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LIGHT PALETTE
USERS' HANDBOOK
Program Version J4
Backup Version 3

TECHNICAL INFORMATION

LIGHT PALETTE

USERS' HANDBOOK

Program Version J4

Backup Version 3

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A DIVISION OF RANK AUDIO VISUAL LIMITED

********** OPERATION **********

1 INTRODUCTION

This handbook is intended as an operators guide to the Light Pallete system and options.

The notes are relevant to system fitted with the following programs.

Light Palette	Version 4	Revision J
Backup	Version 3	

There are also several shortcuts in operation and several errors that can arise, these can be demonstrated, but it is considered that they are a result of deviation from the stated operational practices.

It is possible to connect several Playback actions together, via the Delay and Wait instructions, to produce more complicated effects than apparent at first. However, because these actions are only an extension of the basic principles, it is considered they are best left to the operator to discover with the aid of some machine time, a pen and paper, and a definite idea of what is required.

Similarly, some operations which appear to be Playback actions, should be considered as alternatives, because of the smaller capacity of the Backup memory.

2 PHILOSOPHY

Light Palette is a memory system capable of controlling up to 256 Channels, electronically patchable to a maximum of 512 Dimmers.

As fading is based on the MOVE principle, it is only necessary to define the levels of Channels when they are altered. If no new level is set for a Channel in a Cue, it will remain at its existing level.

It has one playback capable of replaying Cues, each with up to 6 parts, automatically. For every Cue the following attributes can be defined:

Time - allows fade time to be set from 0 - 999 seconds or manual.

Delay - allows the start of the fade to be delayed, from the operation of the "GO" button, from 0- 500 seconds.

Profile - allows the fade profile to compensate the Channel output progress for any different Dimmer output law required.

Wait - allows the start of the next Cue to be defined from the operation of the "GO" button, from 0-500 seconds.

In order to counterract the variables of a live performance, each or every fade can be manually over-ridden.

All playback (Cue sheet) information is presented on one VDU, whilst the stage output information (for 100 channels at one time), with the operator commands appearing on the bottom line, is presented on the second.

It has a floppy disc unit built in for library storage, and an electronic backup system which is loaded from the main system, to which the operator can switch, with virtually no change in the stage output, continuing with the recorded Cues, except that all will have Manual time and Part Cues will be faded as one Cue.

3 GENERAL DESCRIPTION

Refer to Figure 1

The Light Palette system comprises one integrated control desk with all connections on the rear and operator facilities on the front, except for the Video Display Units' contrast and brightness adjustments which are set into the underside of the desk.

The facilities are as follows:-

1. Video Display Units (2) : for Cue and Playback information, Channel related information and Setup displays.

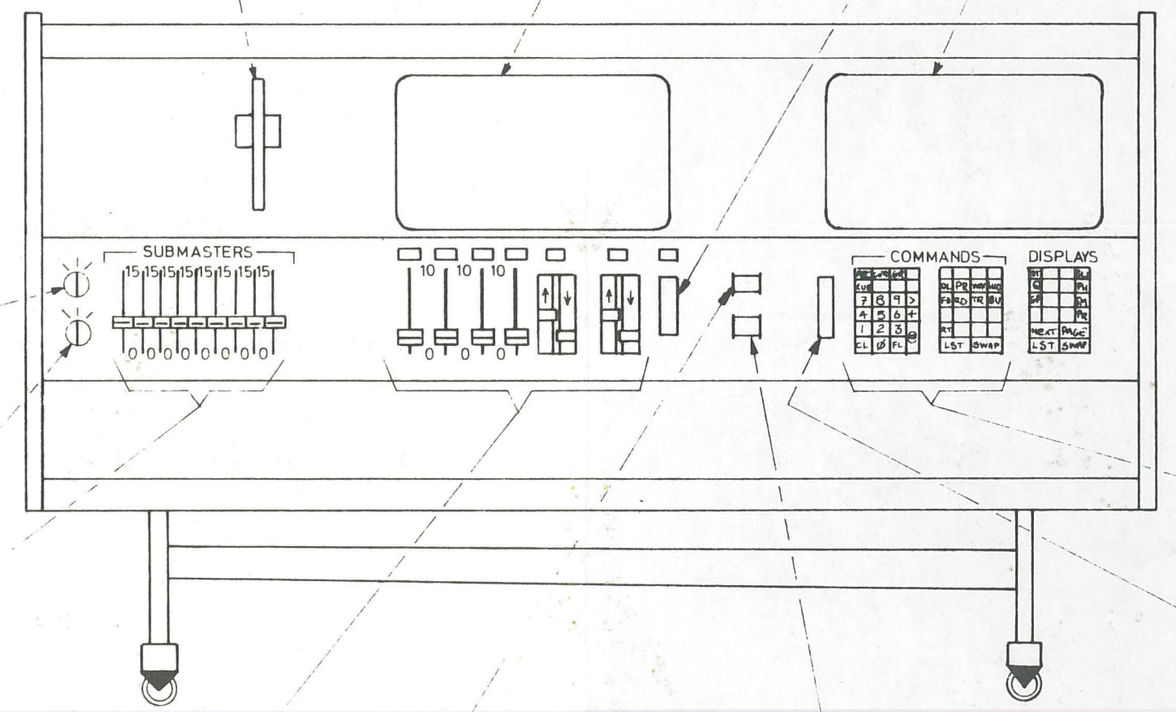
2. Floppy Disc Unit : mounted to the left of the central VDU, to read and write Diskettes carrying performance lighting and system setup.

3. Keyswitches : Record Status - left, upper
   Playback Status - left, lower

4. Submasters : right of keyswitches,
   9 Submasters, overriding inhibitory control of channels - allocated by Operator.

5. Playback : right of Submasters, 4 single faders and 2 split faders for manual fading of Cues, Rate Wheel for Fade timing modification and the GO, STOP/BACK pushes.

6. Setting/Command Keypads : 3 Keypads, each with up to 24 Keys used; these include, display mode selection, channel/group/cue/attribute selection.



RATE WHEEL
MANUAL INTERVENTION PUSH.

FLOPPY DISC DRIVE UNIT

PLAYBACK DISPLAY

CHANNEL / COMMAND DISPLAY

DISPLAY KEYPAD
OPERATION & DISPLAY MODE
CONTROL & SELECTION

RECORD KEYSWITCH
LOCKED : NORMAL : AUTO

PLAYBACK KEYSWITCH
OFF : NORMAL : BACKUP

COMMANDS KEYPADS

LEVEL WHEEL

SUBMASTERS

STOP/REV PUSH

GO PUSH

PLAYBACK
4 X SINGLE FADERS
2 X DOUBLE FADERS
MANUAL INTERVENTION PUSHES

LIGHT PALETTE
GENERAL LAYOUT
FRONT VIEW FIG 1

4 GLOSSARY OF TERMS

Auto Record : a function which automatically updates Fade Time and Delay as the modification is effected.

Channel : a control line to which one or more Dimmers may be electronically patched.

Cue : a recorded state which contains Channel information and is related to one line of the Cue Sheet.

Cue Sheet : this displays the playback attributes for each Cue allocating one line to each Cue/Part.

Delay : this is a specified delay from the time the GO push is operated, to the start of the fade.

Fader : a linear device used for manual control of a fade or in the Submasters, to effect the final override.

Group : a preset of Channels with defined levels which may be selected by the operator.

Hold : a Cue may be selected to HOLD, in which case the Fade reaching 100% will not terminate and may be reversed.

Part : any Cue can be split into a maximum of 6 parts, so that, during playback, one cue can run with up to 6 differing sets of attributes.

Remainder Dim : a rapid method of setting every Channel, except for those under control, to 0%.

Time : this is a specified duration of a Fade.

VDU : Visual Display Unit, Monitor - system display.

Wait : this is a specified delay from the operation of the

GO push to the start of the next fade.

Wheel : a rotary device, without endstops, which is used in two places:
Channel level control - instantaneous automatching and proportional control:
Fade timing - modifies the overall Fade timing, decreasing by a factor of 10 , increasing by a factor of 100, and stop.

* : Execute - this button implements all operator commands.

5 SUMMARY OF OPERATIONAL FACILITIES

5.1 Setup

Selection and display of the following:

- Memory/Disc/Backup transfers

- System Attributes : Number of Channels
  Number of Dimmers
  Number of Groups
  Designers & Focus Remote ON/OFF
  Displays number of Memories remaining.

- Profile : programming of up to 9 non linear fade/output progress relationships.

- Patch : assignment of Dimmers to Channels on any basis.

- Submasters : assignment of Channels to Submasters.

  N.B. A Channel may only be assigned to 1 Submaster

- Groups : assignments of Channels with associated levels to Groups.

  N.B. a Channel may be used in more than 1 Group.

- Cues : preview and blind modification. It is also possible to perform blind setting once the Cue Number has been established.

5.2 Channel/Level Selection

The keyboard may be used for numerical selection of Channels/Groups and Levels.

The Wheel effects proportional control on that selection and allows overmastering.
N.B. if Channels in the selection are at 0%, whilst others are at a level greater than 0%, they will remain at that level.

The maximum over-ride possible with the Wheel is approximately 1500%.

5.3 Cue Recording

The Keyboards may be used to select and record Cues and their attributes.

Cues may be recorded in any order, but the "Move" philosophy will allow errors to occur if Cues are not recorded in the sequence they will be used.

Cue insertion may be achieved, with up to 9 Cue Numbers inserted between any two consecutive numbers on the Cue Sheet.

CUE ONLY allows a insertion to be made without causing any effect on the following state.

5.4 Playback

The "GO" button initiates the playback fade(s), unless already selected via "WAIT" to be an automatic follow on.

The display will show the allocation of Cues to Faders and once the Fade has started, either the basic time the Fade has to run, or if the Cue is in Manual or Hold.

Fade timing adjustment is possible via the "RATE WHEEL" including

changeover of all Fades to Manual. Individual fades may be taken over manually via the faders' associated pushes.

The "STOP/BACK" button can stop the fade(s) if they are running (restarted by "GO"), or if no fades are running, will cause the Playback to revert to the state it would be, has the last Cue not been started.

6 DISPLAY INFORMATION

6.1 Normal

6.1.1 Playback VDU

Refer to figure 2.1

All Cue Sheet and Fade information is presented on the VDU above the Playback Section.

The information is normally shown at the brightness and contrast set by the relevant controls on the underside of the Desk.

The information includes the following:

Cue Sheet : displayed for 10 lines at a time, is updated as required.

Rate Setting:

Cue Allocation to Faders:

Cue Progress:

Two identification markers are added to the display.

■ Indicates the Cue which will be initiated by the next "GO" action.

> Indicates the Cue that will be displayed on change over to Cue Display Mode. It will normally track behind, thus showing the Cue that is either fading or has finished fading.

It may be stepped through the Cue Sheet by the Next & Last pushes, thus allowing Cue preview.

However, any Cue starting will restore the > to its proper position.

Q´	1		TIME	HLD						R
<Q´	2		TIME	17/30	DELAY	/17				A
Q´	3	P1	TIME	10			PROFILE	1		T
		P6	TIME	10						E
Q´	4		TIME	30						
Q´	5		TIME	23						
			WAIT	23						1
Q´	6		TIME	5						5
Q´	7		TIME	MAN			PROFILE	2		Ø
Q´	8		TIME	6						

10 10

3 P1 3 P6

12/30

Q 2

FIG 2·1

LIGHT PALETTE

PLAYBACK DISPLAY

6.1.2 Setting VDU

Refer to figure 2.2 through 2.7

This VDU is used for all other information, displaying 100 Channels at any one time, except in Patch, Profile and Setup.

The Designers Remote VDU is normally in parallel.

If the System size is greater than 100 Channels, Page is used to access the balance of the Channels in pages of 100 at a time.

This information is presented at two brightness levels. Full brightness, as set by the control on the underside of the Desk is used for Channel Numbers, Command Lines and the levels of active Chan Channels, i.e. those which are included in the latest Cue or are under control.

Half brightness is used for the levels of non-active Channels, i.e. those which have a level arrived at previously, if the level is 0% it will not display.

Stage Mode: Figure 2.2 Displays the Stage levels for each Channel and the latest command.

Group Mode: Figure 2.3 Displays the Channel levels for one Group at a time.

Cue Mode: Figure 2.4 Displays the Stage levels for each Channel where full brightness identifies those actually in the particular Cue/Part.

Patch Mode: Figure 2.5 Displays the Dimmer number with its allocated Channel number underneath. But for only 50 Dimmers at a time.

Submaster Mode: Figure 2.6 Displays the Channel number with its allocated Submaster number underneath.

Profile Mode: Figure 2.7 Displays the 9 Profiles which are available for modification, Profiles are selected via the Next/Last pushes. The indicates which Profile is selected.

Setup Mode: Refer to section 7.

```
001  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16 17 18 19 020
     70    70    70    70          37
021                                                       040
FL FL FL FL FL 95    95
041                                                       060
                                 85 80 85    80    37
061                                                       080
 FL    FL    FL                 20 20 20 20
081                                                       100
                      50 50 50          50
STAGE: CHANNEL  12+56 X
```

LIGHT PALETTE
STAGE VDU DISPLAY

FIG 2·2

001	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	020
FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL
021																			040
FL	FL															FL	FL		
041																			060
061																			080
FL	FL	FL	FL																
081																			100
																FL		FL	

GROUP 5:

LIGHT PALETTE
GROUP DISPLAY

FIG 2·3

```
001  2   3   4   5   6   7   8   9   10  11  12  13  14  15  16  17  18  19  020
 0   0               0               0   0

021                                                                         040
                        FL                      50

041                                                                         060
                    50  50  50  50          50                  FL

061                                                                         080
                                                        FL  92  80  93

081                                                                         100
  0  70  70  70  70                  50                                 0   0
Q'  10 : TIME  10/45 DELAY/25 X
```

FIG 2·4

LIGHT PALETTE

CUE DISPLAY

DIM	001	002	003	004	005	006	007	008	009	010
CHN	1	2	3	4	5	6	9	8	7	10
DIM	011									020
CHN	11									20
DIM	021									030
CHN	21									30
DIM	031									040
CHN	31									40
DIM	041	042	043	044	045	046	047	048	049	050
CHN	41	42	43	44	45	46	47	48	49	50

PATCH : DIMMERS

FIG 2.5

LIGHT PALETTE
PATCH DISPLAY

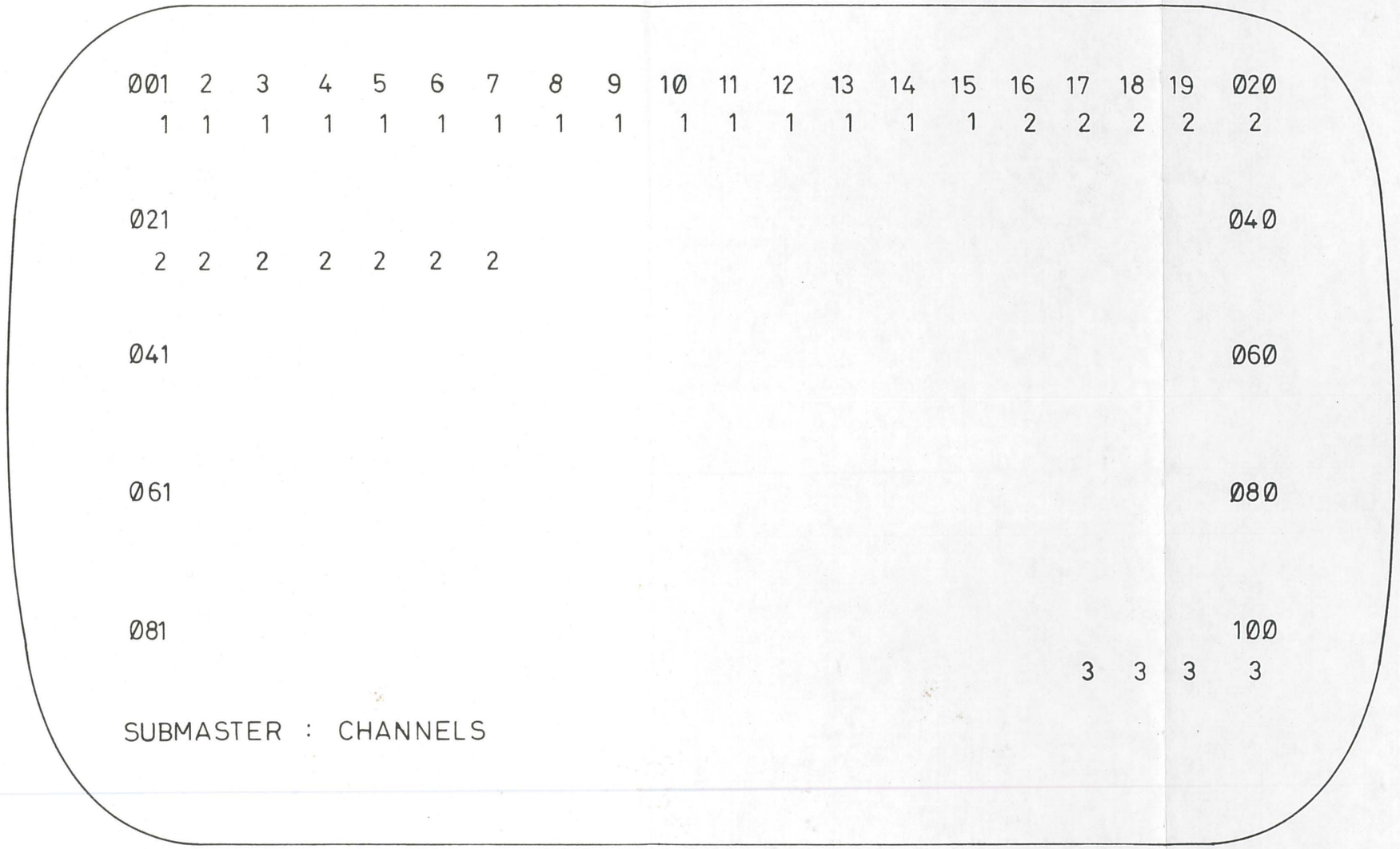


FIG 2·6

LIGHT PALETTE

SUBMASTER DISPLAY

PROFILE	10%	20%	30%	40%	50%	60%	70%	80%	90%
1	10	20	30	40	50	60	70	80	90
2									
3									
4									
5									
6									
7									
8	35	61	74	83	89	92	94	96	98
9	15	30	45	60	75	80	85	90	95

PROFILE:

FIG 2·7

LIGHT PALETTE

PROFILE DISPLAY

6.2 Back-Up

Refer to figure 2.8

The Backup Display is presented on the Playback VDU.

In Backup Mode, the Page size is reduced to 50 Channels whether in Stage or Cue Mode.

Commands are still presented on the bottom line.

All Characters are at the same brightness level.

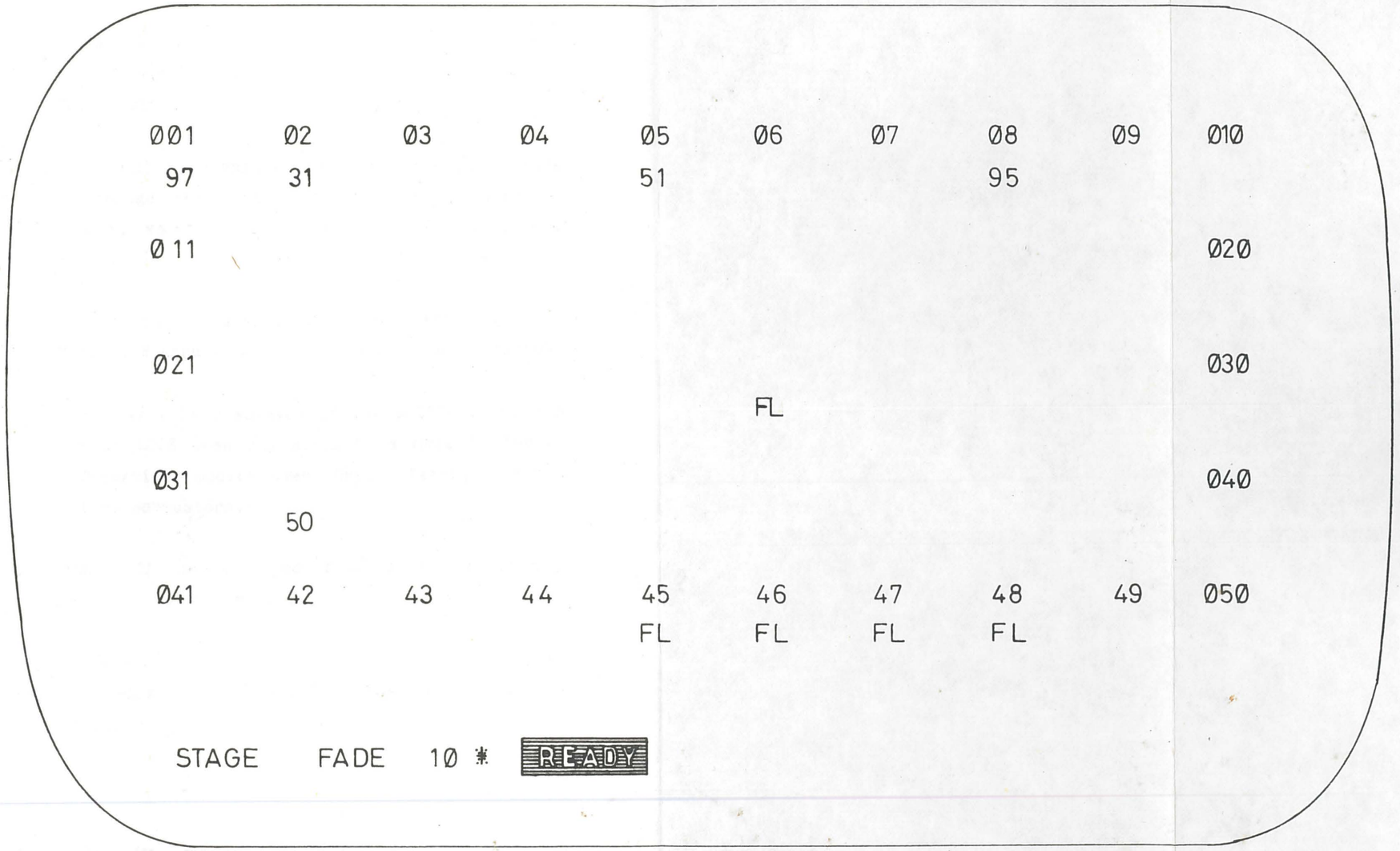


FIG 2·8
LIGHT PALETTE
BACKUP DISPLAY

6.3 System Messages

These will appear as reversed i.e. black on white.

6.3.1 Normal

ARE YOU SURE? : this will be displayed when any attempt is made at over-recording or Clear and Load Memory, Record Disc.

CLEARS MEMORY! : this will be displayed when any attempt is made to change the number of Channels, Dimmers or Groups, as this will clear the Cues and Cue sheet.

TRY AGAIN : this will be displayed if the attempt at Load Memory, Record Disc, Load Backup is unsuccessful.

LOCKED : this will be displayed if the RECORD switch is set to LOCK when any attempt is made to Record information, modify Cues, Group, Patch, Profile, Setup, Submasters.

ERROR : this will be displayed if wrong or invalid data is input to the system.

IN BACKUP MODE : this will be displayed if an attempt is made to LOAD BACKUP whilst the Playback is switched to BACKUP.

6.3.2 Backup

During System Setup the condition of the BACKUP will be shown as OPERATIONAL or NON-OPERATIONAL. If the BACKUP has been independently reset it will be NON-OPERATIONAL, and loading the Backup will change the status to OPERATIONAL.

? - replaces ARE YOU SURE?
ERR - replaces ERROR.

7 SETUP

To select, use SETUP on the Command Keypad.

This will select the SETUP menu as shown below:

```
0 CLEAR MEMORY
1 LOAD MEMORY
2 RECORD DISC
3 LOAD BACKUP
4                          (reserved)
5                          (reserved)
6                          (reserved)
7 PRINTER
8 SPECIAL EFFECTS          (reserved)
9 SYSTEM SETUP
```

To select any item from the menu, press the appropriate push, which will be displayed on the VDU with the item - 0-3, or display the sub-menu 7 and 9.

However, it would not be possible to LOAD/CLEAR MEMORY if the Record Keyswitch was set to OFF, or to load the Backup System if the Playback Keyswitch was set to BACKUP.

Selections 0-3 inclusive will be implemented on the second operation of *.

Selections 7 and 9 would select sub-menus.

7.1 Clear Memory (Selection 0)

This will clear all system information except for the number of Channels, Dimmers, Groups and the ON/OFF status of Focus Remote and

Designers Remote.

7.2 Load Memory (Selection 1)

This will load the Memory from the Disc with the system attributes (e.g. number of Channels, Dimmers etc.) the Cues and the Stage state at the time the Disc was recorded.

7.3 Record Disc (Selection 2)

This will record the Disc with the total content of the Memory and the current state of the system.

7.4 Load Backup (Selection 3)

This will copy all Cues identified as Q' into the Backup.

7.5 Printer (Selection 7)

This selection will cause the following sub-menu to be displayed:

```
*****PRINTER*****
  0 CUE SHEET
  1 CUES
  2 GROUP
  3 PATCH
  4 SUBMASTERS
  5 PROFILES
  6
  7
  8
  9 HALT
```

Further selections (0-5) will cause the selection to be repeated against SETUP: and * will initiate the printout. At any time the printer may be stopped by selecting 9 and *.

7.6 System Setup (Selection 9)

Selection 9 will cause the following sub-menu to be displayed:

```
*****SYSTEM SETUP*****

0 CHANNELS      : 100
1 DIMMERS       : 100
2 GROUPS        :  10
3 NON-DIMS      :   0     (reserved)
4 MANUALS       :   0     (reserved)
5 REMOTE CONSOLE : OFF
6 FOCUS REMOTE   : OFF
7
8
9 CUES REMAINING : 229
```

Further selections 0-2 will cause selection to be repeated against SETUP:

The variation can then be input and then actioned *, however the first * will cause a warning CLEARS MEMORY!

Selections 5 and 6 are reversed by *, e.g. if the FOCUS REMOTE is OFF, * will turn it ON.

CUES REMAINING will be updated by the system as the system size is changed or CUES are recorded.

8 SETTING

After the number of Channels and Dimmers have been set up the system is ready for the operator to use for assembly of the lighting Cues and Cue Sheet. The Groups may be defined either during Setup or as they are required.

If the Channel numbers are not specified before *, the Wheel will default to control all Channels.

8.1 Channel Selection

Pushes 0-9, AND, > (Through) are used to select Channel numbers in any combination, the only limitation to this is that no more than 8 Channel numbers may appear on the Command line.

8.2 Group Selection

Group selection is initiated by use of the GROUP push followed by the Group number required. Once a Group has been selected, level control is effected in the same manner as for Channels.

Only one Group may be selected at a time and level selections will be proportional to the levels of the Channels in that Group.

8.3 Level Selection

The level mode is entered via the @ push, where level may be set from 0% to Full (100%) in steps of 1%. The first push after the @ will set the 10s% and the second, the 1s%, a trailing 0 is not required e.g. to set 20%, it would not be necessary to use the 0 push after the 2 push. The command would be completed by *.

8.4 Wheel

Once the Channel and/or Level Selection has been completed by *, the Channels would remain under control of the Wheel, until cleared by Clear or the input of new data. The Wheel effects a proportional control over Channels. Thus if 2 Channels are under control at 20% and 40%, raising the 20% to 30% (an increase in level of 50%), would raise the 40% to 60%.

The table below shows the Wheel effect on a set of Channels assuming control is maintained throughout:

Channel Number		1	2	3	4	5	6
Wheel Movement		Level					
Step	Total						
0%	0%	10%	30%	50%	80%	100%	0%
+50%	50%	15	45	75	100	100	0
+50%	100%	20	60	100	100	100	0
+50%	150%	25	75	100	100	100	0
-100%	50%	15	45	75	100	100	0
-25%	25%	12	37	62	100	100	0
-50%	-25%	7	23	37	60	75	0
-75%	-100%	0	0	0	0	0	0
+50%	-50%	5	15	25	40	50	0
+50%	0%	10	30	50	80	100	0

Channels under control (of the Wheel) will remain at the control level, regardless of any Playback action.

8.5 Remainder Dim

If used as part of a Channel/Group/Level command, will cause all Channels not under control to go to 0%.

CHANNEL 2 AND 7 > 20 @ 70 REM DIM * will set Channel 2 and 7 through 20 to a level of 70% whilst setting all other Channels to 0%.

8.6 Flash

This causes the level of the selected Channel(s) to alternate between 15% and Full. If more than one Channel is selected, and some of the Channels are at a level whilst others are at 0%, only those Channels at a level will Flash.

CHANNEL 2 AND 5 AND 10 FLASH * will cause Channels 2,5,10 to Flash, assuming those Channels are either all at 0% or all at a level greater than 0%.

The Flash will continue until the Command is cleared off the Display.

8.7 Return

The Return facility will cause the last Channel(s) controlled to revert to their level state before the latest Channel/Level or Playback Command.

Return *

If the same command is repeated before any other command, the levels will revert to those at the time before the first Return Command. Thus Return can be used to cause a set of Channels to alternate levels between two known limits, their level previous to their latest level and their latest level before the first Return in the sequence. If no Channels have been controlled, the command will affect all Channels.

8.8 Next/Last

The Next/Last pushes may be used for Lamp Sequence, where each Channel is, in turn, set to an operator defined level and as Next/Last is operated will set that channel to its old level and set the Next or Previous Channel to the level.

CHANNEL N @ FL * Where N is the first or last channel in the sequence to be checked.

Then, either,

NEXT would set Channel N to 0, and N+1 to Full

or,

LAST would set Channel N to 0, and N-1 to Full.

If any Channels are already at a level when selected by NEXT/LAST, they will go to full whilst selected and then revert to their previous level.

9 GROUP

A Group is defined as a set of Channels with associated Levels, which can be retrieved proportionally, via the Wheel or @ facility.

9.1 Group Set-Up

Enter Group mode via GROUP on the Display keyboard, then select the Group number from the Command keyboard.
GROUP N * where N is the Group Number required. The Display will then show the existing content of that Group.

To enter new information into the Group, proceed as in normal Channel/Level selection.

CHANNEL 1 @ 9 * etc.

Groups may be based on another Group.

Group N @ 90 * would set the contents of Group N at 90% of their level into the Group being set.

Other Groups may be selected in the same way or, sequentially via the Next and Last pushes on the Display keyboard.

9.2 Group Recording

A Stage state or part thereof may be recorded as a Group.

RECORD IN GROUP N * where N is the number to be allocated to that Group.

To only record part of a Stage state into a Group:

CHANNELS A + B etc. RECORD IN GROUP N *
ARE YOU SURE will be displayed if an attempt is made to over-record an existing Group.

10 CUE RECORDING

After a Stage state has been set and a permanent record of it is required, it can be copied into the Memory via the Record function.

Cue Numbers do not have to be allocated consecutively as the number will only exist once it is recorded, it would therefore be possible to have a sequence 1,2...21,101,102...133,201 etc.

The RECORD and CUE pushes are used to enter Cue Recording mode. The Cue Number should be input followed by the required attributes. e.g.

RECORD IN CUE N TIME T DELAY D PROFILE P *

Where N is the required Cue Number

T	Fade Time	999 seconds maximum
D	Start Delay	500 seconds maximum
P	Fade Profile	

If the attributes are not specified the Time will default to Manual, Delay to 0, and Profile to linear.

The attributes may be split between the Up and Down aspects of the fade by the use of the / push. e.g.

RECORD IN CUE 7 TIME 10/20 DELAY/10 * would give Cue 7 an Up fade time of 10 seconds, starting immediately and a Down fade time of 20 seconds, where the start is delayed by 10 seconds.

If the Cue Number has already been used, the * will cause ARE YOU SURE? to be displayed and if the over-recording is required, the second * will complete the action.

10.1 Automatic Follow-On

In order to cause a Cue to start automatically a defined time after

the previous Cue, the Wait facility is provided. The Wait is defined as the time from the start of the previous Cue to the start of the follow-on Cue, and is limited to a maximum of 500 seconds. Thus, allowance must be made for any Fade Time and Delay of the previous Cue.

CUE N WAIT Z * where N is the number of the previous Cue and Z is the wait required.

10.2 Hold

Any Cue or Cue Part may be defined as a HOLD fade. This is where the Fade will not automatically finish at completion of the fader travel, thus allowing the Fade to be reversed, the fade is finished by use of the Manual push above the relevant fader;

RECORD IN CUE N TIME HOLD, where N is the Cue Number.

10.3 Part Cues

A Cue may be recorded with up to 6 separate Parts, where each may be allocated its own attributes (although not more than 2 parts may have their attributes split between Up/Down fades).

This could be used, for example, to allocate a different Profile to a Channel driving a Projector used with other Lanterns.

The split may be done either during initial recording or after the Cue has been recorded.

(i) To generate Part Cues from the outset.

After the whole Stage state has been set, the procedure would be as follows;

CHANNELS N RECORD IN CUE Y PART Z etc. *

where Y is the Cue Number

Z is the Part Number (1-6)

N is the Channel Numbers required to be recorded in that Cue part.

This procedure would then be repeated until all Channels are recorded.

(ii) if the Cue had already been recorded, and it is then wished to re-record it into Part Cues.

First produce the Playback state on Stage, then proceed as in (i) above except that the balance of the Channels will default to CUE Y PART 6, and as each set of Channels is re-allocated to a Part, it will be cleared from Part 6.

10.4 Insertion

Additional Cues may be recorded between any two adjacent Cue Numbers, either, in the case of the two Number being consecutive, via the . (point) push or, in the case of non-consective numbers, onto one of the numbers falling between the two already used.

(i) consecutive;

RECORD IN CUE N . P etc * where N is the first of the two consecutive numbers and P is the insertion number (between 1 and 9).
It is possible to insert upto 9 '.' Cues.

(ii) non-consecutive;

RECORD IN CUE N etc * where N is the new number falling between the two existing Cue numbers.

10.5 Cue Only

Because the information recorded in a Cue is a Move instruction, it is possible that Insertion or Editing would cause unwanted changes in the following Cue states.

This can be avoided in two ways;

the first would be to modify the following Cue(s) to cancel out the effects of the Insertion or Edit;

the second would be to use the Q Only facility during the Insertion or Edit, which defines that any change in Channel Levels would only take effect for that particular Cue.

Q Only causes the following Cue to be updated, to restore the Channel levels from any modification.

However if a number of Q Onlys are recorded in forward sequence, it is possible that any Channels with a level modified to the same in two of the Q Only Cues will also be wrong in following Cues. This is noticeable where the later Q Only causes that Cue not to record a Move for the particular Channel i.e. convert a Move required from a previous insertion/modification to a not-Move. The system would then tend not to update the following Cue with the new instructions required to recover from the modification.

Note that an Insertion or Edit done without Q Only cannot be directly changed to Q Only, it would have to be deleted and restated using Q Only.

Insertion: RECORD IN CUE N etc. Q ONLY * where N is the inserted Cue Number.

Editing: refer to section 10.8 - Blind Recording

10.6 Editing

Editing is defined as modification to a Cue or Cue state and is possible at any time, unless the Record function is locked.

The Edit functions are as follows:

(i) Re-numbering: Because it is not necessary to have consecutive Cue numbers for sequential Playback, Cue numbers may be split into numerical group for ease of operation.

CUE N_1 @ CUE N_2 * where N_1 is the original number of the Cue and N_2 is the new number.

Notes: (a) Cue Numbering may not jump over existing numbers, e.g. if Cues 1, 11, 31, 32 are recorded, it would not be possible to move Cue 1 to 30 or Cue 32 to 12, but it would be possible to move Cue 11 to 2, Cue 31 to 3, Cue 32 to 4.

(b) When the Cue is moved Cue N_1 will cease to exist.

(c) If N_2 is not specified, the Cue will cease to exist.

(d) Any WAIT instructions amongst the Cues to be re-numbered must be deleted and before re-numbering and restated later.

(e) A Cue can be renumbered into a part Cue.
CUE N1 @ CUE N1 PART P *

(f) A Cue can be renumbered into a part of another Cue, but the Parts cannot jump over each other and the second Cue must already be a Part.
CUE N1 @ CUE N2 PART P *

(g) If Part Cues are being renumbered, the Part number on the new Cue Number will be added automatically.
CUE N1 PART P @ CUE N2 * will add the same part P to Cue N2.

(h) Part Cues may be internally renumbered, but again Part numbers may not jump over each other.
CUE N PART P1 @ CUE N PART P2 *

(ii) Attributes: to modify any of the attributes of a CUE, the following action is necessary.

CUE N ATTRIBUTE X * where N is the number of the Cue whose Attribute

is required to be altered: ATTRIBUTE is either TIME, DELAY, PROFILE or can be any combination: X is the new value of the Attribute. It is not necessary to specify the Attributes that are not changing.

10.7 Auto Record

This facility is provided to allow the Designer to record Fade times live.
Fades would be recorded with Manual Time. During Playback the Record Keyswitch is set to Auto.

When the fade is started, the Cue Time will be updated with the actual time taken to complete the Manual fade. This will normally add a Delay to the fade (caused by the delay from the operation of the GO push to the instant of moving the fader from 0), the Delay can be removed by editing.

10.8 Blind Recording/Modification

Cues may be recorded/modified blind, by entering Cue display mode. Once Cue display mode is selected, the Cues may be accessed sequentially via the Next/Last pushes or non sequentially by entering Cue number and *. Then recording may be considered the same as modification except that a new Cue number would have to be created before any new Cue can be "Recorded", the Cue number would be created live.

Q Only would be used during editing, but as each Channel Level was changed, Q Only would be added to the Command Line. Attributes may be added to new Cues "Blind" or "Live".

CUE (on the display keypad) enters "Blind" mode:
then NEXT or LAST accesses each Cue sequentially,
or CUE N * accesses Cues non sequentially, where N is the required Cue number (CUE on the Command keyboard).

Channel Y @ Z (Q ONLY) * modifies Channel Levels, where Y is the

Channel number, Z the Level. Q Only would be used during editing to avoid unwanted follow-on effects.

10.9 Back-Up

As cues are recorded, they will also be identified as 'Back-Up' cues by '.

If a Cue is not required to be transfered to the back-up, the ' can be deleted by the Back-Up push.

CUE' N BACKUP * where N is the number of the Cue not required for Back-up. This will cause the ' to be cleared from the display.

Similarly, a non-Back-up Cue may be added to the Back-up by adding a '.

CUE N BACKUP *

The ' will now be added.

10.10 Track

The track facility is provided to allow the operator to follow a Channel through the Cues in which it 'Moves'.
The display changes to Cue mode, displaying the nearest Cue, at the time of implementation, in which a Move occurs. Next/Last then steps through the Moves.

CHANNEL N TRACK * where N is the channel to be tracked.

NEXT/LAST would then step through the Cues displaying those in which the Channel Moves.

11 PLAYBACK

The Playback has the capability to run 6 Fades, of which 2 may have split Attributes. If more than this number of Fades is started, the oldest Fades will be dumped, uncompleted.

Fades are initiated by the GO push, except when started automatically by the Wait instruction, which will cause the next Fade to start after a defined time.

In normal use, the only Operator action necessary would be to use the GO push when required.

Fades may be stopped at any time, by the STOP/REV push and restarted by the GO push. If no Fade is running, the STOP/REV push will cause the last Cue to reverse, using a time of approximately 1 second and restore the Stage to state before the last "GO".

11.1 Rate Wheel

The Rate Wheel affects the Clock used for Fade timing and will, therefore, change Time, Delay and Wait.

Each time a Fade is started, either by "GO" or by a Wait instruction, the Rate will be restored to 100%.

The range of control is:

#1000% (displayed as 000%) the timings will be divided by 10,
e.g. a 300 second Fade would complete in 30 seconds

#1% the Timings will be multiplied by 100,
e.g. a 40 second Fade would complete in 4,000 seconds.

#0% (displayed as STOP) the timings will be stopped.

Note

If a Fade has been stopped on the Rate Wheel, the GO push will restart this Fade and also start the next Cue.

However, a Fade stopped by "STOP/REV" may be restarted on the Rate Wheel.

11.2 Manual Fades

Manual Fades are faded by the operation of the relevant fader, which must be at the bottom of its travel, before any Fade action is initiated.

The Fade will complete, when the fader reaches the upper limit of its travel, and if the Fade is split, when both faders are at their upper limit. Therefore, it may be reversed if only partially completed.

Operation of the Manual push will terminate control of the Fade whatever its current progress.

11.3 Hold Fades

Hold Fades may be considered to be identical to Manual Fades, with the exception that the Fade will not complete until the Manual push is pressed.

11.4 Manual Intervention

(1) Independant - each Fade may be independantly converted to a Manual Fade by the appropriate Manual push.

(2) Total - every Fade may be converted to Manual by the Rate push and then all Fades will be controlled by the Rate Wheel.

Notes

(i) On conversion to a Manual Fade, the fader/Wheel will have effect in the same way as a Manual Fade and will fade over the full travel, effectively maximising the control.

(ii) Fades, taken over Manually, will continue to fade using a Linear Profile, whatever Profile was allocated.

11.5 Go To

The GO TO facility is provided to allow Cues to be accessed out of sequence.

It is also provided on the Focus and Designer's Remotes, to enable Manual Cues to be faded, as the Manual facility is not available on these two units.

GO TO Q N TIME T * where N is the Cue Number and T the Fade Time required. If TIME is not specified it will default to approximately 1 second.

If TIME is specified, but not T, it will default to Manual and be controlled by the Rate Wheel. A split time cannot be specified.

12 SUBMASTERS

Each Channel may be uniquely allocated to 1 of 9 Submasters and then, that Submaster has the final control over its allocation.

The control is effected as a proportional raise or lower in the levels of the Channels allocated.

The maximum level setting on a Submaster is 150%, i.e. if a Channel has a level of 67% or greater, that level will go to Full, a level of 50% would become 75% etc.

Select Submaster display, then select the Channel number, followed by the Submaster number.

SUBMASTER: CHANNELS N @ SUBMASTER Z *

Where N is the selection of Channels and Z is the Submaster to which the selection is to be allocated.

If a Channel is allocated to a further Submaster, any previous allocation will be cleared.

13 PATCH

Each dimmer may be uniquely allocated to a Channel and will then be controlled by that Channel.

Select Patch display, then select the Dimmer number, followed by the Channel number.

PATCH: DIMMERS N @ CHANNEL Z *

Where N is the selection of Dimmers and Z is the Channel to which the selection is to be allocated.

If a Dimmer is allocated to a further Channel, any previous allocation will be cleared.

If no Channel number is specified, the Dimmers will remain inactive until the Patch is again altered.

14 PROFILE

It is possible to specify up to 9 non-linear Profiles (Fade Progress versus Output Progress) with the condition that at the start of the Fade the Profile is 0% and at the end 100%.

Select Profile display, then select the Profile to be altered using Next or Last, this will be indicated by the white square on the display against the Profile number.

Then the 10s percentage of the linear profile is selected followed by the required Fade Profile percentage.

PROFILE: (NEXT/LAST until the Profile number is selected)

10% @ 33 *
20% @ 48 *
30% @ 22 * etc.

If the 3rd figure is not input, i.e. the units percentage of the Output Progress, it will default to 0. The system will extrapolate the curve from the input values, to ensure that the Output Progress is free of sudden steps (as far as possible).

15 DESIGNERS' REMOTE

This optional part of the system can be considered as a duplicate of the right hand portion of the Console from and including the STOP/REVERSE and GO pushes; may be inhibited/enabled during SETUP.

All functions available are direct duplicates of those on the system, thus the only facilities not available are as follows:

Keyswitches
Submastering
Manual intervention on playback - Faders and Rate Wheel.

It is possible to use the Remote for Playback Control, resorting to the GO TO facility or editing to overcome the unavailability of Manual intervention.

For details of operational facilities, refer to the appropriate sections of these notes for the Console.

Also refer to the warning at the end of section 16 Focus Remote.

16 FOCUS REMOTE

This option is provided, in a small hand-held unit, to allow the operator to control the system from a remote position. It may be connected directly to the Console or via extension cables.

The unit only works in stage display. Should any other display mode be selected, any operation on the unit will cause the display mode to revert to Stage.

The facilities provided are:

Level setting - Channels and Groups using the same procedures as the Console.

Playback control - GO, STOP/REVERSE and GO TO using the same procedures as the Designers Remote, except that it is not possible to change any Cue attributes by editing.

SET - this extra facility allows the operator to set Channels to a predetermined level and step through the Channels, via NEXT & LAST. CHANNEL N SET (Note: * is not required) where N is the Channel Number.

NEXT/LAST would step through the Channels in forward or reverse order, leaving only the Channel selected at the set level, unless that Channel was already at a level.

Whilst a Channel is under control of SET, its level may be altered via the 'FADER WHEEL' giving a different level for the SET facility, however this level will revert to Full as soon as the use of the SET facility lapses.

Note the Channels that are 'SET' to a level can then be controlled normally, but are not 'SET' to 0% if the SET facility if cleared.

Warning

The Designers Remote and Focus Remote Keypads act as if they are in direct parallel with each other and the Console Keypads, and are therefore directly interactive; any operation on one part of the system can only be assured of success if the other parts of the system are left untouched.

17 PRINTOUT

17.1 Technical Specification

ANADEX Model DP-8000

Mains input: 220 - 240V. a.c. 50Hz. or
110 - 120V. a.c. 60Hz.
120 Watts nominal.

Environment: 5°C to 45°C
Humidity 10% to 85% R.H.
"Office" level cleanliness.

Paper : Fan fold
Width - 241 mm (9.5") including 12.7 mm (0.5")
Sprocket hole margins on each side.
Length - 279 mm (11").
Sprocket Hole Distances -
12.7 mm (0.5") longitudinally
229 mm (9.0") laterally
4 mm (0.16") diameter
Max Thickness - 0.45 mm (0.018")
Loaded throughbottom or rear of printer.

Ribbon : Unicolour 12.7 mm (0.5") wide, standard
Underwood plastic spool.
Please read Warning overleaff

Physical : 472 mm (18.6") wide
360 mm (14.2") deep
185 mm (7.3") high
10 kg weight

WARNING

Although many types of ribbon are available on standard 12.7 mm Underwood spools, not all of these are acceptable for use with this printer. Ribbons used with this printer must be dye based and made expressly for dot matrix printers. Additionally, some ribbons contain an eyelet located near either end of the ribbon supply. Use of this type of ribbon will cause a catastrophic failure when the printhead contacts the eyelet.

The User is advised to purchase spare ribbons direct from Rank Strand.

17.2 Ribbon Installation

The top cover of the printer must first be removed. This is achieved by first ensuring the power is disconnected, then applying a slight outward pull on either side of the top cover, and simultaneously lifting it upwards clear of the printer.

Hold the two spools horizontally, one in each hand, so that the ribbon running between the spools is on the side facing you, not the far side. The ribbon is now installed by pressing the left spool firmly on its ratchet gear and threading the ribbon across the face of the printhead, following the path depicted below. Once threaded, press the right spool firmly on its ratchet gear, and rotate it counterclockwise to remove any slack in the loop.

Fig. 17.2.1

17.3 Paper Installation

The printer is designed to be used resting normally on a bench or table with paper access through the rear. If this is not convenient, an alternative paper access slot is provided through the bottom of the printer, for those applications which require pedestal mounting.

Paper may be installed with the top cover in place either through the slot in the bottom of the printer or through the slot in the rear of the top cover. To preclude the possibility of catching the ribbon when the paper is inserted, the printhead should be at either the extreme left or right end of its travel. If it is not, this may be achieved by turning the printer on.

Grip the two paper hold down springs, one on each sprocket wheel, and gently pull them away from the machine until they reach the click-stop, where they will remain clear of the sprocket wheels. Thread the paper through the selected patch, and feed it up until it appears around the sprocket wheels. Engage three or four of the sprocket pins with the sprocket holes on either side of the paper. Push the paper hold down springs back into position against the sprocket wheels to hold the paper in place.

The chrome lever located on the right hand side of the mechanism directly above the paper feed ratchet gear is the manual paper advance. Pulling the lever forward and releasing it will advance the paper one line at a time. Pulling and holding the lever forward unlocks the paper feed mechanism, allowing paper to be pulled forwards through the mechanism.

When the printer is first installed, or when changing to a new type of pre-printed form, the position of the printed lines may require fine vertical adjustment with respect to the sprocket holes. This may be achieved as follows:

First ensure that power is disconnected. Then remove the top cover as described in section 17.2. Loosen the large black knob on the right hand side of the mechanism directly below the paper feed

ratchet gear, by turning it counterclockwise. Moving the knob backward or forward moves the paper vertically with respect to the print position. Once adjusted for the particular form to be used, tighten in place by turning the knob clockwise.

17.4 Setting Top of Form

The Printout is formatted such that the first line printed will be at the line set as Top of Form and each time the Printout is initialised or does a page break, it will advance to the same position before recommencing printing. Because this will only be remembered whilst the Printer is switched on, it will normally be necessary to reset the Top of Form each time it is used.

To do this, turn the printer on. On the console of the printer are two buttons marked 'FEED' and 'TOF SET' (Top of Form set). When the feed button is pressed, the printer will feed the paper forward one line, pause, and then continue feeding at approximately ten lines per second until the button is released, or the current Top of Form is reached. To continue feeding, release and repress the FEED button. Operation of this button and the Manual lever on the right hand side of the paper sprocket mechanism allows the User to position the paper so that the printhead is on the desired Top of Form line of the paper, normally 3 lines down from the perforations. By pressing the button marked TOF SET, this position will be memorised by the printer as the Top of Form for all subsequent forms.

Note that when power to the printer is turned on, the current position of the printhead on the paper is automatically set as the Top of Form; consequently, adjustment is only necessary if this position is not the desired one.

17.5 On Line

In order to use the Printout, the Printer must be "On Line". This condition is normally set automatically on switch on, but if it is not, it can be set manually by operating the On Line switch adjacent to the indicator, which should then illuminate.

If it is desired to stop the Printout immediately, this can be

achieved by setting the printer 'Off Line', i.e operating the 'On Line' switch to extinguish the 'On Line' indicator.

17.6 Operation

Refer to section 7.5 - Printer.

18 BACKUP

The Backup system comprises a set of independent electronics which can be switched to drive one of the Console displays, showing level information for 50 Channels at any time, the balance may be selected using PAGE; and uses the same outputs as the Console to drive the Dimmers.

It has a Keypad unit enabling Channel/Level setting, Playback Control and simple Recording.

To select Backup, the Playback switch should be set to BACKUP.

In normal use, the Backup system is loaded with the same Patch and Cue information as the Console and during Playback, will track the Console, so that on switching to Backup, the outputs will be virtually unchanged and the Playback will be in the right place to continue.

18.1 Loading

To load from the Console:

SETUP 3 LOAD BACKUP *, on completion the display will add TRANSFER O.K.

Note: after a DISC TO MEMORY transfer has been completed the display will show (TRANSFER O.K.) RELOAD BACKUP?

Conditions:

(i) should the number of Cues exceed the storage capacity of the Backup, the display will show TRANSFER O.K. TO CUE N where N is the last Cue Number transmitted. In this case some Cues would have to be deleted as Backup Cues, refer to section 10.9, and the transfer restarted.

(ii) Part Cues transfer as one integral Cue.

(iii) Cues transfer correctly except that the Cue Number would show as the integer only e.g. Cue Number 7, 17.2, 17.5, 18 would be displayed in the Backup as Cue Numbers 17, 17, 17, 18 although the information for individual Cues would be Correct.

18.2 Playback

On changeover to Backup, the Stage state will be displayed and on the bottom line of the display, Cue information in the form: FADE N * where N is next Cue in the Playback sequence. READY will be added to the display line when the Fade is ready to start. Fading is achieved manually and on completion of each Fade, the next Cue will be displayed and will start when the fader is next moved from the lower limit of its travel.

Cues may be called out of sequence whilst in Stage mode;

FADE N * where N is the Cue Number required. In the case of transferred '.' Cue Numbers, it would jump to the first Cue when the Number is used.

18.3 Channel/Level Selection

The Keypad allows Channel/Level selection in the same way as that on the Console, refer to section 8. However, as the Fader Wheel facility is not available, it is, therefore, not possible to control all Channels by not specifying any Channel Number.

18.4 Recording Live

Once the Stage state is set, Recording is possible by:
RECORD N * where N is the Cue Number and may be any integer between 1 and 999.

18.5 Recording Blind

This is achieved by entering CUE mode, the Channel/Level selection can then be made in the same way as Blind Recording on the Console. Obviously, once in Cue mode it is possible to preview any Cue, e.g. CUE N * where N is the Cue Number required. The display will show the last Cue state. The Channel/Level selection can then be made, and will be recorded each time a selection is completed by *.

18.6 Next

The NEXT facility is available whilst in Cue mode, to allow Cues to be previewed or edited sequentially.

********** MAINTENANCE **********

1 INTRODUCTION

The Light Palette system does not require any routine maintenance except to check that the fan, mounted on the Power Supply Unit, is operating.

Cleanliness is important to maintain trouble free operation and it is recommended that the Control Room should be kept at a standard of cleanliness equivalent to that found in modern offices.

When cleaning the equipment, it is important to prevent cleansing agents such as foams obtaining ingress to the pushes, Wheels, faders, keyswitches and Floppy Disc Unit.

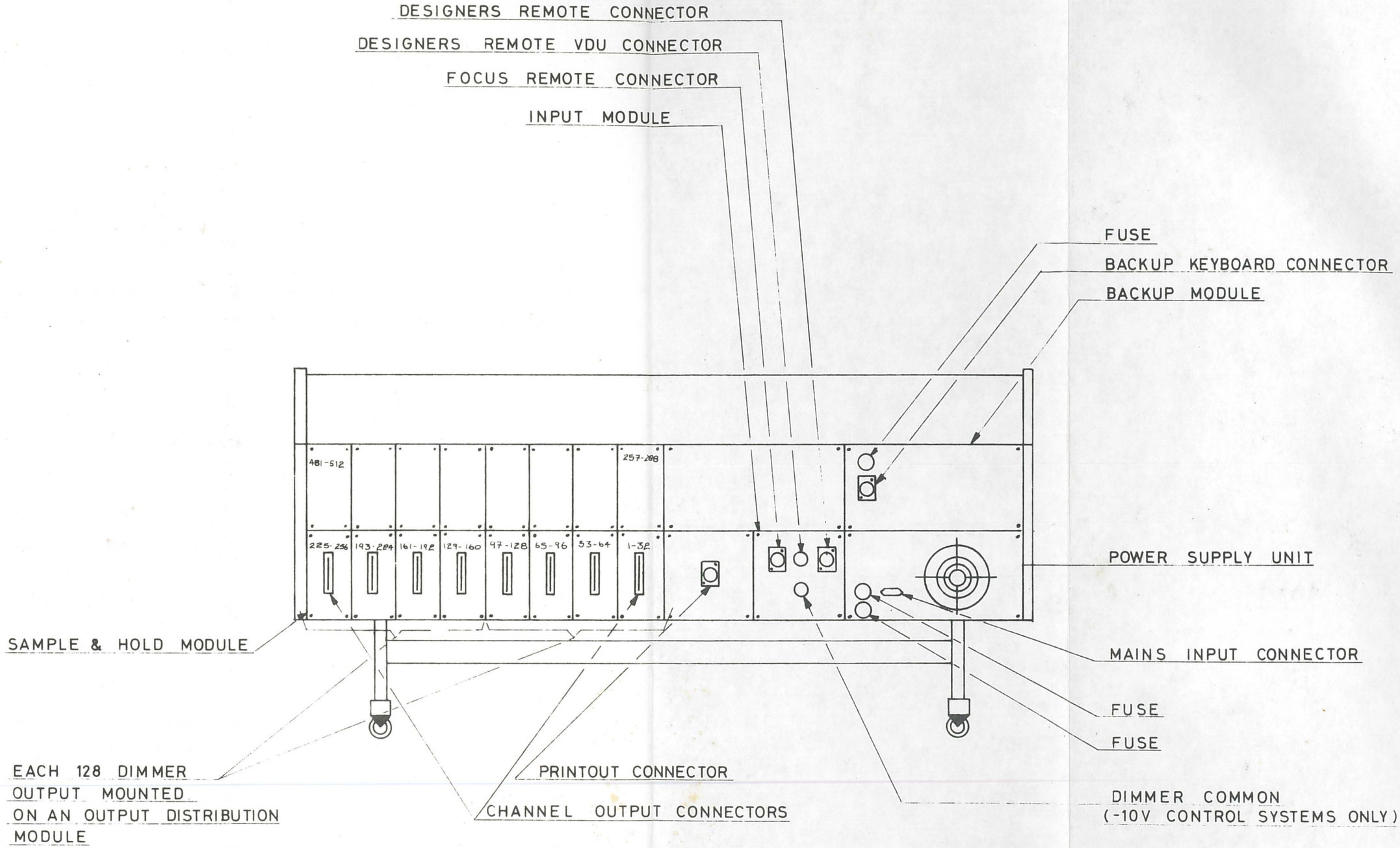
The equipment is specified to operate correctly between temperatures of 0°C and 35°C with relative humidity up to 95%. Any prolonged exposure to temperatures above 35°C could cause degradation in equipment reliability.

Figure 3 shows details of the rear of the system including fuse location.

Warnings

1. Disconnect the power cable before attempting exchange of user replaceable parts.

2. Do not plug or unplug any part unless the power cable is disconnected.



LIGHT PALETTE
GENERAL LAYOUT
REAR VIEW FIG.3

2 USER REPLACEABLE PARTS

The items that are considered fully Operator Maintainable are:-

2.1 Sample and Hold Modules

These units are mounted on the rear of the equipment. Each module drives 32 Dimmer Lines and is connected via a 36 way connector.

Removal is accomplished by withdrawal of the top mounting screw and then slackening the lower screw sufficiently to enable withdrawal of the unit.

Internal connection is via a 10 way socket assembly.

Replacement is accomplished as a reversal of the removal procedure. However, care must be taken in alignment of the 10 way connector onto the plug pins.

2.2 Output Distribution Module

These units are mounted behind the Sample & Hold Modules and are the Motherboard for the Sample & Hold Modules. Each Output Distribution Module mounts up to 4 Sample & Hold Modules.

Removal is accomplished by removal of all the Sample & Hold Modules mounting on the particular Output Distribution Module, together with any blank panels, should the system size not be a multiple of 128 Dimmers, including the removal of the lower retaining screws. The Output Distribution Module can then be withdrawn from the system and disconnected, by unplugging the 10 way flat cable connector.
The attitude of this connector should be noted, as it is not polarised.
Reinsertion of the cable either way will not cause damage, but will cause the Output Distribution Module to respond to signals for either Dimmers 1-128 or Dimmers 129-256.

2.3 Fuses

There are three external fuses mounted on the rear of the unit.

(i) Backup - 1A fuse mounted on Backup Module.

(ii) Power Supply - 5A fuse - Fan
1A fuse - System

Note: the Fan should be checked on a regular basis for correct operation. Fan failure may cause overheating.

All fuses are 1 1/4 x 1/4 inch glass.

3 FAULT DIAGNOSIS

These hints are provided to assist the User describe the fault to the appropriate Service Department. Refer indicates action required by Service Department.

Fault	Possible Cause	Action
System/Backup not functioning	Fuses Mains Power	Check Fuses Check Mains Power
1 or more Channels in a block of 32 not functioning	(i) Sample & Hold Module	Replace
	(ii) Output Distribution Module	Replace
Channels failing in definite patterns e.g. every odd Channel, every even Channel, blocks of 2,4,8,16, 32.	Output Distribution	Replace
VDU failure	Use SWAP until replaced	Turn off power to VDU,(switch is part of brightness control)
Floppy Disc will not handle Diskette	Diskette dirty or faulty	Try other Diskettes If no Diskettes function, Refer

Fault	Possible Cause		Action
Memory clears when playback switch set to off for short periods	Batteries not charging		Refer
Backup not operational	Backup Memory corrupted	(i)	Switch to Backup whilst holding Backup Keypad Clear
		(ii)	reset Backup by removing Backup fuse whilst non-operational.
		(iii)	Refer.
System displaying rubbish on VDUs & but not otherwise working	Batteries totally flat	(i)	leave for 1 hour with Mains power with Playback Keyswitch set to OFF.
		(ii)	Use reset push mounted under Power Supply Unit to check function.
		(iii)	Check Mains Voltage is within 10% of nominal value.

Fault	Possible Cause	Action
Printer Mains On Indicator does not illuminate	1)Mains supply missing or input fuse blown 2)Power Supply fault 3)Internal Fault	Restore or replace Refer Refer
Printer inoperative but Mains Indicator illuminated and paper advance functioning	Printer out of paper, or otherwise "Off Line"	Rectify as appropriate
Printer inoperative but Mains Indicator illuminated and paper advance not functional	Internal fuse ,located on circuit board to the right of the print mechanism blown	Refer

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A DIVISION OF RANK AUDIO VISUAL

Please amend your copy of the Light Palette Users Handbook - Version J4, Backup 3 as follows:

i) Page 15 - Line 16
■ Indicates the Cue.....

ii) Page 15 - Line 18
> Indicates the Cue.....

iii) Page 16 - Line 2 (Fig. 2.1)
> Q'2 Time 17/30 Delay /17

iv) Page 16 - Line 3 (Fig. 2.1)
■ Q'3 Time 10

v) Page 18 - Line 3
The ■ indicates.....

vi) Page 40 - Line 3
.....numerical sets for ease.....

Note also that any text which is UNDERLINED indicates a panel push or sequence of pushes.

Finally, please insert the following figure on the space provided on Page 53.

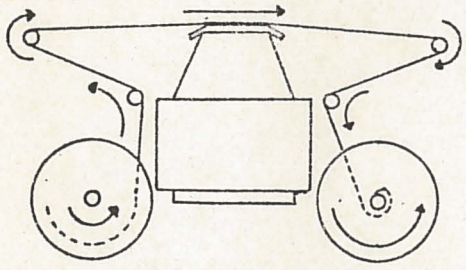

Fig 17.2.1

We apologise for these omissions and request notification of any further errors detected by the reader.

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