to record the current lighting state as one of the 32 backup states in EC90. A valid number between 1 and 32 must be entered followed by a space and the required fade up time for the state. Each rack will then be told to record the state. If the menu command is repeated before all the EC90 racks have finished, or while a previous record command is taking place, an error message will be displayed and NO record action will have taken place.

Enable EC90 Backup State

This option allows you to recall the selected backup state as the new lighting state in EC90. This allows previewing of backup states, but only on stage. A valid number between 1 and 32 must be entered and then each rack will be told to playback the cue. If the menu command is repeated before all the EC90 racks have finished, or while a record command is taking place, an error message will be displayed and NO action will have taken place.

Restore EC90 To Galaxy Mux Control

This option will allow you to restore the control by Galaxy 3 of the EC90 rack after a recall backup command or if EC90 has recalled a backup state locally. If the menu command is repeated before all the EC90 racks have finished, or while a record command is taking place, an error message will be displayed and NO action will have taken place.

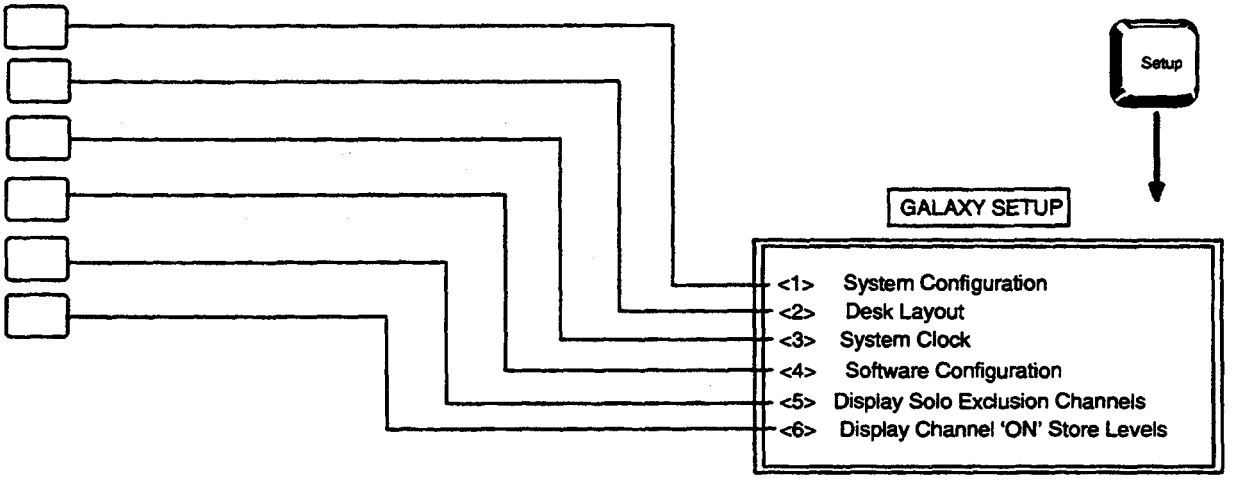
> **Note:–** If lots of faults are occurring, actions could take several seconds to complete. Flashing error messages will indicate that an action is in progress. This message will be cleared when the action has completed.

11. 8. 8. RESET DFD FAULT LOG

This clears all fault log entries.

11. 9. SETUP FUNCTION

Fig. 11.12 Setup Menu



The SETUP menu will allow you to configure and customise Galaxy to your own requirements and also to check the settings of various options.

11. 9. 1. SYSTEM CONFIGURATION

Page 1

MEMORY

Fitted : 256KBYTES
Selected : 256KBYTES
Status : CONNECTED
Power Up Mode : NORMAL

SCREENS

Desk # 1 : 2
Desk # 2 : 1
Auxiliary # 1 : ADVANCED PLAYBACK
Auxiliary # 2 : NOT USED
Format : FLOATING
Format Limit : ENABLED

SYSTEM

DFD : FITTED
DFD Screen Errors : ENABLED
Riggers / Designers : ENABLED
Geographic Mimic : ENABLED
Total Dimmers : 0768
Highest Channel # # # : 768
Custom Personality : FITTED

DISC

Status : CONNECTED
Memory Backup : ENABLED
Power Up Mode : NORMAL

PRINTER

Type : VT100
Data Format : 7 bit + odd +1
Status : CONNECTED
Format : COMPRESSED
Pagelength : A4

SOFT OPTIONS

C.C Solo Mode : LATCHED
Studio PB Masters : ENABLED
Record Updates on Levels : DISABLED
Gangload : [A–L]
P. M Mastering : SEPERATE AL, MV
P. M Inhibit Masters : NORMAL
P. M Channel Display : ENABLED
Date Format : [ddmmyy]
Language : ENGLISH

Page 2

MOTION / COLOUR OPTIONS

Desk # 1 Record O/P	;	LEVELS + COLOURS
Desk # 2 Record O/P	;	LEVELS ONLY
Default Record Time	;	010
Default Go Time	;	002
Protocol	;	MRL
Total fixtures	;	012

Parameters can be selected by using  or  to move around the screen to reverse highlight each field. Pressing <ENTER> will cycle through the various options of these fields.

Fields shown in yellow characters cannot be selected or altered within this display. They indicate options selected by fitting specific system hardware, or by operating configuration switches.

MEMORY (options)

Fitted	: 256KBYTES
Selected	: 256KBYTES
Status	: CONNECTED
Power Up Mode	: NORMAL

Power up Mode specifies what channel levels are set following system power up.

BLACKOUT – All channels off.

RESTORE – Channel level present when the system was turned off.

MEMORY NN – Channel levels are recorded in a memory selectable from 999.9, 999, 900, 800, 1, or 0.1.

DISC (options)

Status	: CONNECTED
Memory Backup	: ENABLED
Power Up Mode	: NORMAL

Memory Backup – Save to memory backup ENABLED or DISABLED

Power Up Mode – System can be powered up with or without AUTODUMP. (NORMAL) is without.

SCREENS (options)

```
   Desk # 1 : 2
   Desk # 2 : 1
Auxiliary # 1 : ADVANCED PLAYBACK
Auxiliary # 2 : NOT USED
     Format : FLOATING
Format Limit : ENABLED
```

Auxiliary #1, Auxiliary # 2 specify what display is shown on the Auxiliary VDU(s).

NOT USED– Auxiliary display not used.

DESIGNERS (LEVELS) – An output levels display showing Designers controls commands.

DESIGNERS (COLOUR) – An output colour display showing Designers control commands.

DIMMER FAULTS – The DFD mimic display.

MEMORY LIST – The MEMORY LIST mimic display, but with a white cursor showing the last memory to be made 'Live' and a blue cursor showing the last memory transferred to a Preset store.

TEXT – The TEXT mimic display for the last memory to be made 'Live'

ADVANCED PLAYBACK – A display showing Advanced playback information.

SYSTEM SOFTWARE – The software configuration display. (setup option 4).

Format specifies the way channel levels are displayed.

FIXED – All channels within the patch are shown in fixed positions on the VDU(s).

FLOATING – Channels appear on the VDU(s) as they are used.

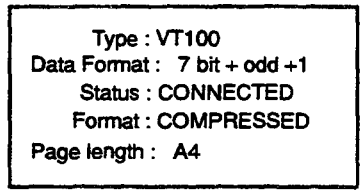
VARIABLE – all channels, within the patch, are shown in fixed positions on the VDU(s). Channel numbers show in blue until the channels are used.

EXTENDED – As for variable format, but spaces are left in the display for channels not in the path.

Note:– The system must be reset (turned off, then on) following a change to the format.

Format Limit specifies whether channels not shown in the current output VDU mimic display may be accessed. When ENABLED it limits access to only channels displayed.

PRINTER (options)



Type – Select between the following :– ASCII, VT100, EPSON FX86c/FX800, EPSON FX80, IBM PROPRINT II, HP PCL3.

Data Format – Specifies number of data bits, parity, number of stop bits, between the following:–
7 bit + Odd +1
8 bit + None +1
8 bit + Odd +1
8 bit + Even +1

Format – This specifies the format for channel level printouts

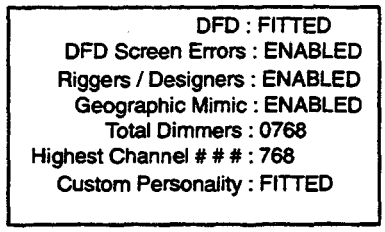
COMPRESSED – Printout only shows channels which are either at levels above zero, or which have changed in level.

ACTIVE – Not implemented.

EXTENDED – Prints all channels existing in the current patch.

Page Length – Allows selection between the following:–
A4 Sheet
A4 Tractor
12 Inch
11 Inch

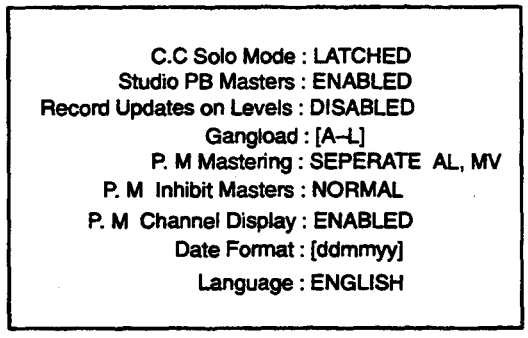
SYSTEM (options)



DFD Screen Errors – A repeat of DFD option 5 (refer to DFD section).

Riggers / Designers – Enables / disables either riggers or designers controls. Can be locked off by an optional keyswitch.

SOFTWARE OPTIONS



CC Solo Mode – Selects whether the solo function is LATCHED on or not. NORMAL is a momentary action setting.

Studio PB Masters – Selects whether the Master Faders are allocated to operate over the Output store (left) and the Preset store of a Studio Playback (right). NORMAL inhibits this.

Record Updates on Levels – ENABLE allows an automatic update in the ON store levels, whenever a record action takes place.

Gangload – Selects Preset master gangload operation to run between A–L or A–V

PM Mastering – Assigns Preset Master panels to their Master Faders as follows:–

SEPARATE A–L, M–V each panel separate.
PNL #1–> [A–V] panel 1 controls A–V
PNL #2–> [A–V] panel 2 controls A–V
A–L, M–V LoTP both faders operate on 'lowest takes precedence'.

PM inhibit Masters – Select if Preset Master Faders, when set to 'inhibit' mode, operate 'normally' (levels rising with fader position) or with an inverted sense (levels falling with rising fader position).

PM Channel Display – Selects whether Preset Masters displays indicate channel control operations into the Preset stores.

Date Format – Specifies date format as used on printouts as follows:–

dd mm yy	Day Month Year
mm dd yy	Month Day Year
yy mm dd	Year Month Day

MOTION / COLOUR OPTIONS

Desk # 1 Record O/P	; LEVELS + COLOURS
Desk # 2 Record O/P	; LEVELS ONLY
Default Record Time	; 010
Default Go Time	; 002
Protocol	; MRL
Total fixtures	; 012

Desk # 1 Record O/P, Desk # 2 O/P – specify what information is recorded when the Record button is used on each desk:–

LEVELS ONLY	
LEVELS + COLOUR	Colour change data.
LEVELS + POSITION	Full motion data.

Default Record Time – Specifies, as a default, the time used for all motion memory record actions.

Default GO time – Specifies, as a default, the time used for motion GO commands.

11. 9. 2. DESK LAYOUT

INFORMATION ONLY SCREEN

This shows the Main and Auxiliary pods connected to the system, and the panels they contain, an example screen is shown below.

```
DESK #1      MAIN POD      REF. 1780 SOFTWARE VERSION C GALAXY NOVA
      ADVANCED PLAYBACK    X        MEMORY & OUTPUT
      ALPHA-KEYBOARD                PRESET MASTERS 1
      EFFECTS                         CHANNEL CONTROL
      MOTION CONTROL 1

DESK #1      AUX POD

      PRESET MASTERS 2                CHANNEL CONTROL 2

DESK #2      MAIN POD      NOT CONNECTED
```

Note:- A **Group Masters** panel is considered as an extension to a **Channel Control** and is not shown.

11. 9. 3. SYSTEM CLOCK

This display allows you to set and adjust the system clock.

```
DATE [ dd / mm / yy ]
TIME  [ hh : mm : ss ]
CALIBRATE  + / -
```

To alter the date or time, move the cursor to the appropriate line, type in the new date/time on the command line and press <ENTER>.

If the clock is suspected of running fast or slow, move the cursor to CALIBRATE and enter + (to speed up), or – (to slow down), followed by <ENTER>.

Note:- Calibration is a matter of trial and error, but should not normally be necessary

11. 9. 4. SOFTWARE CONFIGURATION

INFORMATION ONLY SCREEN. This will inform you of the current software versions of the various processor cards installed within your Galaxy system. APC=Advanced Processor Card MCP=Multiplex Channel Processor Card. Information on this screen is useful if problems should occur and should be relayed back to the service department if the need arises.

IDENT	APPLICATION		SOFTWARE VERSION	OPTIONS
Master APC	Master		GLXY vC1 C1 Release 9212 21	
COP	Serial Comms		COP vC1 C1 Release 9212 21	
Slave APC	0 Effects		FX vC1 C1 Release 9212 21	
Slave APC	1 Motion		MOT vC1 C1 Release 9212 21	
Slave APC	2 Presets M–V		PRST vC1 C1 Release 9212 21	
Slave APC	3 Not Fitted			
Slave APC	4 Not Fitted			
Slave APC	5 Not Fitted			
MCP	0 D54 / DMX512	Mux 1 – 384		B2 000
MCP	1 D54	Mux 385 – 768		B2 000
MCP	2 D54	Mux 769 – 1152		B2 000
MCP	3 Not Fitted			

11. 9. 5. DISPLAY SOLO EXCLUSION CHANNELS

INFORMATION ONLY SCREEN. This shows those channels recorded for exclusion from the **Channel Control** function, in a similar nature to the Allocate Non–Dim Channels display.

11. 9. 6. DISPLAY CHANNEL 'ON' STORE LEVELS

INFORMATION ONLY SCREEN. This shows the level recorded for each channel in use with the **Channel Control** ON facility, as a numerical list.

12. Auxiliary (Back–up system)

12. 1. INTRODUCTION

The Galaxy Memory Backup system is a self contained memory lighting control, intended for use in the event of the failure of the main system. Its control facilities are simple and very similar to those on Galaxy, so that transferring from one system to the other is easy. The system may be used to recall previously recorded memories or to prepare new memories. These may be transferred from or to the Galaxy system. The Back–up system, while it physically appears as one unit, should be considered as two separate systems. The first is a disc storage system which is associated with the main Galaxy system; the second is a Back–up memory system which has access to the disc system for memory retrieval and storage.

The Back–up system is linked to the main Galaxy system and in normal operation (i.e. with the Back–up system powered–up but not in use), the current state of the Galaxy output store is duplicated. The system will not, however, drive the dimmers. Should the main system fail, the current lighting may be retained simply by bringing the Back–up system into use.

12. 2. SWITCHING ON

The Back–up system is switched On by operating the red rocker switch located on the right hand side of the Back–up desk, underneath the control desk surface. When switched on the initial state of the back–up system is as follows:

1) All channels off.

2) BACK–UP key on the disc section of the control panel is not illuminated. The keypad display shows a single decimal point, indicating that the Back–up system is ready, but not 'In Use'.

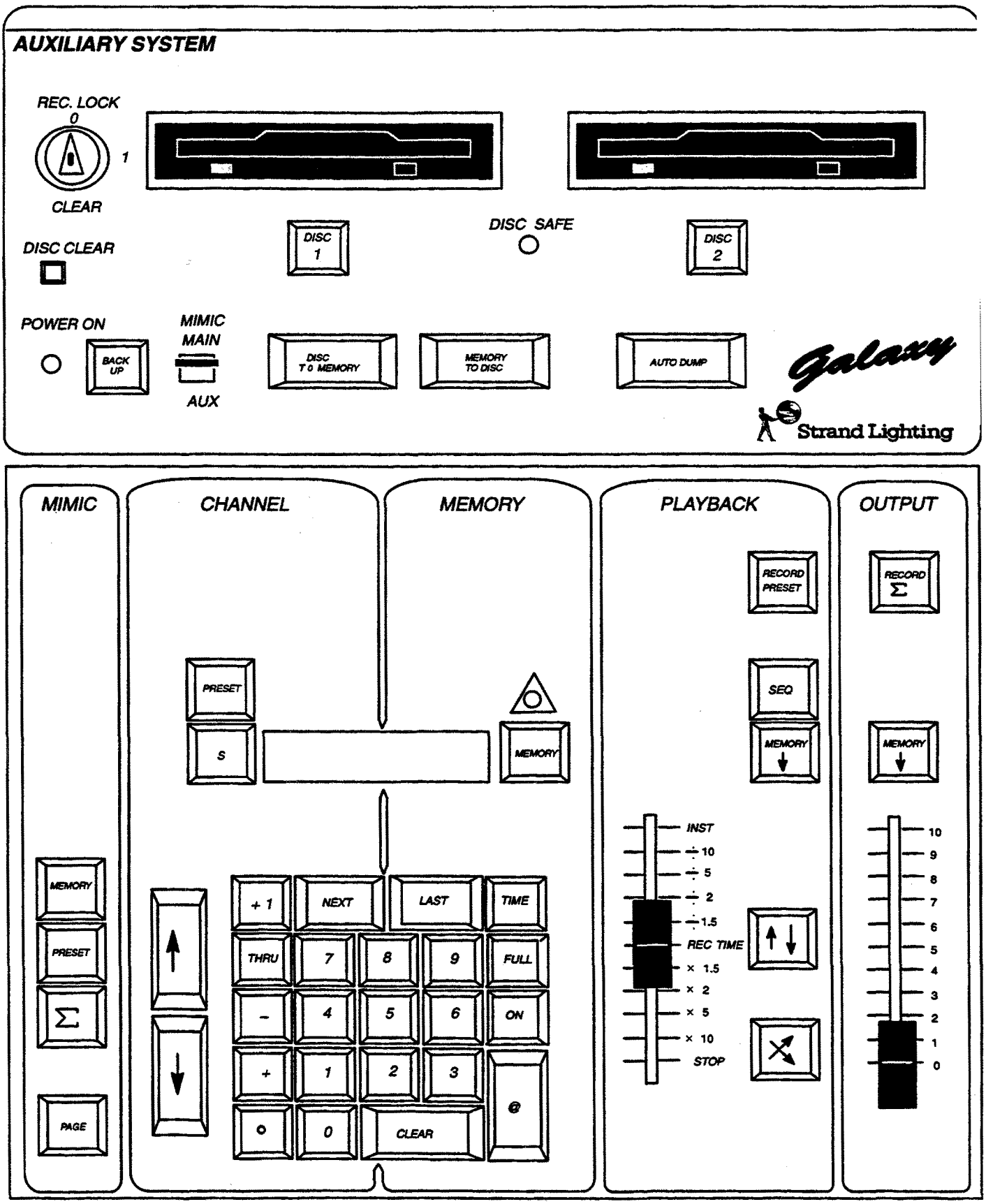
3) VDU monitor showing either Galaxy mimic display or 'BACKUP LEVELS' display, depending on the position of the Mimic switch on the front panel.

12. 3. CONTROLS

The control panel is reduced to the minimum necessary for simple operation. The panel consists of six sections: OUTPUT, PLAYBACK, MEMORY, CHANNEL, MIMIC and DISC CONTROL. The DISC facility is principally for use with the main Galaxy system.

Note:– The system does not have its own lighting memory but uses the disc as its memory.

Fig. 12.1 Backup (Auxiliary) System



12. 4. DISC SYSTEM

The disc system may be controlled by either the main Galaxy system, or the Back–up system.

When the Back–up is off line (i.e. the red BACK–UP key is not illuminated) the disc section is operated as a peripheral to the main Galaxy console. This permits memories created on Galaxy to be stored on this disc system, ready for retrieval when the disc is switched to being controlled by the Back–up.

12. 4. 1. DISCS

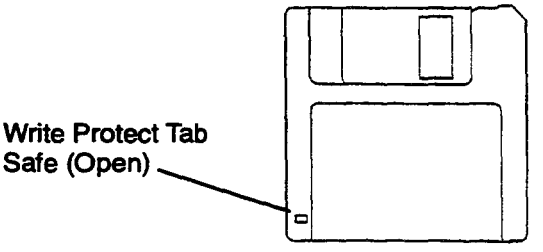
Disc Specification

Ensure that only good quality 3.5" Double Sided Double Density discs are used. Poor quality discs may result in excessive head wear or premature loss of data.

Disc Care

Because of the delicate nature of the medium, care is necessary to ensure that discs are not damaged when handling. To guard against premature disc failure, and excessive disc errors, the following precautions should be taken:–

- Return the disc to its plastic storage enveloped and storage box immediately it is removed from the drive mechanism.
- Never pull back the protective metal cover on the disc.
- Never touch the disc surface. This will permanently damage the surface of the media and result in complete loss of data on the disc.
- Keep discs away from food , liquids, grime or cigarette smoke.
- Do not expose the discs to strong magnetic fields, e.g. by laying them on top of a loudspeaker or a T.V. monitor.
- Do not subject the discs to heat or direct sunlight.
- If the information stored on the disc is particularly valuable, or the disc is likely to have heavy usage, record a second copy as a backup.
- Ensure that the drive mechanism is regularly maintained, and is not subject to dirt, dust or other contaminants.
- Ensure that discs, once recorded, have the write protect tab set to 'safe'.



Loading a Disc

Discs should be loaded into the drive mechanism with the label facing upwards, and the sliding metal cover facing the rear of the drive. Push the disc all the way in until it 'clicks' into place. The disc may now be used. Always remove the disc from the drive when switching the system On or Off. NEVER SWITCH THE SYSTEM OFF WHILE A DISC ACTION IS IN PROGRESS, i.e. while the LED on the front of the drive is illuminated, as this may cause data corruption. Similarly, never eject the disc while it is being accessed.

To remove a disc, first make sure the LED on the front of the drive is not illuminated. Push the eject button IN until the disc pops out a short way. The disc may now be removed.

12. 4. 2. DISC SYSTEM CONTROLS

Keyswitch

The keyswitch acts as a 'Record Lock' for the disc system. It is also used, together with the DISC CLEAR key underneath., to initiate a 'disc clear' operation.

When the keyswitch is in the '0' position, no information may be recorded onto disc, although it may be replayed from disc.

When the keyswitch is in the '1' position, information may be recorded to, or replayed, from disc.

Disc Clear

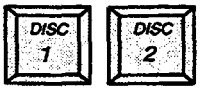
The DISC CLEAR operation deletes all information from a disc. It also writes, and checks, a 'Format' onto disc.

To start a DISC CLEAR operation – Hold keyswitch in the CLEAR position 

press the DISC CLEAR key 

Note:– A Disc Clear operation takes approximately 2 minutes. A warning message is displayed on the main system VDUs during a Disc Clear operation.
A Disc Clear operation must be carried out on a new floppy disc before it can be used.

Disc 1 Disc 2



These keys select, respectively, the disc drive under which they are positioned, and illuminate to show which is selected.

Disc to Memory

This key is used in conjunction with the Memory Number keypad on the Memory and Output panel on the Galaxy:–

Select the memory number required for transfer on the keypad and press the 'DISC TO MEMORY' key. The transfer will take place.

- If a range of memories is specified using the 'THRU' key, then all memories in the specified range that are on the disc will be ..... transferred.
- If a memory exists on the disc and in the Galaxy Memory, then that memory in the Galaxy will be overwritten.
- If a memory exists in the Galaxy, but not on the disc, then that memory will remain unchanged.
- If a memory exists on the disc, but not in the Galaxy, then a new memory number will be created in the Galaxy and the contents transferred from disc.

For these reasons it is best to clear memory in the Galaxy before transferring a large block of memories from disc, otherwise unwanted memories may 'pop' into a playback sequence during a performance.

Memory to Disc

This key is used in a similar manner as DISC TO MEMORY and the conditions that apply to that facility will similarly apply here also.

Autodump 

The Autodump Facility causes the system to create automatically, on disc, a copy of each Galaxy memory as it is recorded. The disc will then always be completely up to date and make a separate Memory–to Disc action unnecessary. The Autodump facility does not function when the Back–up system is in use.

The Autodump facility may be selected by pressing the AUTODUMP key. The key will light, and remain illuminated until pushed again.

When AUTODUMP is turned on, a copy of the entire System Path (including system text and profiles) will be made on the disc.

The Disc system controls are duplicated within the Disc Control facilities on the Alpha–keyboard.

12. 5. BACK–UP OPERATION 

When this key is NOT illuminated, the back–up system is not operational, but the contents of the Galaxy 'S' store and current patch information are being continually copied into the Back–up system output store. This 'standby' state is indicated on the Back–up control keypad display by the illumination of a single decimal point.

Pressing the BACK–UP key causes it to illuminate, and puts the Back–up system into use. The decimal point in the display window is extinguished and the 'S' key lights. Communication of the Back–up system and the disc drive with the main Galaxy system has now been cut.

The appropriate error message will appear on the Galaxy VDU displays (indicating that it has lost communication with the disc drive). The Back–up system is now outputting dimmer control signals corresponding to the output store state of the Galaxy which was current immediately before the BACK–UP key was operated.

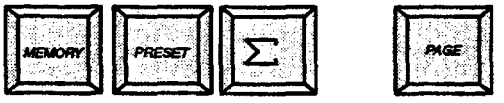
If the Galaxy system is in use when the BACK–UP key is operated and the Back–up Grand Master is at full, the Back–up system will immediately duplicate the current Galaxy lighting on its own outputs. The change over from Galaxy to Backup is via a relay, so only one source of the dimmer control signal can drive the dimmers at once.

If the Galaxy system has not been switched on, or has failed before it has passed the patch information to the Back–up system, the message 'DOWNLOAD SYSTEM PATCH FROM DISC' will appear on the VDU when the Back–up system is brought into use. Alternatively if part of the patch information has been received by the Auxiliary system, the message UPDATE SYSTEM PATCH FROM DISC will be displayed. If required, the patch information may be obtained from the disc by pressing the DISC TO MEMORY key. Make sure that the BACK–UP key is illuminated before performing this action.

12. 5. 1. THE MIMIC DISPLAY

The Back–up system does not usually have its own VDU monitor, but shares one of those in service with the main system. You may switch between the two displays my means of a switch on the Disc Control section of the panel. Because only a keypad display is provided on the Back–up console, the Mimic display is more complex than on the Galaxy main unit. The main part of the screen shows 200 channels, while at the bottom are details of the selected channel(s), the selected memory, the Preset Store contents, memories which are fading, and active and preset fade times. On the right of the screen is the number of the last recorded memory and a fade progress display.

12. 6. SCREEN DISPLAYS



The contents of the Auxiliary displays are determined by four keys on the mimic section of the control panel. Three of these keys select displays for the following:– System Output (Σ), Preset Store contents (PRESET) and the contents of the selected memory (MEMORY). As the VDU screen can only display 200 channels at a time, those above 200 may be displayed by pressing the PAGE key.

When the Back–up is not 'In Use', the PAGE key is the only key on the Back–up section of the panel which remains operative. This permits you to scroll through the 'BACK–UP LEVELS', and verify them against the Galaxy system.

The format for all four mimic displays is identical, only the heading and content being different.

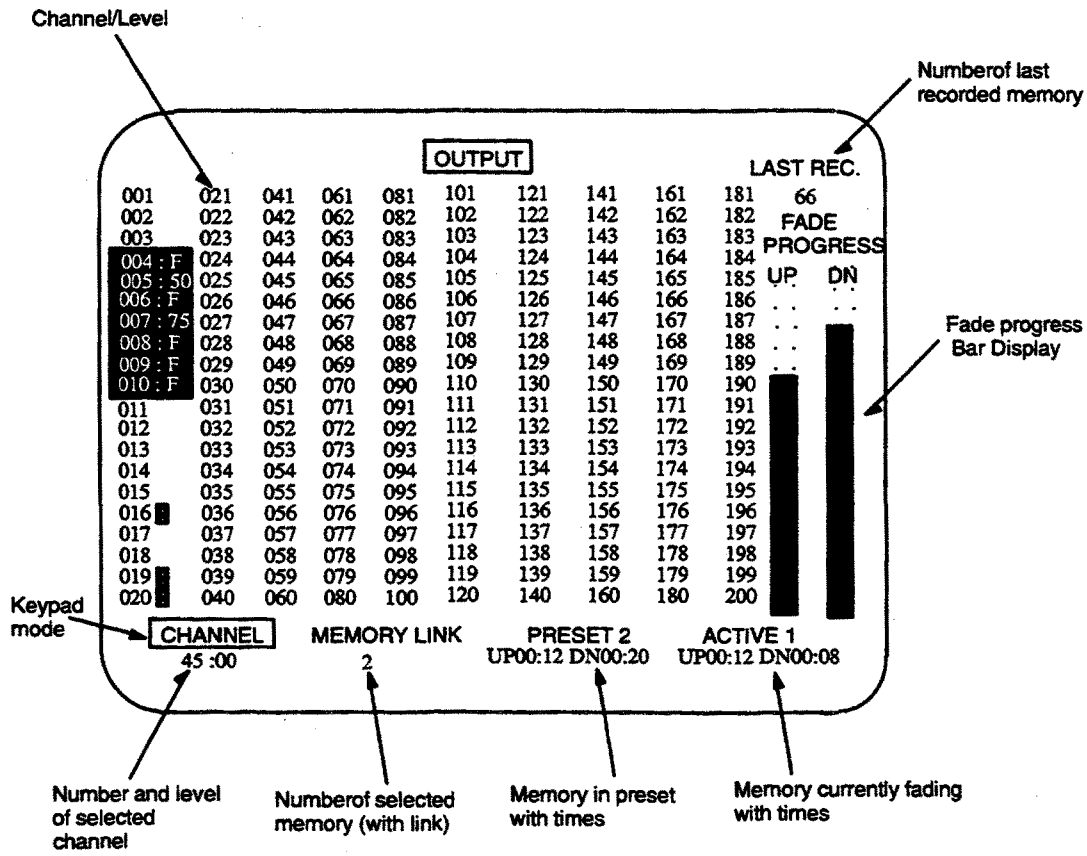
If either of the display selection keys are held down, an additional line of information appears under the Keypad mode section. This additional line gives memory information.

The 'Σ' key produces details of the last memory recalled, whether to Output or Preset, PRESET gives the last memory recalled to PRESET, and MEM the currently selected memory number. In all cases the information is the same, i.e. memory number, recorded link, recorded fade times and the first 30 characters of recorded text.

Example:
MEM 431.7 LINK 397.5 UP 00.05 DN 00.10 OPENING LIGHT,

Channels currently under control of the **Channel Control** are shown in reverse video. Those not selected, and those at zero level show as dimmed channel numbers.

Fig. 12.2 Auxiliary Display



This facility may be used, together with Record Preset for 'Blind' Plotting or 'Blind' Modifiction of previously recorded memories.

12. 6. 1. CHANNEL NUMBER SELECTION

The keypad has keys for numbers 0 to 9 and, in addition, NEXT, LAST and '.' (decimal point). Numbers are entered with the most significant digit first, there is no need to enter leading zeros as these are ignored by the system and will not be displayed. Any channel number can be entered, but if this number is invalid the selection will be cleared on attempting to take control. The keypad also may be cleared by using the CLEAR key.

NEXT increments the selected channel number to the next higher channel in the system. LAST steps down the number to the next lower one.

12. 6. 2. SELECTION AND CONTROL OF CHANNEL GROUPS

The channels constituting a group may be selected individually by the following procedure:

1.) Enter first channel, e.g. 26.
2.) Enter '+'.
3.) Enter second channel, e.g. 183.
4.) Enter '+'.
5.) Enter third channel, e.g. 114

Channels 26, 114 and 183 would then be controlled together as one channel. Similarly, a channel may be removed from control as follows:–

6.) Enter '–'.
7.) Enter channel, e.g. 114.

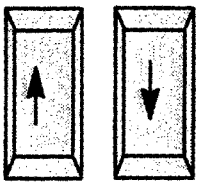
If all three channels are the same level when taken under control they remain together when the UP or DOWN keys are operated. If, however, the channels were at different levels, an equal amount will be added or subtracted from each channel as they fade up or down.

The UP key may be pressed until one–by–one all channels reach full. Pressing DOWN restores the original balance, while further downward movement reduces the levels until one–by–one the channels reach zero.

The THRU key may be used to call up a continuous group of channel numbers for control. It may also be used to remove a sequence of channels from control by prefixing the first number with minus '–'.

12. 6. 3. TAKING CONTROL OF CHANNELS

Once a valid channel entry has been made,the selected channel(s) may be taken under control by either the UP DOWN fade keys or the @ or ON key.

12. 6. 4. UP, DOWN CHANNEL FADE 

When either UP or DOWN key is operated, the selected channels are taken under control and fade up or down, as appropriate, at a fixed rate, taking approximately seven seconds to fade from zero to full.

12. 6. 5. THE @ KEY

Selected channel(s) may be set to an absolute level or modified to their current level by use of the @ key. When pressed this key lights to warn you that the next entry will be interpreted as a level.

The next number pressed will be the intensity in steps of 10%, e.g. 8 @ 7 will set channel 8 to 70%. Should more accuracy be required, the UP DOWN keys may be used to fine tune, or the level may be entered in 1% steps by using the decimal point: e.g. 8 @ 7.2 will set channel 8 to 72%.

To set channels to FULL, press @ F

12. 6. 6. THE ON KEY.

The ON facility provides a convenient method of rapidly setting channels to a preferred level. With a valid channel selection, pressing the ON key turns the channel or channels ON, while a second operation turns the channels OFF. The ON key will operate on individual channels or groups. The level to which channels are set is initially always 70%. To change this level follow the procedure below:–

1.) Select a Channel.

2.) Press 'ON' (The channel will now be set to 70%).

3.) Use the Up and Down keys, or the '@' key to Adjust the channel to the preferred level.

4.) Press ON again. (The channel will be turned OFF).

The revised level will then be used as the preferred level for any subsequent operation of the ON key.

Note:– The ON level is reset to 70% each time the BACKUP key is pressed.

Once the level of a channel has been set (by means of the @ ,ON, or UP, DOWN keys) the next number entry will select a new channel. There is therefore, no need to press CLEAR between successive entries.

12. 6. 7. MODIFYING THE LEVEL OF A CHANNEL ALREADY ON

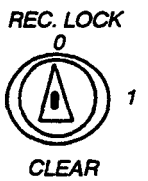
This procedure is identical to that outlined above. The channel is simply keyed in and the UP, DOWN, @ and ON keys used to adjust it.

12. 7. RECORDING

Once a lighting state has been set up to your satisfaction, it may be recorded. Please be aware that the Backup system 'Memory' is actually the disc.

It is important, at this time, to know if previously recorded memories are still required – whether they may be erased or should be preserved.

12. 7. 1. RECORD LOCK

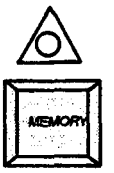


The keyswitch acts as a Record Lock when the system is in use. When the switch is in the '0' position, the Record keys are inoperative.

When recording memories using the Back–up system, the keyswitch must be in the '1' position.

Once a lighting scene has been set up to your satisfaction, it may be recorded on the disc. Separate keys are provided for recording the Back–up system output and the contents of the Preset store. Fade times are automatically recorded in both cases.

Note:– Unlike the main Galaxy system the Back–up system gives no warning safeguard against over–recording existing memories. Also, if an existing memory includes a link and/or text, these will be unaffected by a Back–up system record action. They will however be deleted if the memory is cleared.

12. 7. 2. MEMORY SELECTION 

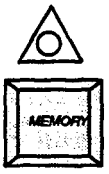
When the MEMORY key is operated, the keypad is set into Memory Selection Mode. Any number between 1 and 999 may be selected on the keypad and a lighting state may be recorded in the associated memory number. In addition, nine memory numbers, identified by a digit following a decimal point, are available between each whole number, e.g. 32.1,32.2, 32.3, etc. Normally, when recording, whole numbers would be used first (1,2,3 etc.) and then, if it became necessary to insert a state between memory 2 and 3 for example, memory 2.5 could be used.

The number selected will be used when either of the Record keys or Memory recall keys are operated. Once a memory number has been used for recording or playback, and entered on the keypad, it is assumed to be a new number. This obviates the need to press CLEAR before every entry. The CLEAR key need only be used if a wrong number has been typed in or if Memory 0 (a blackout) is required.

If an attempt is made to recall a memory number which has not been recorded, the Error Light will flash. The number is then regarded as having been used and subsequent entry will be treated as a new number. NEXT steps the number to the next highest memory number recorded. LAST steps it back to the next lowest recorded memory number, rolling through zero.

12. 7. 3. RECORDING MEMORIES

1.) A disc with its write protect tab set to 'write' (closed) must first be inserted in the drive.



2.) Then switch the keypad to Memory mode, by pressing the MEMORY key. The S or Preset key will be extinguished and the MEMORY key will light.

3.) Enter the required memory number on the keypad, this will be shown in the display above it.

4.) Ensure recording is enabled: a key (TOK 4) should be inserted in the panel's REC. LOCK switch and turned to the '1' position.

5.) The state is then recorded by pressing the RECORD Σ or RECORD PRESET key once. A successful recording is indicated by the key lighting for a few seconds.

If the key does not light, one of five errors has occurred:

i) There is no disc in the drive, or it is not inserted fully. The error light will light and an error message will appear on the VDU.

ii) The Record Lock keyswitch is in the wrong position.

iii) The disc has its write protect tab set to 'safe'.

iv) No memory number has been entered.

v) The disc is full. In this case a VDU message will be given and the Error indicator will light.

The appropriate Record key lights for the time it takes to perform the record action. If either key is operated while it is lit, the second record action will not take place, the Error indicator will light and a VDU error message will be given.

Note:– The fade times shown at the bottom of the VDU screen under 'PRESET' are automatically recorded with each memory. If the times shown are not those required, they may be modified using the TIME button.

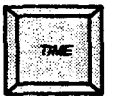
12. 7. 4. RECORDING SYSTEM OUTPUT

When pressed, the RECORD Σ key copies the total lighting state currently seen into the selected memory. The state recorded includes the effect of the Master fader and is the state displayed on the mimic when Σ is selected. Recording may take place at any time, even while fades are in progress.

12. 7. 5. RECORDING BLIND

When the RECORD PRESET key is pressed, the lighting in the Preset store is copied into the selected memory on disc.

12. 7. 6. RECORDING TIME



The time taken for a fade when a memory is played back is automatically recorded with each memory. Whichever Record key is used, the time taken that is currently shown at the bottom of the VDU display, under 'PRESET'. Each time a memory is recalled to Preset, the time recorded with this memory will be shown, or, if no memory has been recalled, 10 secs will show.

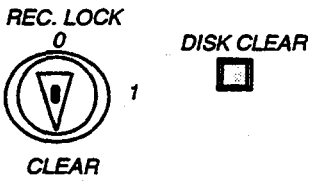
If, when recording or playing back a memory, a different time to that shown is required, it may be changed using the TIME button on the keypad. When this is pressed, it lights and the keypad display shows the current Up time.

A new Up time may now be entered on the keypad, either as seconds only, or using the decimal point (.), as minutes and seconds. On the VDU it will appear converted to minutes and seconds. The maximum possible fade time is 60.00 minutes

The second operation of the TIME button allows the Down time to be set in the same way. A third push will then return the keypad to its original mode, extinguishing the key illumination. A time of 'MANUAL' may be set if required. With the TIME button illuminated, press the 'F' key on the keypad. The display window will blank and the VDU will show

'[——MANUAL——]'

12. 7. 7. CLEARING MEMORIES



When using the Back–up system, the CLEAR position on the keyswitch is used in combination with the DISC CLEAR key, to clear memories on the disc. The required range of memories is selected on the keypad using the 'THRU' key on the keypad. It is important to remember that when the Back–up system is not 'in use' disc memories may only be selectively cleared by using the Alpha –Numeric keyboard.

By using the THRU push to set a range of memory numbers, any or all of the memories on the disc may be erased. The memory clear operation is interlocked to prevent accidental erasure, and the following procedure is required:

1.) Ensure that the disc write protect tab is set to 'write' (closed).

2.) Select the memory (or range of memories) to be cleared.

3.) Insert key (TOK 4) into the record lock keyswitch on the disc control section of the panel, and turn it 90 degrees clockwise to enable recording.

4.) Rotate the key a further 45 degrees against the spring to the CLEAR position and, while holding it there, press the DISC CLEAR button. This requires the use of both hands.

12. 8. PLAYBACK

The Playback section comprises a 'Blind' Preset store into which the next lighting scene may be set (either from the memory or by the Channel Control) and a set of Fade Controls. Two fades may be in progress at the same time. The fade duration is preset using the TIME key on the keypad and a fade is started by pressing either the MOVE–FADE or CROSSFADE key.

It is always possible to over–ride the last fade started. It may be speeded up or slowed down or completed instantly. Fades may be profiled manually or the Playback may be set to operate using pre–recorded times to simplify the operation of replaying memories and to guarantee consistency of lighting for each performance.

12. 8. 1. THE PRESET STORE

The Playback preset store is never live (i.e. it does not directly contribute to the current lighting scene), but is used to set up the new destination levels to which channels will fade next time a fade is started.

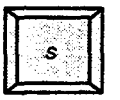
12. 8. 2. LOADING THE PRESET STORE

Memories may be loaded into the preset store by selecting the required number on the Memory keypad and then pressing the MEMORY ↓ key. This wipes any previous contents of the Preset store and copies the state recorded in the selected memory. Memories may be combined in the Preset store by prefixing the memory number with '+' or '–'.

The MEMORY ↓ key lights when channels have been loaded into the Preset store either by transferring memories or by the use of Channel Control. It is extinguished when Preset is wiped by performing a memory recall action with no memory selected.

If an attempt is made to recall a memory number which has not been recorded, the error light will flash. The number is then regarded as having been used and any subsequent entry will be treated as a new number. NEXT steps the number to the next highest memory number recorded. LAST steps it back to the next lowest recorded memory number, rolling through zero.

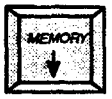
12. 8. 3. MEMORY TRANSFER TO THE 'S' STORE



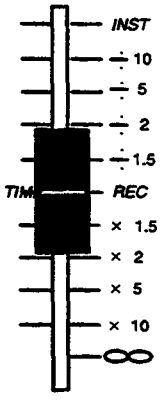
The MEMORY ↓ transfer key immediately above the Master fader allows the memory whose number is shown in the keypad window to be 'cut' immediately into the Back–up systems live 'S' store. The purpose of the key is to allow memories to be replayed very quickly without the need to use the Playback. The effect produced is that of an instant crossfade, clearing any previous lighting and substituting the new state. Any Playback fade which may be in progress when the key is pressed is immediately cancelled.

12. 8. 4. PLAYBACK MEMORY FADES

1.) Set the keypad into the MEMORY mode and select the memory number corresponding to the required lighting state.

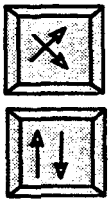


2.) This memory may then be transferred to the Preset or 'next' store of the Playback using the MEMORY ↓ Transfer key.



On recall, the key will light, indicating there are some channels on in the Preset store. The times for the incoming lights to come up and the outgoing lights to dim will be recalled from the memory and displayed at the bottom of the VDU display under 'PRESET'. If different times are required, they may be changed by using the TIME key.

3.) Before starting the fade, ensure that the Fade Duration control is in the central, REC TIME position, to avoid any modification of the fade time. (unless this is required).



4.) On cue, the fade is started by pressing the CROSSFADE /MOVEFADE key. The fade rate may be speeded up or slowed down at any time by using the Fade Duration control.

Note:– The Backup does not take into account any recorded fade types.

Once a fade has been started the next memory number may be called up and transferred to the Preset store ready for use, and the procedure repeated.

All fades are linear and dipless; that is, all channels progress smoothly and directly from their current to their new levels. Channels with the same original and destination levels do not move or 'dip'.

A Blackout state may be obtained by performing a memory recall action with memory 0, or blank, selected. This may take place as a fade action using the Preset store and the CROSSFADE key, or instantly by using the white Memory recall key on the output control section of the panel.

12. 8. 5. ACTIVE FADE DISPLAY

When a fade is started on the Playback, the number of the memory which was last transferred to the Preset store (i.e. the number which was shown in the Preset Display window) will appear at the bottom of the VDU display, under the heading 'ACTIVE', to show that this was the last memory faded. Any Plus or minus prefix is also shown whilst the fade is running, its progress is shown by the two UPand DN bar type displays on the right side of the VDU display. On completion of the fade, the Active display and fade progress display are cleared.

12. 8. 6. COMBINING MEMORIES

The + and – keys may be used to prefix a memory number and will effect the way in which the memory combines with the current contents of the Preset or 'S' store when the appropriate recall key is operated. A '+' or '–' prefix will be ignored if the number is used for recording.

12. 8. 7. ADDING MEMORIES

Any Memory may be added to the existing channels set in the Preset store or the system's live 'S' store by prefixing the memory number with '+' on selection. While a normal transfer would totally substitute the selected memory for the previous lighting in the store, the transfer of a memory with a plus prefix will simply add in the extra channels at their recorded levels.

A channel which was previously On in the store and is On in the memory added, will be set to the recorded level in accordance with the 'Latest–takes–precedence' philosophy. By this method of transfer, memories may be combined in the Preset store (one at a time) before presentation.

12. 8. 8. SUBTRACTING MEMORIES

If a memory number is prefixed with minus, the channels which were On in the memory will be set to zero in the Preset store when transferred. In this special case channels which have been subtracted from the Preset store will dim to zero if a Move–fade is subsequently initiated. If a Minus memory is transferred directly into the output those channels will be set to zero (turned off) in the 'S' store.

12. 8. 9. SEQUENTIAL PLAYBACK OF MEMORIES 

To eliminate unnecessary key pushing, an automatic sequence mode may be selected on the Playback. When the SEQ key is pressed, it lights and the next memory number in sequence will then be automatically loaded into the Preset store each time a fade is initiated.

Any recorded links will be taken into account and only memory numbers which have been recorded will be transferred (unused numbers will be stepped over).

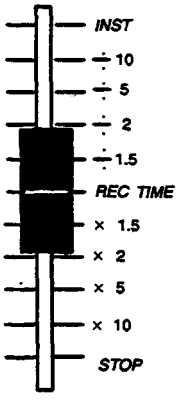
Pressing the Playback MEMORY ↓ key always transfers the number selected on the memory keypad to the Preset store, regardless of whether Sequence is selected or not. However, if Preset store loading occurs automatically because of sequence modes, the Memory keypad number is ignored and the next memory in sequence is transferred.

12. 9. SETTING FADE RATES

Each fade carried out on the Playback is sub–divided into two parts: those channels increasing in intensity and those decreasing. Each part may operate at a different speed. The fade times are recalled from disc whenever a memory is transferred to the Preset store. The times may be modified using the TIME key.

The VDU display shows, under the heading 'PRESET', the times which will be used when the next fade is started. These values may be over–ridden at any time using the fade fader. This fader should normally be set to the central REC TIME position.

Movement away from you shortens the time; towards you lengthens it. The fastest fade time is effectively instant, taking less than 0.2 seconds. The slowest is sixty minutes. When the fader is at the bottom end, in the STOP position, the fade is halted. The Fade Duration control only affects the fade which is 'Active', i.e. the last fade started.



12. 9. 1. MANUAL FADES

Manual fades may be carried out on the Playback as follows:–

1.) Transfer the required memory to the Preset store.

2.) Press the TIME button which will light.

3.) Press the 'F' key on the keypad. The preset Fade times shown on the VDU will change to 'MANUAL'

4.) Press MOVE or CROSSFADE to determine the type of fade. The appropriate key lights to indicate the fade is running.

5.) Move the Fade Duration control, which is now a manual master, to the bottom to 'collect' the fade. The fade is then actioned by moving the control from the bottom to the top at the required rate.

The fade progress display on the VDU will track as the fader is moved upwards. While the fader is still below maximum, the fade may be reversed by simply moving it back down. When the top is reached, the fade key goes out signifying the end of the fade, after which it may no longer be reversed.

If it known that a particular fade will be performed manually at each performance, a 'time' of manual may be recorded. Manual mode will then be selected automatically each time the memory is recalled for fading.

12. 9. 2. MULTIPLE MOVE FADES

Unlike the main Galaxy system, on which up to 24 move fades may be in progress at a time, the Back–up system can only control two fades at a time. If a third fade is started, the channels fading as a result of the first fade will stop at whatever level they have reached.

There is no provision for the control of fades other than the latest. Once a second fade has been started, the first will complete its set time, unless, of course, a third fade is initiated.

12. 9. 3. INSTANT FADES

Any move–fade or crossfade may be actioned instantly by moving the Fade Duration control to the INST (instantaneous) position. This will only affect the latest fade started.

12. 9. 4. PAUSING A FADE

The last fade to be started may be temporarily halted at ant time by moving the fade duration control to the STOP position. When the control is raised from this position, the fade will restart. It must be remembered, however, that if a second fade is started while a fade is halted, it will not be possible to restart the first fade.

12. 9. 5. OVER–RIDING A CHANNEL

The Channel Control is able to take control of any channel at any time and modify its level even if the channel is moving in a Playback fade. When this becomes necessary, corrective action is required as quickly as possible. Unfortunately, often in the time taken to type in the channel number it is too late to stop the fade being spoilt. However, if it is known that an 'over–ride' may be necessary, the channel number may be selected in advance:

A channel to be over–ridden during a playback fade is selected on the keypad in channel control mode. The fade is then started and control is passed to the Playback. If no further action is taken the channel continues under playback control until the fade ends. However, if either the @ ,UP or DOWN keys are operated, control of the channel is immediately transferred to the Channel Control, so allowing the channel to be controlled manually.

12. 10. THE MASTER FADER

When the Master fader is moved down from 10 towards 0, the lighting scene set on the Back–up system is proportionally faded out. Returning the fader to 10 restores the lighting. Any fades in progress and all system modes are unaffected.

Note:– That as the Back–up system has only one Master fader, the grand master allocation from the Galaxy is ignored.

12. 11. NOTES CONCERNING BACKUP FACILITIES

The Memory Backup system is less complex than the main Galaxy System. As such, it is not able to utilise all aspects of the 'System Patch'.

The Proportional Patch is used, complete with Dimmer to channel patching, proportional levels, dimmer profiles and dimmer Non–Dims. Channel Non–Dims are also utilised.

The Backup system ignores Channel Profiles, Fade Profiles, and the channel to Master allocation.

Other limitations of Backup operation are that it does not take account of recorded fade types and that it cannot operate Programmable Effects.

12. 12. TRANSFERRING CONTROL BACK TO GALAXY

To achieve a smooth transfer back to the Main Galaxy system. The following procedure should be implemented:–

1) Make the Galaxy system output match that of the Back–up. This should be relatively easy if the back–up is being run on a disc (and thus memories) recorded from the main system, and the current Back–up levels are the state of a memory. If this is the case then simply push the BACK–UP key. The red light will go out, and control will be returned to the Galaxy system.

2) If the current state of the Back–up is in no way representative of a recorded state in the Galaxy memory, then you must match the levels manually, or wait until the next blackout and transfer control at that time.

Note:– At the point of change over, there may be a slight fluctuation in light levels as the dimmer control times are broken and remade.

APPENDIX A – SYSTEM MESSAGES

Introduction

Information about Galaxy is displayed as system messages on the VDUs and by means of error codes on the Control Desk. For each message an explanation is given with suggested course of actions if appropriate.

Error Codes

The desk software displays errors on the **Memory/Mimic** panel as follows :–

E 01 and **E 02** – Communication failure between the control desk and the Electronics Crate.

ACTION REQUIRED:– Check for loose or incorrect connections between panels and /or the Electronics crate. Consult Strand Lighting Service Dept.

E 03 and **E 04** –Not used at present.

E 05 – Potential problem with Electronics PCB.

ACTION REQUIRED:– Consult Strand Lighting Service Dept for further advice.

E 06 – +/– 15V power rail more than 10% out.

ACTION REQUIRED:– Consult Strand Lighting Service Dept for further advice.

VDU Messages

Messages may appear on the VDUs as a result of certain operations, certain errors in operations, or in the event of certain system faults. Once a message has appeared it may be cleared by pressing the Error button on the **Memory/Mimic** panel. The exception to this is where a message indicates a system fault which continues to be detected.

SYSTEM OPERATION MESSAGES

These messages generally warn that either errors have occurred in System Operation or that certain operational conditions exist. In rare cases, these messages may indicate System faults i.e. they occur when system operations have not caused them. In such instances, advice and assistance should be obtained from Strand Lighting Service department.

ALLOC Q NOT RE–RECORDED

A Record Mods or Record with Auto Mod operation has been actioned over a range of memories which include allocation memories. It is not possible to modify allocation memories with these functions, thus the memories have not been re–recorded.

AUTO–MOD STORE FULL
The Automod store is part of Cue Memory but only has a limited amount of space allocated, and this has been used.

DESK #n IN STANDBY
The desk (#n) has been switched to standby. This message is not displayed if the main desk is in standby at power–up.

DISC ACTION ABORTED
A disc action has been aborted, prior to completion by second touch of DISC TO MEMORY or MEMORY TO DISC whilst the action is in progress, or by a serious disc error.

DISC BUSY
A disc operation is already in progress or the Disc unit is in Autodump mode, at the time of requesting a disc operation.

DISC CLEAR IN PROGRESS
A disc clear (disc initialise) operation is currently in progress

DISC COPY IN PROGRESS
Disc copy operation currently in progress

DISC FULL
All the available space on disc has been used. This message also appears if more than 1828 different memories have been recorded onto disc, even if some have been subsequently deleted.

DISC NOT READY
Either there is no disc in the drive, the disc is not fully inserted or the disc is not rotating at the correct speed.

DISC SAFE
This message is reported if an attempt is made to clear or record a write protected disc, or if the AUXILIARY unit REC LOCK keyswitch is in the 'lock' position.

EFFECT NO. LIMIT
Galaxy supports the running of ten effects simultaneously. If an attempt is made to start an 11th, the first stops, to allow the latest to run. The message indicates that this has happened.

EFFECT SPACE LIMIT
There is insufficient internal memory in the Effects APC to load this effect and run it. As this memory is dynamically allocated at Effect start time, it may be possible to run the required effect by stopping existing active effects.
Certain effects (such as chase and cycle) may be recorded with relative steps, i.e. the step is built on the previous step.

FORMAT LIMIT ABORTED
Format limit operates by making temporary changes to the System patch. If the Dimmer to Channel Patch is then altered, Format limit mode is aborted, resulting in this message.

GBM / CHANNEL CONTROL#1 FOCUS MODE
The optional Geographic Button Mimic Panel and Channel Control#1 are in the special FOCUS mode. Channel Control 1 is thus not available for use.

LEARN PROFILE ABORTED
This message occurs if memory is re–initialised during Learning of a profile or if a fade that is learning a profile is cleared down (e.g. by a crossfade elsewhere or a direct transfer to output). Alternatively Learn Profile may be aborted by pressing the Learn Profile key a second time.

LESS THAN 10% MEMORY LEFT
More than 90% of the available memory has been used.

MAX CALIBRATION REACHED
This warning indicates the adjustment limits of the real–time clock have been reached.

MCP CROSS PATCH LIMIT
Too many dimmers have been 'cross–patched'. Cross patching occurs when a channel is patched to 2 or more dimmers, which are controlled by seperate MDP cards e.g. 1 and 385. The limit varies with the exact nature of the patch, but is approx. 400.

MEMORY FULL
Displayed when all available lighting memory has been used.

MEMORY NOT AUTODUMPED
When memories are recorded with Autodump mode active, a 'queue' is created for them to be copied onto disc. If too many memories are recorded in quick succession, the queue length is exceeded, and although the excess memories will record correctly onto the Galaxy, they will not be copied onto disc.

MEMORY LOST ON MEMORY 0
This does not refer to lost system text or patch data held in Memory 0, but to the fact that a memory has been lost in a DISC TO MEMORY or MEMORY TO DISC operation using the BLOCK SHIFT facility.

Block Shift numbering wraps around 999 so that Memory 901 block shift 100 becomes Memory 1, 902 becomes 2 etc. If, as a result of the requested shift, a memory with number 0 would be created (e.g. Memory 900 block shift 100), the memory is not transferred and the error message appears

MOTION MEMORIES LOST
It is not possible to transfer the Motion Data component of a memory to or from disc using the renumber facility provided on the alphanumeric keyboard. This warning message indicates that the motion (position and colour) data has been lost.

MOTION MEMORY FULL
The Memory, on the Motion APC, used for temporary storage of motion memories has all been used up.

NO MEMORIES IN RANGE
On DISC TO MEMORY transfers the selected memory or range of memories cannot be found on the disc. On MEMORY TO DISC transfers the selected memory or range of memories cannot be found in Cue Memory.

OPTION NOT AVAILABLE
This indicates that the alphanumeric keyboard option selected is not available

PALS /CC IN STOP
The STOP key on the Motion Panel has been pressed, preventing control of motion units. STOP mode is also set following Power Up.

PATCH NOT PERMANENT
This occurs when memory is re–initialised (0 THRU 999.9 CLR MEM) or if DISK TO MEMORY is aborted during transfer of Memory 0 system text or patch data. This is because the old system text and patch are deleted before loading the new data from disc, thus some data is potentially lost.
The patch data is still maintained in temporary memory, but is lost if the system is turned off unless a re–record patch operation is performed.

PRINT ALREADY REQUESTED
This is reported if the print function requested is currently in progress. Because of internal data buffering, the print action may not yet have been actioned. It is possible to queue up print requests of different types, without the occurrence of this message e.g. a second request to Print Memories whilst the first is still being actioned would generate the warning.

PRINTER OFF LINE
This occurs if the printer is not on line when PRINT is selected on the alphanumeric keyboard. Alternatively this may indicate that the printer is turned off, is disconnected or has developed a problem.

RECORD ABORTED XXX
The memory was locked during a record action. XXX indicates the aborted action.
XXX = 001 Record memory track
XXX = 002 Record Mods.
XXX = 003 Record with Automod

RECORD MOVE ABORTED
The memory was re–initialised during a Record Move operation which has been aborted

SAVING CUSTOM PERSONALITY
Save Custom Personality operation is in progress.

SYSTEM ERROR MESSAGES

These messages should not occur in normal system use and can indicate a system failure. Advice and assistance should be sought from a Strand Lighting service agent if any of these messages appear, especially if they cannot be cleared.

APC FAILED xx

An APC has ceased responding to the Master APC. The number xx corresponds to the setting of the rotary switch on the APC front edge. This message may not appear for several minutes after the APC has ceased responding.

CHANNEL PROCESSOR FAULT xxx

A Channel Processor/MDP card is not responding to the Master APC. The number xxx identifies the faulty card. (000= extreme left in the Electronics crate, numbering across to 003)

CHECKSUM ERROR – APC xx

A Checksum test is run at regular intervals whenever the system is in use. An error identifies a program EPROM fault on the APC. The number xxx corresponds to the rotary switch setting on the APC front edge.

CO–PROCESSOR TIMEOUT

The Co–Processor has not responded to the Master APC in the time allowed following system switch –on.

DATA UNAVAILABLE DIMMER nnnn

Dimmer Fault Detection message (if fitted)

DESK (AUX POD) FAULT

An Auxiliary pod has ceased responding to its 'parent'. The value xxx identifies the pod as :

xxx =00 : Desk #1

xxx =010: Desk#2

DESK PROGRAM FAULT #n xxx

Reports on problems identified within the desk.

The value xxx indicates which desk is reporting a problem, and is encoded as follows :–

xxx= 000 : Desk #1

xxx= 001 : Main Desk#1 (Aux Pod)

xxx= 010 : Second Desk #2

xxx= 011 : Second Desk #2 (Aux Pod))

Fault codes #n indicate different types of fault as follows–:

#0	Problem communicating with the Aux. Pod
#1	Desk program checksum error
#2	Desk program – no table EPROM fitted
#3	Desk tables checksum error
#4	+/– 15v rail fault
#5	Keyboard data error. (this may occur during rapid keyboard entries in which case it doesn't indicate a real fault).

DISC CLEAR FAILED

A disc operation has not completed successfully probably due to a faulty floppy disc.

DISC COPY FAILED

A disc copy operation has not completed successfully probably due to a faulty floppy disc.

DISC ERROR
The memory data on the disc is corrupt. The system will attempt to continue with other memory transfers wherever possible. Persistent disc errors point to a disc drive problem

FX APC NOT FITTED
The Effects APC is not responding to the Master APC. This message is only reported if an attempt is made to run an effect.

FX APC RESTARTED
The Effects APC has developed a problem, and has been restarted either automatically or from a RESET key

ILLEGAL MOTION CUE xxx
At power–up the Motion memory data is transferred from Cue Memory to the Motion Control electronics card. The transfer also occurs after motion configuration/patch changes and certain disc transfers. The error message indicates corruption of the Cue Memory or problems in the transfer mechanism.

xxx	=	001	Incorrect cue length
xxx	=	002	Incorrect checksum
xxx	=	003	Unknown motion cue type

Consult Strand Lighting Service Department for further advice.

INSUFFICIENT MEMORY FITTED
At power–up or memory initialisation (0 THRU 999.9 <CLR MEMORY>) the system has found less memory than that found on the configuration option switches on the co–processor card.

MASTER APC RESTARTED
The Master APC developed a problem and has been restarted automatically. Note that the system will attempt to restore the lighting levels from the point at which the problem occurred.

MCP S/W VERSION FAULT xxx
The Channel processor / MDP card is fitted with an incorrect, and incompatible version of software.

MEMORY DATA CORRUPT
The data for one or more recorded memories is corrupt.

MEMORY DIRECTORY CORRUPT
The directory by which Galaxy locates its recorded memories is corrupt.

In all cases of memory corruption, especially Memory Direct Corrupt the recommended action is to re–initialise all of Cue Memory using: 0 THRU 999.9 CLR MEM and reload data from disc.

It is not recommended to record information to disc from a corrupt memory.

MOTION APC RESTARTED
The motion APC has developed a problem and has been either automatically restarted or from a RESET key

MOTION INTERNAL ERROR
An error has occurred in recording a motion memory into the Motion APC

MOTION TX/RX LINE FAULT
The Motion APC has detected a problem transmitting data on the RS4885 data link to automated fixtures.

NO BUTTON MIMIC RESPONSE
The Geographic Button mimic unit has been either disconnected or turned off, or has developed a fault.

NO CLOCK FITTED
The Master APC is fitted with a digital clock device. This message indicates that the device is either missing, or has failed.

NO CO–PROCESSOR RESPONSE
The Co–Processor card has ceased responding to the master APC.
Note:– This error condition will also cause loss of communication to the Desks, Disc, Geographic Mimic, DFD, Riggers, and Printer.

NO DESK RESPONSE
The Desk is no longer responding to the electronics crate, either because it has been disconnected, turned off, or has developed a fault.

NO DISC RESPONSE
The Disc or Memory Backup unit is not responding to the electronics crate, either because it has been disconnected, turned off or has developed a fault.
The message appears at the point the response is lost. It will also appear if a disc action is requested whilst response is lost, or if a disc clear is in progress.
If the Disc unit is a Memory Backup, and Backup mode is active, this also causes the loss of response to the electronics crate.

NO MEMORY FITTED
the system lighting memory is either missing or has ceased responding to the Master APC.

NO REMOTE DESK RESPONSE
Stalls desk equivalent of NO DESK RESPONSE.

PATCH DATA CORRUPT
The Patch information in the lighting memory is corrupt.

PERSONALITY READ ERROR
This message indicates that a fault has occurred reading data from the Custom Personality EEPROM (when fitted). The error number indicates the area of data found to be corrupt:–
xxx = 101 Dimmer Profile 1 corrupt
xxx = 102 Dimmer Profile 2 corrupt etc for x = 1 to 5
xxx = 201 Fade Profile 1 corrupt
xxx = 202 Fade Profile 2 corrupt etc for x = 1 to 10
xxx = 301 Channel Profile 1 corrupt
xxx = 302 Channel Profile 2 corrupt
xxx = 006 Profile Text corruption
xxx = 000)
001) Channel to Dimmer Patch corruption
002)
003)
xxx = 004 Channel to Master & Channel to Channel Profile corrupt

In all cases the appropriate patch data should be checked, corrected and the personality re–recorded to clear the error.

PERSONALITY WRITE ERROR
This message indicates that a fault has occurred writing data to the Custom personality EEPROM (when fitted).

PRESET APC RESTARTED
The Preset APC has developed a problem and has been started either automatically or from a RESET key

RECORD MOVE ABORTED
This occurs if memory is re–initialised during a RECORD MOVE operation.

REMOTE DESK IN STANDBY
The remote (stalls) desk has been switched to standby. This message is not displayed if the stalls desk is in standby at power–up.

DFD MESSAGES

DFD ACTIVE
Systems with Dimmer Fault Detection and dual electronics changeovers report this message when the changeover control sets the system input as active from Backup.

DFD BUSY – TRY AGAIN
The DFD system is currently carrying out an action from the EC() Enhancements section, and a further action has been requested.

DFD CONCENTRATOR FAILURE nnnn
DFD concentrator (or rack) nnnn has responded to the electronics crate, but in an incorrect manner, and is presumed faulty.

DFD CONCENTRATOR OFF–LINE nnnn
DFD concentrator (or rack) nnnn has ceased responding to the electronics crate, due to lost power, or fault occurrence.

DFD FAULT CLEAR – DIMMER nnnn
A previously reported fault with the dimmer nnnn is now cleared.

DFD FAULT LOG FULL
The DFD log is limited to 255 entries. This message indicates that more than 255 entries have been received since the log was last cleared.

DFD FAULT SEQUENCE LIMIT nnnn
DFD fault data is being generated faster than the Galaxy can accept it. The number nnnn indicates the dimmer for which data has been lost.

DFD IN STANDBY
Systems with DFD and dual electronics changeover report this message when the changeover control set the system as backup from active.

DFD LINE FAULT nnnn
This fault is reported if there are problems in data transmission, for example, short circuits on the DFD data link or connection problems. The number (nnnn) when shown indicates the rack, or DFD concentrator, with which communication is no longer possible.

DFD NO CONTROL – DIMMER nnnn
Dimmer nnnn is passing current when it should be off (short–circuit)

EXCESS DC – DIMMER nnnn
The output of dimmer nnnn has high level of DC current flowing.

DIMMER OVERLOAD – DIMMER nnnn
Dimmer nnnn is supplying more than its specified level of current, probably because too many lamps are connected.

FAULT DETECT FAIL DIMMER nnnn
The fault detect circuitry for dimmer nnnn has detected a problem. Dimmer nnnn is not passing current although it is on. This may be because of a disconnected or blown lamp.

FAULTS DISABLED – DIMMER nnnn
Fault reporting has been disabled, at the dimmer, for dimmer nnnn.

DIMMER OVERTEMP – DIMMER nnnn
Dimmer nnnn has overheated

NO RESPONSE FROM DIMMER nnnn
Dimmer nnnn has ceased responding to the DFD system, either because it has been turned off, unplugged or failed.

NO OUTPUT VOLTS – DIMMER nnnn
Dimmer nnnn has been turned ON, but appears to have remained OFF.

RACK MUX INPUT FAILURE nnnn
A cooling fan has failed in dimmer rack nnnn

RACK PHASE VOLTAGE FAIL nnnn
A phase of the power input to dimmer rack nnnn has failed, or has been disconnected.

APPENDIX B – GLOSSARY OF TERMS

This glossary explains many of the terms associated with advanced Entertainment Lighting Control systems, such as Strand's Galaxy. Terms are listed in alphabetical order.

ADIC Advanced Disk Interface Card – A PCB which provides the interface and communications between Galaxy panels and the electronics crate.

AMX192 A USITT standard for the analog transmission of dimmer levels over a multiplex data link.

APC Advanced Processor Card – A PCB holding digital processing circuits. Up to four may be fitted to a Galaxy:–
Master APC controls overall sytem operation
Effects APC controls the running of programmable effects
Motion APC controls motion facilities
Preset APC controls the operatin of a second Preset Masters panel

Audio (effect) An effect which modulates the level of groups of channels or preset masters in response to an audio input.

Autodump A mode of operation whereby all record actions automatically transfer the data to an associated library storage device, usually a floppy disc unit.

Automated Fixture A luminaire with mechanical and electronic provision for the remote control of pan, tilt, and optionally, focus, iris and colour change

Avid Advanced Video Interface Card – A PCB which generates the signals to drive two Galaxy VDUs

Backup Some form of alternative means of controlling dimmer levels in the event of failure or damage to the lighting control system. See also *auxiliary system, memory backup.*

Battery Backed Provision of batteries as a means of ensuring that data stored in memory is not lost or corrupted when mains power is removed from the control system.

Blackout A state in which all channels are set to zero level. This normally results in all dimmer levels being output at zero level, except when special dimmer profiles are used.

Blind Operations, Applies usually to channels or automated fixtures which alter levels or positions (in stores or lighting memories) without affecting the current dimmer levels or fixture positions.

Card An alternative word for PCB

Co– Processor Comminications Processor card – a PCB which holds the communication interfaces between the Galaxy electronics crate and the desks, disc unit,DFD, Geographic button mimic, printer and riggers control.

CMOS Complimentary Metal Oxide Semiconductor – A low power electronics technology frequently used to implement user memory. CMOS memory is frequently battery backed to ensure that data is maintained when the mains power to the lighting control system is removed.

Channel A Number used to access and control the level of one or more dimmers, as defined by the current system patch.

Chase (effect) An effect which repeatedly outputs a sequential series of lighting states which, when recorded as part of the effect, are known as steps.

Circuit A number usually associated with the outlet or socket numbering to which the luminaire is connected. Load wiring cable connects a dimmer to the outlet/socket.

Colour Scroller A device fitted to a luminaire for changing colour. Normally provided with electronics for remote control, it is a type of colour changer which utilises several pieces of colour filter fixed end to end and wound onto rollers.

Cue Generally refers to the point at which a change to the lighting state is required during a performance. Sometimes used as a term synonymous with lighting memory.

Cut To immediately replace the current lighting state with another, which has previously been recorded in user memory. See also *wipe*.

Cycle (effect) Similar to chase, but in which each step may have a different fade in and fade out time.

DMX512 A USITT standard for the digital transmission of dimmer levels over a multiplex data link.

D54 A Strand Lighting standard for the analog transmission of dimmer levels over a multiplex data link.

DEMUX see *demultiplexer.*

Demultiplexer An electronic device for decoding multiplex data transmissions.

Designers Control A hand–held portable control unit which provides all the primary functions of the main lighting control, for a lighting designer to use in rehearsal.

Dimmer An electronic device for controlling the brightness of one or more luminaires. A lighting control system allows for channels to control the output level of one or more dimmers.

EEPROM Electrically Erasable Programmable Read Only Memory – The electronic devices used for the storage of a Galaxy system's custom personality.

EPROM Erasable Programmable Read Only Memory – The electronic device(s) in which the lighting control system's operating software is permanently stored.

Flash (effect) An effect which repeatedly alternates output of two lighting states. The relative time between the two outputs is known as the mark–space ratio, and is controllable.

Flicker (effect) An effect which allows the level of several lighting states to be controlled by random level generators. It is designed to simulate the flame flicker of a fire.

File A term used in TV/Studio lighting terminology synonymous with lighting memory.

Geographic Button Mimic A special form of channel control comprising a customised panel layout of the circuits installed in the Theatre or Studio. Each circuit has a corresponding illuminated push button which is lit whenever the controlling channel is on. Channels may be selected for level control by momentary closure of the push–button.

Geographic Channel Numbering The numbering of channels in relation to the physical location of the circuit layout within a fixed theatre or studio installation, using the patch capability of the control system.

Level A numerical value used to define the "brightness" of a channel or dimmer. Usually given as a proportion (in %) of the maximum possible brightness of the Channel/Dimmer.

Library Storage A facility to retain all the data from user memory on floppy disc that is independent of the lighting control system, and in a form that can be transferred to an another system.

Lighting Memory A lighting state that has been recorded in user memory, possessing a unique memory number. Also the memory devices within the system used for recording such information.

Lighting State A collection of channels and their levels, as selected by the operator, for one scene of the overall performance or presentation. On fully integrated systems, the lighting state may also include positional data for automated fixtures and colour scrollers.

Lightning(effect) This type of effect allows several lighting states to be flashed randomly for a predetermined time. It is designed to allow the simulation of lightning.

Live Operations that immediately affect dimmer levels or positions of automated fixtures.

Luminaire A source of light, in appropriate mechanical housing, for use in Studio or Theatre. See also *automated fixture.*

MCP Multiplex Channel Processor – A PCB which calculates the control levels for up to 384 dimmers and transmits this information in D54 format. This PCB is not normally used in the new Galaxy systems.

MDP Multiplex Dimmer Procesor – A PCB which calculates the control levels for up to 384 dimmers and transmits this information as D54 and DMX512 formats.

MRL A Strand Lighting standard for the digital transmission of automated fixture position data over a multiplex data link.

MUX See *multiplex.*

Memory Directory The internal index defining the physical location, in user memory, where particular lighting states and other user data structures are recorded.

Multiplex A means of transmitting data (usually dimmer levels) from a lighting control to dimmer racks by using a single cable and allocating its use to each dimmer in turn for a very short time. See also *AMX192, D54, DMX512, SMX.*

Non–Dim A special form of channel profile or dimmer profile in which the actual channel or dimmer level output by the system is either off or full.

PALS Strand's Precision Automated Lighting System. A range of automated fixtures, colour scrollers and position control equipment.

PCB Printed Circuit Board

Preset A store into which lighting states may be loaded. Playback preset stores are loaded prior to commencement of fades, and allow modification of the channel levels or other fade attributes before fade instigation.

Profile See *channel profile, dimmer profile, fade profile.*

Q See *cue.*

Record The process of saving lighting states, fade attributes, automated fixture position data, patch or text in user memory.

Riggers Control A hand–held portable control unit used for selecting channel levels when focusing luminaires.

Riggers Bus Interconnection wiring between riggers or designers controls and the lighting control system.

S Law A specific dimmer profile.

SMX An extendible Strand Lighting standard for the digital transmission of dimmer levels and automated fixture position data over a multiplex data link.

Store An area of system memory used to hold lighting states for set–up, playback or modification.

System Memory The part of a lighting control system's electronic memory that is used for the internal functions of the operating system.

User Memory The part of a lighting control system's electronic memory that is used to store the users lighting states and patch.

USITT United States Institute for Theatre Technology.

VDU Visual Display Unit – usually capable of colour display.

Index

Note:– Items in this index can be found either alphabetically or are listed under an appropriate grouping, e.g. chase=EFFECTS functions,
assign channels to dimmers=PATCH functions.
All keytops are shown in capital letters with their respective functions given below them.

R

S

T

U

V

W

X