Sabre

User's Guide

Compulite R & D

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CHAPTER 1
INTRODUCTION

The Compulite Sabre offers designers and operators quick and easy access to the parameters of automated luminaries, conventional dimmers, and color scrollers. Sabre controls up to 196 moving lights and up to 1024 channels for dimmers, color scrollers, or any other device controlled by DMX 512.

Sabre includes many user friendly functions that allow you to customize the system to suit your needs.

This User's Guide contains 32 chapters and 2 appendices.

The User's Guide is divided into 8 parts.

Part 1 - General

- **Chapter 1 Introduction**
- **Chapter 2 General Operation**
  A concise overview of operational features, such as the Editor, Playback Devices, Soft Keys, Display Formats, and On Line Help.
- **Chapter 3 Displays**
  Descriptions of the different displays available in Sabre and operating instructions for Display control.
- **Chapter 4 Quick Start**
  This chapter provides operating instructions for the most basic functions on Sabre. Its purpose is to provide quick instruction to operators familiar with lighting consoles.

Part 2 – Basic Programming

- **Chapter 5 Selecting and Editing Spots**
  Operating instructions for basic moving light (spot) selection, advanced selection sequences, spot parameter selection, and assigning parameter values.
- **Chapter 6 Selecting and Editing Channels and Scrollers**
  Operating instructions for basic channel and scroller selection, advanced selection sequences, and assigning dimmer and frame values.
- **Chapter 7 Programming Memories**
  Basic programming functions, including using the Call function, how to convert memories to editor groups, assigning Fade Times, programming in Blind mode, and inserting memories.
- **Chapter 8 Modifying Memories**
  Operating instructions for basic memory modification, quick modification for memories assigned to playback devices using the STORE STORE function, and Delta tracking modification.
- **Chapter 9 Libraries**
  Operating instructions for programming, modifying, and using Libraries.
- **Chapter 10 Loops & Links**
  Programming memories with Loops to run as Chasers on the controllers or on the crossfader. Linking non-sequential memories.

Part 3 – File Management and Printing

- **Chapter 11 Data Storage, Retrieval, & Printing**
  How to record and Load show files from the Hard Disk and from floppy diskettes, navigating the Hard Disk, printing options.

Part 4 - Playback

- **Chapter 12 The Crossfaders**
  Making assignments to the A/B crossfader, playback using automatic Go commands or manual operation, and automatic Rate control.
- **Chapter 13 Controllers, Submasters, and Joystick**
  Assigning memories, groups, and Chasers to the Controllers. Using the automatic Go and manual playback operations. Rate control for Chasers. Assigning groups of spots and channels to Submasters. Using the Joystick for pan and tilt control.
- **Chapter 14 Q-Keys**
  Using the Numeric Soft Keys in Q-Key mode for memory playback.
- **Chapter 15 Control Priority**
  A description of Sabre's default control and using LTP.

Part 5 – Advanced Editing

- **Chapter 16 Q-Lists**
  Arrange your memories in Q-Lists for efficient playback. Sabre supports 100 Q-Lists.
- **Chapter 17 Groups**
  Program Groups for quick spot and channel selection. Sabre supports 999 Groups.
- **Channel 18 Palettes**
  Programming Palettes and using Palettes for quick editing. Palettes are a non-tracking data base for spot parameter values, scroller frame values, and channel intensity.
- **Channel 19 Filter**
  Programming memories with parts. Each Part can have unique delay and fade times.

Part 6 – Advanced Topics

- **Channel 20 Effects**
  Modifying pre-programmed Effect Palettes, programming custom Effects, and Effects playback,
- **Channel 21 Part Qs**
  Programming memories with parts. Each Part can have unique delay and fade times.
- **Chapter 22 Macros**
  Sabre supports up to 999 Macros. Operating instructions for programming Macros blind, in the Macro menu, or live using the Teach macro function.
- **Chapter 23 Snap**
  Store 'snapshots' of all playback device assignments and their fade status. Snaps are analogous to preset pages for Controllers. Sabre supports 99 Snaps.
- **Channel 24 Event**
  Program Events to operate multiple assignment and playback commands. Events can be operated when assigned to memories sequencing on the A/B crossfader, in the editor, or using SMPTE.
- **Chapter 25 Leader**
  Use the Leader setup for quick simple effects. The Change Venue option automatically updates Libraries.

Part 7 –Configuration and Patching

- **Chapter 26 System Configuration**
  General system Configuration in Service Tools and using operator definable system parameters in the System Parameters menu.
- **Chapter 27 Spot Management and Patching**
  The Mix Output menu provides functions to patch moving light type to control numbers, assign DMX output addresses, define device profiles.
- **Chapter 28 Channel and Scroller Patching**
  The Channel Patch provides functions for soft patching dimmers and channels, assigning dimmer curves, assigning proportional levels to dimmers, examining patch assignments. The Scroller Patch provides easy functions for setting up frames, assigning control channels to scrollers, and copying scroller set ups.

Part 8 - Communication Protocols

- **Chapter 29 MIDI**
  Enable MIDI communication and edit MIDI codes in the MIDI menu. The MIDI synch option allows a second lighting console to synchronize crossfade operations with the main console.
- **Chapter 30 SMPTE**
  Assign SMPTE time codes to Events using the live Teach function and enable Sabre for automatic operation using SMPTE.
- **Chapter 31 DMX Input**
  Patch DMX Input channels to operate local console channels or macros.
- **Chapter 32 Ethernet**
  An introduction to Ethernet.

Appendices

- **Appendix A Service Tools**
  Operating instructions for disk formatting, the Hardware diagnostics tool, and software upgrade functions in Service Tools.
- **Appendix B Panel Layout**
  A short description of each panel key arranged in alphabetical order.

Common Terms

Three major capabilities are basic to the lighting console: editing, playback, and patching.

Editing is the ability to select channels or moving lights, assign values, and record the resulting lighting state as a memory (cue). All functions related to the playback structure of the show, such as Event assignments, Snaps, loops, and Links are part of the editing functions.

Playback is the ability to replay all the show data that you have created while editing.

Patching includes all of the patching functions which instruct the system how to communicate with conventional projectors, color scrollers, moving lights, and other DMX512 protocol elements that are controlled by the lighting console.

Editing terms

Here a few terms common to all Compulite consoles.

- Channel - The control channel for DMX512 devices, which are not moving devices. These include conventional projectors, color scrollers, smoke machines, etc.
- Delta - A tool for memory modification.
- Erase - Delete selected data.
- Frame - Scroller frame.
- Intensity - Dimmer intensity of channels and spots.
- Libraries - Gobo, Color, and Position libraries form a database used when programming memories.
- Memory - is analogous to cue. The group in the editor, comprising the lighting state on-stage, is stored as a memory. Memories are then played back.
- Modify - Change stored information and fade rates.
- Parameters - The attributes of moving devices.
- Present or active (in the editor) - Channels and spots that are displayed in white. Everything present/active in the editor is included when recording a memory.
- Q List - Q Lists are independent entities. Each Q List can contain memories numbered from 0.1 to 999.9.
- Selected (in the editor) - Channels and spots that are displayed in red and therefore can be assigned intensity or scroller values.
- Spot – Moving light
- Store - Save the information in the editor.
- Value - The numerical value assigned to a parameter or a dimmer.

Playback terms

- End Stop - When crossfaders or the controllers are at either 0% or 100%.
- Go - Initiate an automatic crossfade, controller fade, or chaser run.
- Hold - Stop any fade or chaser in progress.
- Multifade - Initiate a fade to the next memory in sequence before the fade in progress is complete.
- Off the End Stop- When the crossfaders or the controllers are at more than 0% or less than 100%.
- Rate - The rate at which channels and spots fade in or out during a crossfade. The rate at which a chaser runs.
- Sequence - The numerical sequencing of the memories on the A/B or C/D crossfaders.
- Step - Manually moving from the current memory to the next memory of a chaser.

Console Areas

Editor section

Numeric keypad for number selections

All basic programming keys

Keys for display control.

Numeric Soft Key section

50 Numeric Soft Keys

Numeric Soft key mode keys

Parameter control

The trackball

6 horizontal parameter wheels

2 vertical parameter wheels

Parameter selection keys with LEDs

Wheel bank selection keys, LED parameter displays

LED spot type window

Keys for trackball control.

Crossfader section

A/B crossfader with LCD windows for current and incoming memories

C/D crossfader with LCD windows for current and incoming memories

Crossfade command keys

Rate Wheels

Rate wheel selection keys

Bar graphs for each crossfader showing the rate and level.

The Controller section

24 controllers

Each controller has a bump button

Assignment keys for each controller that are also used for chaser commands

3 LED displays with 2 display modes

3 dedicated inhibit submasters

A General Master with a blackout key

Text conventions

- Front panel KEYS are typed in **BOLD** and are contained in square brackets.
- Menus are in capitalized like names.
- *Messages* are in *italics.*
- # refers to a number entered on the numeric keypad.

- NSK refers to the Numeric Soft Keys.
- Command line refers to the sequence of keystrokes executed and displayed in the line at the bottom of the display monitor.
- 'Prompt line' refers to prompts occurring in menus. The prompt lines are *italics*.
- Desk, console, and system are used interchangeably, as are memory and cue.

Using the User's Guide

Getting Started

If you are using the system for the first time, you may want to consult Chapter 26 System Configuration, Chapter 27 Channel Patching, and Chapter 28 Spot Management and Patching.

New users

If you are new to lighting consoles or are unfamiliar with Compulite consoles, familiarize yourself with the information in chapters 2 – 13. These chapters provide general information and give you the building blocks to program and modify memories (cues), and play them back. Chapters 14 – 32 deal with advanced functions.

Experienced users

If you have experience with lighting consoles, are familiar with Compulite consoles, or are just plain impatient use Chapter 4 Quick Start and the on-line Help.

Output Conventions

Sabre uses HTP (Highest Takes Precedence) for conventional channels.

Scroller frames and spot parameters are subject to a rigid control hierarchy.

The console can be configured to work in LTP (Latest Takes Precedence) mode. Consult Chapter 15 Control Priority for more information.

The Editor always overrides any other control devices.

CHAPTER 2
GENERAL OPERATION

This chapter includes:

The Editor Section

The editing keys are used to:

- Select spots
- Select channels
- Assign intensity and parameter values
- Program memories
- Manipulate the display.
- Assign memory attributes such as Loops, Links, and Part Qs.
- Change the default QList

The editor works in live or blind modes. In Live mode any alterations made to the stage picture are visible on stage. In Blind mode, memories are programmed or modified without any interruption of the active stage picture.

The numeric keypad is used for number selections. Many numeric selections can also be done on the Numeric Soft Keys.

Keystrokes appear in the command line at the bottom of the display on all monitors.

Spots and channels are selected in the editor, assigned intensity and parameter values. This editor group is then recorded as a memory.

F keys

The Function (F) keys are multi-purpose soft keys, generally used while working in menus. When the system is not in menu mode, **F1-F5** offer immediate access to Macros 1-5. **F6** accesses all the rest of the Macros. In menu mode these keys access the convenient menu functions and options. These keys are also used for Delta application.

Programming memories

Memories are programmed by selecting channels and assigning intensity values or selecting spots and assigning parameter values, then storing the resulting stage picture.

Each memory may be programmed for the following information:

- Fade in and out time, from 'cut' to 999.9 seconds.
- Delay, wait in, and wait out time, from 'cut' to 999.9 seconds.
- An automatic follow-on memory created by using the loop function.
- Loops containing any number of memories.
- Links between non-sequential memories.
- Event assignments that automatically operate multiple functions
- Parts
- Text

Editor color key

Color	Status
Red field	Spots and channels selected in the current editor. Spots and channels displayed in red can be assigned intensity levels and parameter values.
White field	Spots and channels that are present in the current editor. When storing an editor group as a memory the spots and channels displayed in white and red are included in the memory.
Dark blue	Spots and channels selected under memory modification (see Chapter 9 Modifying Memories).

Editor error trapping

Sabre has efficient error trapping, meaning that you cannot go too far wrong. An illegal key press is immediately recognized. If you make a mistake the system displays messages such as *Illegal Number* or *Invalid Sequence.*

To get rid of this message and continue working, press the correct key. The correct keystroke clears the error and allows the operation to continue.

Clearing the editor

You can clear the editor by pressing either **[RESET]** or **[CLEAR]**.

Using [RESET]

Press **[RESET]** once. The channels and spots in the editor fade out in Default Fade Time. The Default Fade Time can be modified in the System Parameters menu. (See Chapter 26 - System Configuration).

Press **[RESET] [RESET]**. The channels and spots in the editor bump out.

Using [CLEAR]

[CLEAR] works as a regressive clear function.

Press **[CLEAR]** - the command line clears, leaving only the selection mode (channel, spot, or memory).

Press **[CLEAR]** again - the output of selected channels and spots (displayed in red) are cleared.

Press **[CLEAR] again** - the selection mode is cleared from the command line. The editor is now idle.

Numeric Soft Keys

There are 50 Numeric Soft Keys. They are generally used for selections. The context or mode is determined by the Numeric Key Mode selection.

NSK Mode Key	What it is used for
POSITION	Store, erase, and select position libraries.
COLOR	Store, erase, and select color libraries.
GOBO	Store, erase, and select gobo libraries.
MACRO	Access to macros 1 - 999.
SNAP	Operate snaps in non-forcing mode.
SNAP +	Operate snaps in forcing mode.
Q LIST	Select QLists, store memories to Q Lists, change the default QList.
GROUP	Store, erase, and select groups.
EFFECT	Store, erase, and select Effect Palettes.
DISPLAY MACROS	Store, erase, and select Display Macros.
PALETTE	Store, erase, and select Palettes.
LEADER/FOLLOW	Change leader or follower assignments.
Q KEY	Assign and playback 100 memories on the numeric key section. This mode is not numerical.
ALPHA	Use the Numeric Soft keys as an alphanumeric keyboard.

➢Note

The Numeric Soft Key section and the numeric keypad are two different areas on the console. The Numeric Soft Key section is the large group of 50 keys. The numeric keypad consists of the keys numbered from 0 - 9 in the main editing section of the console.

Temporary status

The current Numeric Soft Key default mode can be changed temporarily by a single hit on one of the status keys. This single hit temporarily overrides it the current default mode. The LED of the current default mode remains on. The LED on the key of the temporary status blinks and the temporary selection is shown on the alphanumeric display. Once a Numeric Soft Key is hit, the blinking LED turns off and the Numeric Soft Keys revert to the current default mode.

Paging

Some of the modes contain only 2 pages and others many more.

To page modes that have only 2 pages, press **[51-100]**.

This key toggles between page 1, where the first NSK is 1, and page 2, where the first NSK is 51. Libraries, Snaps, Groups, and QLists contain only 2 pages because you cannot program more than 100 items.

[UP] and **[DOWN]**, located to the left of the NSKs, control the paging. Use them to page through the NSKs in modes that can have more than 100 items; Macro mode, Spot mode, Palette mode, Display Macro mode, and Effect Palette mode.

The LED Page display shows the first NSK number: 1, 51, 101, 151, etc.

The page is remembered when you exit an NSK mode. Example: In Macro Mode, the NSKs access Macros 301 –350. When returning to Macro mode from another mode, the NSKs are still on the 301 – 350 page.

The starting number for the current page is displayed on the top left of the Soft Key Exam.

Viewing the NSKs

You can view the NSKs on one of the monitors.

Press one of the **[EXAM]** keys and **[51-100]**. The contents of the NSKs and text are displayed.

Storing and erasing

[ASSIGN] is used to store Snaps, Libraries, Groups, Palettes, Display Macros, and Effect Palettes.

[FREE] is used to erase Snaps, Libraries, Groups, Palettes, Display Macros, and Effect Palettes.

Example: Store library 1.

Keypresses	**Results/Comments**
1. Select spots and move the beam to the desired position.	
2. Press **[ASSIGN]**	
3. Press the library category.	
4. Press NSK **[01]**	The LED for NSK 01 is on. The message *Library 01 Stored* is displayed.

You can use **[FREE]** in combination with the NSKs to erase Libraries, Groups, Palettes, Effect Palettes, Display Macros, Snaps, and free QKey assignments.

Example: Erase library 1.

Keypresses	Results/Comments
1. Press **[FREE]**	
2. Press the library category	
3. Press NSK **[01]**	The message *Press NK# or→?* is displayed.
4. Press NSK 01 to confirm the command.	The message *Library 01* E*rased* is displayed.

Erasing all of the asingments

Keypresses	Results/Comments
1. Press **[FREE]**	
2. Select an NSK mode.	
3. Press the library category	
4. Press an NSK	The message *Press NK# or→?* is displayed.
5. Press **[→] [→]**	Assignments are erased from the selected NSK to the end.

Sequence	Message	Confirmation Key	Result
[FREE] [NSK]	*Free NK# or→?*	NSK	Contents of NSK erased
[FREE] [NSK → NSK]	*Are You Sure?*	Press the last NSK in the selected range again	The contents of the selected NSK range are erased.
[FREE] [NSK] [→] [→]	None	None	The contents of the NSKs from the selected NSK to the last NSK are erased.

Parameter Control

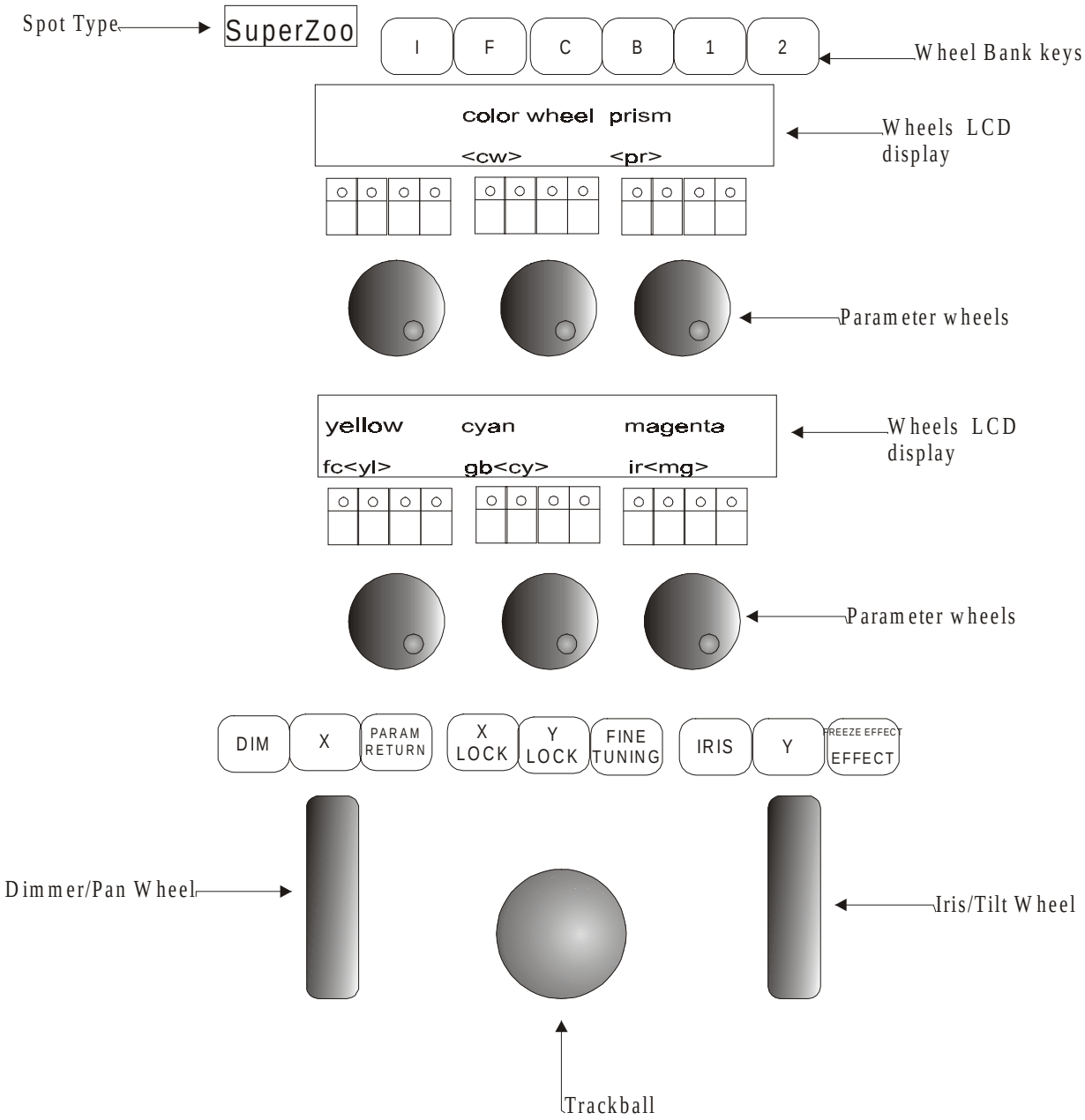
Sabre has 6 horizontal parameter wheels. Two LCD displays show the parameter to wheel assignments. Each wheel has 4 associated parameter keys. Pressing a Parameter key determines which parameter the wheel addresses. The selected parameter appears in brackets on the LCD display.

The 6 wheels are further organized into Banks: I, C, F, B, 1, and 2. Pressing one of the bank keys selects the parameters assigned to that bank.

The default parameter to bank assignments and parameter to wheel assignments can be modified in the Mix Output menu/Define Device.

The 2 vertical wheels control Dimmer/X and Iris/Y. dedicated keys toggle the current wheel assignment.

The trackball controls pan and tilt. Trackball sensitivity can be changed using **[FINE TUNING]** or the *Trackball Sensitivity* option in the System Parameters menu. The trackball can be locked to address X only or Y only.



1. The type of spot selected is displayed in a dedicated LED.
2. 1 wheel is dedicated to dimmer and pan assignments.
3. The wheel labeled **iris** always controls parameter 1 and tilt.
4. The other 6 wheels control 4 parameters each.
5. There are 6 parameter banks, arranged as I, F, C, B, and 2 additional banks. Parameter to bank assignments can be customized in the Mix Output menu.
6. Each parameter key has an LED. The LED is on the parameter is selected.
7. A parameter that appears between brackets < > can be immediately addressed with the wheel.
8. There is 1 sensitivity adjustable trackball for pan and tilt. The pan or tilt may be locked.

Crossfaders

The A/B crossfader is the primary playback crossfader of the system. A and B each have an LED display showing which memory is currently active and which is the next memory in the sequence. Fades are executed according to prerecorded rates or by manual movement of the crossfader. The automatic fade rate on the A/B crossfader can be taken over manually with the A/B Rate Wheel.

The C/D crossfader also runs memories in numerical sequence and has LED displays, showing which memory is currently active and which is the next memory in the sequence. Crossfader C/D is a convenient place to run loops of memories. The automatic fade rate on the C/D crossfader can be taken over manually with the C/D Rate Wheel.

Crossfaders A/B and C/D can be defined as split crossfaders or as a Crossfader and a Rate fader.

Controllers

The 24 controllers accept memory, groups of spots and/or channels, and spot parameters assignments.

They also accept memory loop, memory range assignments, and Q list assignments, thus functioning as chasers. The chasers can be assigned to run in hard or soft playback mode.

Each controller has 2 assignment mode keys: **[DIM]** and **[XF]**. The assignment mode keys double as go and Hold command keys for chasers.

Each controller also has a Bump Button.

The Joystick

The joystick takes over the x/y parameters of any spots or chasers assigned to it, giving the operator manual control of pan and tilt.

Spots can be assigned to the joystick either directly on the keypad, via Auto Assign, or via Event.

The Move Chase option gives the joystick control over the x/y parameters of entire chase sequences. This allows you to reposition a chase in its entirety. There is an option to store the new chase position.

General Master

The general master controls the overall dimmer output of the console.

The General Master fader has a blackout key, which turns off all dimmer outputs in the system.

The level of the general master is displayed in the upper right corner of display monitor 1.

Channels can be removed from General Master control. This is useful when using scrollers and DMX devices such as smoke machines.

Submasters

Submasters 1 - 3 accept channel, spot, and memory assignments. The submasters can also be configured to submaster A/B, C/D via a switch in the System Parameters menu.

Freeing Assignments

The **[FREE]** key is used to free controller and submaster assignments and erase Snaps, Libraries, Groups, Palettes, Display Macros, and Effect Palettes (see above.

You can lock **[FREE]** with a double hit. Any keypress releases the lock.

To free more than 1 controller assignment and submaster assignment:

Keypresses

1. Press and hold **[FREE]**
2. Press **[DIM]** or **[XF]** for multiple controllers

Menus

Menus provide tools for Patching, defining system parameters, Disk Management, Memory Management, Macros, and other special functions.

Menu	Purpose
1. Patch	Create homogenous beam movement, for moving lights, regardless of the physical orientation of the device.
2. Load	Load show files from a floppy disk or from the hard disk. All of the data contained in a show file can be loaded or selected parts.
3. Memory Operations	Rename, copy, and delete memories.
5. Record	Record Sabre's memory contents to a floppy disk or to the hard disk.
7. Channel Patch	Dimmer management includes soft patch, assigning dimmer curves, and testing channels or dimmers. Patching for DMX input.
8. System Parameters	General system information is displayed. There are options that you can redefine to customize the system.
9. Macro	Create, modify, and delete Macros.
10. Delete Play/Act	Delete show files from a floppy disk or the hard disk.
13. Scroller	Assign control channels to scrollers, fine tune frame set ups, enable the dark gel option. This menu does not appear if the system is not configured for scrollers.
14. Printer	Generate hard copy of show data.
17. MIDI In/Out	Enable keys and controllers for MIDI communication. Edit default MIDI codes. Program macros of MIDI command strings. Enable or disable the MIDI Synch function.
19. Mix Output	Moving Light management includes control number patching, assigning output addresses, customizing the Default Device List, defining connector assignments, enabling Ethernet communication, defining or customizing device definitions.
20. Leader	Initialize spots for participation in the Leader function.
21. Event	Program Events that trigger multiple playback events in the system.
22. Device Priority	Define the control priority of playback devices. Store a library of operator defined priority maps. Change the default hierarchy or instruct Sabre to work in LTP mode.
23. Touch Screen	Define and calibrate the touch screen.
25. Autosave	Manually trigger the Autosave function to save the current memory contents in Sabre. Restore the data contained in an Autosave file.
26. Network Settings	Assign IP addresses, ID numbers, and mapping the network settings for Ethernet communication.

Accessing menus

To view the menu list, press **[MENU]**.

Go to a menu by either pressing the appropriate F key, displayed at the bottom of the screen or by using the shortcut.

Shortcut for menu access

1. Enter the number of the menu, as it appears in the numbered list.
2. Press **[ENTER]**

Exiting the menu mode

[RESET] exits the menu mode. Press once to return to menu list. The second press returns you to stage display.

[MENU] also exits the menu mode. Pressing this key exits the menu you are working on and returns to stage.

You can exit the following menus without resetting the menu editor:

- Channel Patch
- Macro
- Effect
- Spot Patch
- Mix Output
- Scroller Patch

If, for example, you are busy in the Spot Patch menu and you must temporarily exit the menu, press **[MENU]** returning to stage display. When you want to return to the Spot Patch menu, press **[MENU]**. You return to the point at which you exited.

F keys options change according to the type of task you are working on. A prompt line guides you through the different tasks and functions. If you make an error entering information **F6 Restart** returns you to the beginning of the command chain.

Number selections in the menu mode are entered on the numeric keypad of the console or, in some cases, the alphanumeric keyboard.

Text is typed on an alphanumeric keyboard or using the NSKs in Alpha mode.

Many of the different menus have more than 5 function options displayed on one page. To view the next page of functions press: **F6 More Function**. It is generally assumed that if you do not see the option under discussion, you will page through (using the **MORE FUNCTION** key) until you see the option.

Some of the console keys can be used instead of the F keys in the menus:

MENU	KEYPAD
Thru	**[→]**
Channel	**[CHANNEL]**
Memory	**[MEMORY]**
Store	**[STORE]**
Next	**[+]**
Previous	**[-]**
Enter	**[Enter]**

Text & the Alphanumeric Keyboard

The text function allows typing short notes, reminders, and e-mail messages. You can add text to macros, memories, to show files when recording to the diskette, to snaps, events, libraries, controller group assignments, Q Lists, and even leave a note for the second shift crew. Operating instructions for adding text to the above mentioned items are included in the sections dealing with those subjects.

Text is typed on the alphanumeric keyboard or on the Numeric soft keys in Alpha mode.

A page of text

One page is available for text typed on the alphanumeric keyboard. This is useful for recording any notes about special rigging, color changes during interval, cue synopsis, any special comments pertaining to the show, etc.

If the text page contains text it is the immediately displayed when the system is turned on. This makes it a convenient place to leave notes and messages for the next shift.

Keypresses	**Results/Comments**
1. Press the **[TEXT]** key	A blank blue screen is displayed. This is the text page.
2. Type the text on the keyboard or on the NSKs in Alpha mode.	
3. Press **[STORE]**	

Erasing text

Delete any text with **[ERASE]**.

Moving the cursor

Key	What it does
→	Move cursor one position to the right.
←	Move cursor one position to the left.
↑	Move the cursor one line up.
↓	Move the cursor one line down.
Home	Move the cursor to the beginning of the text.
End	Move the cursor to the end of the text.
Delete	Delete text from the cursor position to the end of the text.
Enter	Move the cursor to the beginning of the next line.
Backspace	Move the cursor back and clear the character.
Tab	Move the cursor 3 positions to the right.

Using the text keyboard for editing

The text keyboard can be used for some editing functions.

Press? on the alphanumeric keyboard to view the keyboard equivalents.

A – Text	o – Spot	F – Frame
b – (not used)	p – Part	Q – Q-List
c – Channel	q – Memory	@ - intensity
d - Pg Dn 2	r - Rem Dim	^ - Except
e – Effect	s – Store	[- +@
f – Full	t – Time	] - — @
g – Mask	u - Pge Up 2	Bs – CE
h – Help	v - (not used)	spacebar – Clear
i – Teach Macro	w – Wait	% - Flash
j – (not used)	x – Exam	& - +Store
k – Link	y – Exam 2	> - →
l - Loop	z – Zero	Tab – Stage
m – Menu	D - Delta	Del – Erase
n – (not used)	E – Event	Esc - Reset During editing, after inserting text to memories, etc. use ESC to exit text mode.

The alphanumeric keyboard has a lock to prevent unintentional editing. Activate the lock by pressing **ALT A**. Unlock the keyboard for editing functions by pressing **ALT A** again. This lock does not affect the functioning of the alphanumeric keyboard when **[TEXT]** has been selected on the console.

➢Note

To use the Print Screen function on the text keyboard, you must “unlock” the keyboard.

Getting Help

On-line help contains a short description of each of the keys and the important key sequences. When the help window is open, pressing a key on the console only displays its help and does not execute its function.

Keypresses	Results/Comments
1. Press **[HELP]**	A window opens in the middle of the display screen.
2. Press any key you would like to know more about.	A short explanation and any relevant keystroke sequences are displayed.
3. To exit help, press **[HELP]**	

➢**Note**
When the Help window is open the console keys are disabled!

System Status

You can check the status of connected peripherals from panel. The peripherals include the Submaster Wing, the Macro Extension Keyboard, the Remote Control, the Wire/less Remote Control, and the alphanumeric keyboard. You are notified if the battery is getting low.

Color key for System Status

Color	What it means
Blue	Device installed and functioning correctly.
Red	Fault
White	Not installed

What to do in case of disconnection

If a peripheral is physically disconnected or there is a communication problem a red blinking S, appearing in the command line notifies you that there is a problem. You can turn off the blinking S by going to the System Status window and selecting **F2 Ignore**.

Keypresses	Results/Comments
1. Press **[•]**	The System Status window opens. The peripheral device status is displayed.
2. Press F1 and select the device	
3. Press **F2 Ignore**	
4. Press **[STAGE]** or **[CLEAR]** to return to the editor.	

Disabling a device

You can also disable any device connected to the console.

Keypresses	Results/Comments
1. Press **[•]**	The System Status window opens. The peripheral device status is displayed.
2. Press F1 and select the device	
3. Press **F3 Disable**	*Disabled* appear in red next to the device.
4. Press **[STAGE]** or **[CLEAR]** to return to the editor.	

➢Note

When the alphanumeric keyboard is locked it is designated as Disabled in the System Status window.

If the Submaster Wing is disconnected from the console, the output from the Wing is moved to the editor and the Status error message blinks in the command line. The assignments to the Submaster Wing are retained. If you reconnect the Submaster Wing, the situation is the same as prior to the disconnect. However, if you go to the System Status window and tell the console to ignore or disable the Submaster Wing, all of the assignments on the Wing are released.

CHAPTER 3
DISPLAYS

This chapter includes:

Display Control

Monitor 1 and monitor 2 have separate controls. If your system has the optional third monitor, use the **[SHIFT]** and the controls for monitor 1.

One of the monitors can be a Touch Screen. The NSKs and menus can be controlled using the Touch Screen.

The system uses full color VGA displays. Spots, spot parameters, and channels are color coded according to where their output origin: the controllers, A/B, C/D, the editor, or DMX input.

The display on monitor 1 is divided into 4 windows. The cursor (a white rectangle in the left corner of a window) indicates the window that will respond to paging commands.

The keys **[DOWN 1/3]**, **[UP 1/3]**, **[DOWN 2]**, **[UP 2]** go to the next or previous page of the display area containing the cursor.

Example: You want to view the second page of channels on monitor 1.

Keypresses

1. Press **[WINDOW]** until the cursor is located in the upper left corner of the channel display.
2. Press **[UP 1]**. The next page of channels is now displayed.
   Press **[DOWN 1]**. The previous page of channels is now displayed.

Display Formats

[STAGE] toggles the display, on monitor 1, between the stage display and the x-fade exam display.

Monitor 1 provides 2 displays:
- Stage display showing spots, channels, and playback.
- X-fade Exam display showing the memory sequence on the crossfaders and controller assignments and status.

[TOPO] switches the displays on monitor 2.
There are 3 displays available on monitor 2:
- A small TOPO display and Stage display with 24 spots.
- A full screen TOPO display
- Stage display with a full-screen channel display

You can switch between monitor 1 and monitor 2 by pressing **[SWAP SCREENS]**.

Print Screen, on the alphanumeric keyboard, generates hard copy of monitor 1. To print display on monitor 2, swap between the monitors.

[SHIFT] [STAGE] toggles the displays on monitor 3.

Monitor 3 offers 2 types of Stage displays:
- Stage display showing 24 spots
- Stage display with a full-screen channel display

Messages and commands

The area at the top of the screen is reserved for:

- Messages
- Submaster Assignments
- Blind Mode Flag
- Autosave flag and progress bar
- Teach Macro Flag
- MIDI status
- MIDI synch status
- Grand Master level

The line at the bottom of the screen houses:

- The command line - the command line echoes the keypresses and contains up to 44 characters.
- The clock
- Delta flag
- The current Q List
- The last memory recorded or called into the editor.

Stage display

The spot display area

The Spot Display is located in the upper half of the Stage Display screen. The Stage display shows up to 192 spots with 24 spots per page.

The default display is:
Monitor 1 spots 1 - 24
Monitor 2 spots 25 - 48.

Each spot is shown as a vertical column. The parameter numbers and names are displayed at the side of the column.

You can display any of the pages on either monitor by paging. If monitor 3 is present, its Spot display default is from spot 49 – 72.

Parameters

Spot parameter values are displayed as numerical values in the spot number column. The color of the parameter value displayed depends on the output source of the data; whether it derives from A/B, C/D, controllers, a chaser, the editor, tracking, a library, or DMX Input.

X and Y (pan and tilt) display the coordinates of the spot's mirror.

Dim is the level of the unit's dimmer.

The “p” numbers represent the spot parameters as defined in the Mix Output menu.

Examples of possible parameters:

- ir - iris
- mg - magenta
- gb - gobo position
- vl - velocity. The speed at which the mirror moves
- cw - color wheel

The parameter names are displayed on the Stage display and on the LED Wheels display.

Intellabeam and Cyberlight special parameter modes are represented by icons.

Jump display

You can set the system so the displays jump to display the highest spot number selected on monitors that are displaying spots.

Example: Spots 1 – 24 are displayed on monitor 1. Spots 25 – 48 are displayed on monitor 2. Select spot 72. Monitor 2 jumps to the page containing spot 72.

The *Auto Jump* option in the System Parameters menu controls this function. (See Chapter 26 System Configuration for information on the user definable options in the System Parameters menu.)

The Jump Display has a number of settings:

F1 No Jump - Disabled

F2 Auto – Spot display jumps where convenient.
Example 1: Monitor 1 shows the Stage display (spots 1 – 24), monitor 2 shows the full-screen TOPO display, and monitor 3 shows the Memory Exam. Select spot 45. Monitor 1 jumps to the page displaying spot 45.
Example 2: Monitor 1 shows the Stage display (spots 1 – 24), monitor 2 shows the full-screen TOPO display, and monitor 3 shows spots 25 - 48. Select spot 10 and 50. Monitor 3 jumps to the page displaying spot 50.

F3 Monitor 1 – Spot display jumps on monitor 1 only,

F4 Monitor 2 – Spot display jumps on monitor 2 only,

F5 Monitor 3 – Spot display jumps on monitor 3 only,

Channels

Channel information is displayed in the lower left quarter of the Stage display on monitor 1, showing 40 channels, or a full-screen display on monitors 1 and 3, showing 220 channels.

Scrollers that have been patched to control channels (see Chapter 28 – Channel and Scroller Patching) are displayed with the channel information. Channels that also control scrollers are displayed with an ‘s’ and the frame number is displayed under the intensity level. Scroller frames track through the show.

The Playback display

The lower right quadrant of the Stage display is reserved for playback information. There is a graphic representation of the A/B and C/D crossfaders, showing:

- Outgoing memory
- Incoming memory with 5 text characters
- The time of the incoming memory
- Fade Rate information
- Control priority information
- Loop information, if pertinent
- Auto Assignment flag
- Sequence direction – for C/D only

The Controller area of the Playback display is located beneath the crossfader display.

If the assignment is a Memory, the memory number is shown next to the controller number.

If the assignment is a Group of lights (whether channels or spots), grp is displayed next to the appropriate controller number.

If the assignment is a Spot Parameter, the spot type and parameter name is displayed.

Each assignment is flagged as Dim or XF.

The Q-Key status is shown in the Playback display. When the **[PILE ON]** key (Q-Key playback mode) is active **Qkey** is displayed. When the **[PILE ON]** key is not active **Qkey** is displayed.

The LTP (Latest Takes Precedence) flag is displayed here. *LTP* displayed in red, means that the control priority for playback devices is on a Latest Takes Precedence basis. *LTP* displayed in gray means that the current playback control priorities are valid until the LTP function is turned on again.

The X-Fade Exam display

This display shows a short memory list of the next few memories sequencing on the A/B crossfader. The number of memories displayed here depends on how many Auto Assigns and Part Qs are present.

Bar graph representations of the playback crossfaders dynamically display the progress of a crossfade.

C/D crossfader assignments appear in the upper right corner of this display. A bar graph dynamically displays the progress of a crossfade.

The Controller/Chaser display

The controller/chaser display on the X-fade exam includes the type of assignment, the controller level, and priority information.

For chaser assignments the assigned memory range, Q-List origin, chaser mode, and priority information is displayed. The display is dynamic when the chaser is running.

A roll up parameter assignment shows the moving light type and the assignment parameter. A roll up assignment allows you to address the assigned parameter, by raising or lowering the controller, crossfading from its current output to Full.

Displaying control priority

When working in LTP control priority mode, it is important to know the order of the priority stack since the priority stack is fluid and changes with each playback operation, assignment, or bump to first priority. This information is shown in the controller area of the X-fade Exam display.

Exam Displays

There are many different exam displays. Exam displays furnish a great deal of information. Some exam displays are list, such as a list of memories or snaps. Some exam displays allow you to view all the details of selected item, such as a memory.

There are 2 basic types of Exam displays. Strong displays and weak displays. Weak displays are cleared by any keypress. Strong displays remain on the screen and you can continue to work keeping the display on view. An example of a weak display is Free Channels. An example of a strong display is: Memory List

Exam	What is shows
Free Spots Exam	A list of spots not used in any memories.
Selected Spot Exam	The memories in which the spot appears and parameter values, Libraries, and Effects in each memory.
Free Channels Exam	A list of the channels not used in any memory.
Selected Channel Exam	The memories in which the channel appears, intensity, frame, and Effect assignments.
Memory (Cue) List	A sequential list of all recorded memories, including loop, link, fade time information, text, and Event assignments.
Specific Memory Exam	Values, Libraries, Effects, and Part assignments are displayed for all channels and spots in the selected memory.
Library List	A list of the recorded Libraries, including any text.
Specific Library Exam	The spots and the parameter values in the selected library.
Library Track Sheet	A list of memories and the spots in each memory that have the library assignment.
Snap List	A list of the Snaps and text.
Specific Snap	The playback device assignments and playback modes or status recorded in the Snap.
Effect Palettes	A list of Effect Palettes.
Selected Effect	The Effects assigned to each parameter are displayed.
Palettes	The list of Palettes.
Selected Palette	The ID number, spot type and parameter values are shown
Group List	The list of Groups.
Selected Group	The contents of the selected Group.
Events	The Event list, including assigned SMPTE time codes.
Controller Assignments	Information pertaining to the assignment on selected controllers.
Q-Key Assignments	The Q key assignment, showing the memory number and the contents of the memory

Sequences for accessing the exam displays are contained in the discussion of the different functions.

Display Macros

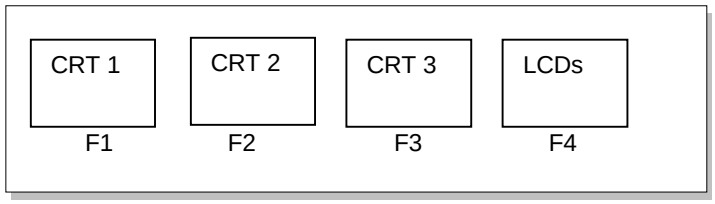
The NSK mode Display allows you to create and save Display set-ups. The Display mode functions like Macros containing display configurations that include all of the monitors and the LCD displays. Display Macros can be activated at any time without interfering with your current operational sequence.

You can save any display configuration. Example: monitor 1 shows spots 1 – 24 and page 4 in the Channel window, monitor 2 shows spots 49 – 72, monitor 3 shows the Memory List, and the Controller's LCD display is set to assignments and text.

The Display macro Saves the display status, but not the contents. Example: A Display Macro was saved with the Memory List on monitor 2. When the Display Macro was saved, the default QList was QList 5, so the Memory List showed the memories in QList 5. If you use this Display Macro when the default is QList 10, the Memory List shows the memories in QList 10.

The spot and channel page is saved in the Display Macro. The mode of the library display (parameter values or library numbers) is also stored.

All or some of the display elements can be saved in the Display Macro. Pressing **[ASSIGN]** in Display mode opens a window showing the display elements.



1. Press an F key to exclude the associated element from the Display Macro. The excluded element is displayed in gray.

The default is to include all the display elements. If you change the default Sabre remembers and saves your preference.

The NSK Exam in Display mode shows the key number, the display elements status, and text labels.

Programming a Display Macro

Example: Store Display Macro 9 using the NSKs.

Keypresses	**Results/Comments**
1. Set up the display on your monitors.	
2. Press **[ASSIGN]**	
3. Press **[DISPLAY]**	Skip this step if the NSK mode is Display.
4. Press **NSK [09]**	The message *Display 9 Stored* is displayed. The LED for NSK 09 is lit.

Example: Program Display 9 using the numeric keypad.

Keypresses	Results/Comments
1. Press **[DISPLAY]**	*Display* is displayed in the command line.
2. Enter 9 on the keypad.	
3. Press **[STORE]**	The message *Display 9 Stored* is displayed. The LED for NSK 09 is lit.

Adding text to a Display Macro

Keypresses	Results/Comments
1. Press **[DISPLAY]**	
2. Press **[TEXT]**	
3. Enter the display number on the keypad.	
4. Type the text on the keyboard or use the NSKs in the Alpha mode.	The text appears in the command line.
5. Press **[STORE]**	The message *Display # Stored* is displayed.

Using Display Macros

Example: Operate Display macro 25

Keypresses	Results/Comments
1. Press **[DISPLAY]**	*Display* appears in the command line.
2. Enter 25 on the keypad	
3. Press **[ENTER]**	The monitor displays and LCD displays change according to the set up in the Display macro.

Or

Keypresses	Results/Comments
1. Press **[DISPLAY]**	Skip this step if the NSK mode is Snap.
2. Press **[NSK 25]**	The monitor displays and LCD displays change according to the set up in the Display macro.

Deleting a Display Macro

Example: Delete Display macro 25.

Keypresses	Results/Comments
1. Press **[DISPLAY]**	*Display* appears in the command line.
2. Enter 25 on the keypad	
3. Press**[ERASE]**	Sabre asks *Are You Sure?*
4. Press **[ERASE]** again.	The message *Display(s) Erased* is displayed.

Or

Keypresses	Results/Comments
1. Press **[FREE]**	
2. Press **[DISPLAY]**	Skip this step if the NSK mode is Display.
3. Press **[NSK 25]**	The message *Are You Sure?* is displayed.
4. Press **[NSK 25]**	The message *Display(s) Deleted* is displayed.

TOPO

You can create a topographical map of the moving lights in your rig. The lower portion of monitor 2 displays a portion the TOPO map at all times. Use the trackball to scroll the map up or down. The editor must be in idle to scroll the TOPO map.

Constructing the TOPO map is done on the full screen TOPO display on monitor 2. Each spot positioned on the map is represented by a blue square containing the spot number and label.

Positioning spots on the TOPO map

Keypresses	Results/Comments
1. Select the spot for positioning.	
2. Press **[TOPO]**	The full screen TOPO map is displayed on monitor 2. There is a red square in the lower left corner. This represents the selected spot.
3. Use the TB (trackball) to position the red square.	
4. Press **[STORE]**	The red square turns blue and displays the number and label of the spot. Use **[+]** or **[-]** or enter a number on the keypad to choose the next spot number for positioning on the map.
5. Repeat steps 3 and 4.	

Relocating a spot on the TOPO map

Keypresses	Results/Comments
1. Select the spot you want to relocate.	
2. Press **[TOPO]**	The selected spot flashes on the TOPO map.
3. Use the trackball to reposition the spot.	
4. Press **[STORE]**	The spot is dropped in its new location.

Removing a spot from the TOPO map

Keypresses	Results/Comments
1. Select the number of the spot you want to remove.	
2. Press **[TOPO]**	View the full screen TOPO display.
3. Press **[ERASE]**	The selected spot is erased from the map.

Color key for TOPO display

Color	What it means
Red	Spots selected in the editor.
White	Spots present in the editor.
Yellow	Spot output from controllers.

CHAPTER 4
QUICK START

This chapter includes:

Setting up Sabre

Configuring Sabre

Patching

- Patching spots
- Patching channels
- Patching Scrollers

Programming a memory

Playing back a memory

Playing back chasers

This chapter contains very brief explanations of Sabre's basic functions. It is intended for experienced operators, operators familiar with the Compulite consoles, or just plain impatient operators.

Setting Up Sabre

1. Connect the alphanumeric keyboard and the monitors to the appropriate ports on the back panel.
2. Connect the DMX and (if present) S-Mix leads to the output ports.
3. Plug the power cable into a power source.
4. Press and hold the **[CE]** and **[CLEAR]** keys while switching on the console.
5. Release the **[CE]** and **[CLEAR]** keys. Sabre goes through its boot up process and finally displays the main Service Tools menu.
6. The next step is configuring Sabre.

Configuring Sabre

You must tell Sabre how many moving lights, dimmers and channels, and scrollers you are running. The instructions below treat this subject at its simplest level.

1. Looking at the main Service Tools menu, press **F3 Config System**.
2. Enter the number of spots, "big" spots; enter the first spot number for big spots, number of channels, dimmers, and scrollers that you will be running.
3. Press **F6 Enter & exit**.
4. Press **F6 Store configuration**.
5. Switch off Sabre.
6. Switch on Sabre.
7. When the main Service Tools menu is displayed, press **F1 Cold Start**.

For more information see Chapter 26 System Configuration.

Patching

Patching should be done before recording any memories.

Sabre has 4 Patch menus:

- Mix Output menu (menu 19) - Moving light management; patch devices to spot numbers, assign DMX output addresses, and define moving devices.
- Patch (menu 1) - Flips and exchanges the x and y axes of the mirror movement to create homogeneous beam movement.
- Channel Patch (menu 7) - Soft patch dimmers to channels, assign dimmer curves, enable/disable General Master control, and more.
- Scroller Patch (menu 13) - Patch scrollers to control channels, determine dark gel assignments, fine tune gel string placement.

All of the menus have easy to follow prompts that guide you through the various functions.

Patching and addressing moving lights

1. Go the Mix Output menu.
2. Select the type of moving light you are using from the Device List. If it does not appear in the device list check the Device Pool. If it appears in the Device Pool, copy the device definition to the Device List. If the moving you are using does not appear in the Device List or the Device Pool, you can define it yourself. When you define a device yourself, consult the manufacturer's specifications.
3. Assign spot numbers to the selected device.
4. Assign Output Addresses to the spot numbers.
5. Exit the Mix Output menu.

See Chapter 27 - Spot Management, for further information.

Creating homogeneous beam movement

1. Go to the Spot Patch menu.
2. Press **F1 Patch Position**.
3. Select the spot you want to adjust.
4. Press **F1 Convert To**. The dimmer of the selected spot is turned on.
5. Select one of the movement options (1-8) by entering the number on the numeric keypad. You can use the trackball to check your selection.
6. Press **F1 Store Convert**.

See Chapter 27 - Spot Management, for further information.

Patching dimmers to channels

1. Go to the Channel Patch menu.
2. Press **F1 Assign Dimmer**.
3. Enter a dimmer number in answer to the prompt.
4. Press **F3 To Channel**.
5. Enter a channel number in answer to the prompt.
6. Press **F1 Store**.

See Chapter 28 - Channel and Scroller Patching, for further information.

Patching scrollers to channels

The scroller to channel default patch is 1-to-1. This is easily changed in the Scroller Patch menu.

1. Go to the Scroller Patch menu.
2. Select a scroller by entering the scroller number on the numeric keypad.
3. Press **F2 To Channel**.
4. Enter the channel number in answer to the prompt.
5. Press **F1 Store**.

See Chapter 28 - Channel and Scroller Patching, for further information.

Programming Memories

Spots, channels, and scrollers can all be included in the same memory.

1. Select spots using the NSKs in Spot mode or use the numeric keypad.
2. Assign parameter values. Use the parameter wheels or press a parameter key and assign a value on the numeric keypad. (Use **[STEP UP]** and **[STEP DOWN]** for discrete and mixed step parameters).
3. Select channels using the numeric keypad.
4. Assign intensity using the dimmer wheel or press **[@]** and assign an intensity value using the numeric keypad.
5. Select a scroller channel.
6. Assign a scroller frame using the iris wheel or press **[FRAME]** and assign the frame using the numeric keypad.
7. Press **[MEMORY]** or press **[=].**
8. Enter the memory number using the numeric keypad.
9. Make fade time assignments by selecting the time in, time out, wait in, wait out, or delay and entering the time assignment on the numeric keypad. Press **[TIME]** for time in. Press **[TIME] [TIME]** for time out. Press **[WAIT]** for delay. Press **[WAIT] [WAIT]** for wait in. Press **[WAIT] [WAIT] [WAIT]** for wait out.
10. Press **STORE**.
11. Press **RESET** to clear the editor. You can also continue programming the next memory using the spots and channels that remain in the editor after **STORE** was pressed.

See Chapter 7 - Programming Memories, for further information.

Playback Memories on A/B

1. Select a memory by pressing **[MEMORY]** and the memory number.
2. Press A or B. It is recommended to assign the memory to the inactive fader; if the fader is at A assign the memory to B, if the fader is at B assign the memory to A.
3. Move the fader so the memory is active on stage.
4. Press **[SEQ]**. The next memory is now on board.
5. Press **[GO]** to begin the crossfade from the active memory to the memory on board.

See Chapter 12 - The A/B Crossfader, for further information.

Playback chasers

Chasers are played back on the controllers.

1. Select a range of memories. If the first memory has a loop assignment, you select the first memory only.
2. Select the chaser playback mode by pressing **[HARD]** or **[SOFT]**.
3. Press the **[GO DIM]** or **[HOLD X-FADE]** key for one of the controllers. The LEDs on both of the keys blink.
4. Press **[GO DIM]** to start the chaser.

See Chapter 13 – Controllers, Submasters, and Joystick for further information.

CHAPTER 5
SELECTING AND EDITING SPOTS

The subjects included in this chapter are:

Igniting Spots

Most moving devices have a control channel for functions such as igniting the lamp, extinguishing the lamp, resetting the device, and fan control.

This control channel is known as Ignite and is included in the device definition. The ignition sequences depend on what function you are requesting and on the ignition channel's definition.

Igniting DMX spots

Sending the default value

Keypresses	Results/Comments
1. Select spots.	
2. Press **[IGNITE]**	
3. Press **[ENTER]**	The default value as defined in the device definition is transmitted. The duration of the transmission depends on the time as defined in the device definition.

Sending a value other than the default value

Example: To send a Reset command to a Studio Color device, send the value 64.

Keypresses	Results/Comments
1. Select spots.	
2. Press **[IGNITE]**	
3. Enter **64** on the numeric keypad.	
4. Press **[ENTER]**	The Reset command is transmitted to the device.

For more information on defining the ignition control, see Chapter 26 Spot Management.

Igniting S-Mix or L-Mix spots

The ignition channel definition for S-Mix and L-Mix spots is factory configured and may not be changed.

Ignition values for Intellabeam and Cyberlight

Reset and turn on the lamp:

Keypresses	**Results/Comments**
1. Select spots.	
2. Press **[IGNITE] [1]**	The device resets itself and the lamp is struck.

Turn off the lamp:

Keypresses	**Results/Comments**
1. Select spots.	
2. Press **[IGNITE] [0]**	The lamp is extinguished.

Ignition values for Coemar NATs

Strike the lamp:

Keypresses	**Results/Comments**
1. Select spots.	
2. Press **[IGNITE] [1]**	The lamp is struck

Reset the device

Keypresses	**Results/Comments**
1. Select spots.	
2. Press **[IGNITE] [2]**	The device resets itself.

Extinguish the lamp

Keypresses	**Results/Comments**
1. Select spots.	
2. Press **[IGNITE] [0]**	The lamp is extinguished.

Ignition exam

The Ignition Exam display shows the ignition status of the spots.

Spots that have had an ignition sequence applied are displayed with the ignition value.

Keypresses	Results/Comments
1. Press **[IGNITE]**	
2. Press **[EXAM 1]** or **[EXAM 2]**	The Ignite Exam is displayed.
3. Press **[UP 1]** or **[UP 2]** to view the next page.	

Color key for Ignition Exam table:

Type	Color
DMX ————————	gray
DMX with discrete step ignition ————	blue
S-Mix ————————	yellow

Selecting Spots

Use the numeric keypad or the Numeric Soft keys in Spot mode to select spots.

Selected spots appear in red on the Stage display. All parameter value assignments are carried out on spots appearing in red.

The parameter names of the selected spot/s are shown on the Stage display and they also appear in the LCD displays above the parameter selection keys. If you are working in the Mix Editing mode (see System parameters menu) the parameter selections are shown for the last type of spots selected.

Groups can also be used for spot selection.

➢Note

The direction of the selection is remembered. This is especially important when programming Effects. When the spot selection is 1 → 12, spot 1 is the leading spot in the Effect. When the spot selection is 12 → 1, spot 12 is the leading spot in the Effect.

Changing the number default selection

When the number default selection is spot, the first number you press is recognized as a spot selection. The number default selection can also be Channel or Memory.

Keypresses	**Results/Comments**
1. Hit **[SPOT]** twice.	*Spot* appears on a gray field in the command line.

Selecting spots using the numeric keypad

When a spot number is selected, all the parameter names and numbers appear on the Stage display. The spot/s selected appears in the command line after *Spot*.

Keypresses	**Results/Comments**
1. Press **[SPOT]**	Skip this step if the default number selection is Spot.
2. Enter the desired spot number on the numeric keypad.	The parameter names of the selected spot/s appear on the Stage display. They also appear in the LCD wheels' displays above the parameter selection keys.

Selecting more than one spot

There are several series of keystrokes to select one or more than one spot at a time. These keystrokes may be combined in any way lending great versatility to spot selection.

[SPOT #] Select a single spot.

[SPOT #] [SPOT #] [SPOT #]... (SPOT, functions as an "and" key) Select a group of spots.

[SPOT] [# →#] Select a range of spots.

[SPOT # → #] [EXCEPT #] Select all the spots in the range, excluding the designated spot.

Any permutations of spot selection may be used.

For example:
[1 →3] [SPOT 8] [SPOT 10] [SPOT] [22 → 30] [EXCEPT] [SPOT 25].
These possibilities make spot selection very flexible.

You can also program Groups for one press selection of frequently used groups of spots. See Chapter 17 Groups.

Selecting spots using the Numeric Soft Keys

A double hit on **[SPOT]** NSK mode sets the Numeric Soft keys for spot selection. *Spot* appears in the mode display window and is marked in red on the Numeric Soft Key display.

To view the NSK display press **[EXAM] [51-100]**.

All spots are available on the NSKs. **[UP]** and **[DOWN]** increment or decrement the NSKs by 100. Example: The NSKs start from 1. Press **[UP]** the first NSK is 101. The NSKs start at 51. Press **[UP]** the first NSK is 151.

Selected spots are displayed in red on the Stage display and in the command line.

➢Note

When discussing the Numeric Soft Keys **[SPOT]** refers to the NSK mode key.

Example: Select spots 13, 20, and 93.

Keypresses	Results/Comments
1. Press NSK mode key **[SPOT]** twice.	Skip this step if the NSK mode is Spot.
2. Press NSK 13 and NSK 20	The LEDs of the selected keys are lit. The selected spots are displayed in red (selected) on the spot display.
3. Press **[51 – 100]**	Access the second page of numeric soft keys (numbers 51 - 100).
4. Press NSK 93	The parameter names appear in the LCD wheels' displays.

Selecting a range of spots using the Numeric Soft Keys

There as an additional "thru" key (→) located in the Numeric Soft key mode area. It is used for range selections on the Numeric Soft keys.

Example: Select spots 12 - 18.

Keypresses	Results/Comments
1. Press **[SPOT]**	Skip this step if the NSK mode is Spot.
2. Press NSK 12	Spot 12 is displayed in red on the stage display.
3. Press **[→]**	
4. Press NSK 18	All spots from 12 to 18 are selected in the editor (displayed in red) and can be assigned parameter values.

Or

Keypresses	**Results/Comments**
1. Press **[SPOT]**	Skip this step If the NSK mode is Spot.
2. Press NSK 12 and NSK 18 simultaneously.	

Canceling a selection using NSKs

Example: Spots 12 → 18 are selected. Cancel the selection for spots 16.

Keypresses	**Results/Comments**
1. Press **[SPOT]**	Skip this step If the NSK mode is Spot.
2. Press NSK 16	The NSK 16 LED is extinguished.

Example: Spots 12 → 18 are selected. Cancel the selection for spots 13 → 16.

Keypresses	**Results/Comments**
1. Press NSK mode key **[SPOT]** twice.	Skip this step if the NSK mode is Spot.
2. Simultaneously press NSK 13 and NSK 16	The selection is canceled. Their NSK LEDs are extinguished.

Recalling the last selection

For editing speed Sabre offers a sequence that reselects the last of group of channels and/or spots that were active in the editor.

Keypresses	**Results/Comments**
1. Press **[SPOT]**	
2. Press **[•]**	Spots that were selected previous to the last press on **[RESET]** are selected and appear in red. They can now be edited as usual.

Selecting spots in the editor and on stage

The are some specialized spot selection key sequences that allow you to grab spots that are in the editor and "on stage" (their output derives from a playback device).

In the examples below, spots 1, 5, 8, and 20 are present in the editor.

- **[SPOT] [5 → → 8]**
  Select spots 5 and 8. If there are spots within the selected range, whose output originates from A/B or the controllers they are also selected when using this sequence.
- **[SPOT] [→] [→]**
  Select all of the spots present in the editor and spots whose output originates from A/B or the controllers. The command line displays: *spot from editor & stage*.

This selection tool is useful when universally modifying all of the spots contained in a memory. Example: You want to add 10% to all of the intensity assignments in memory 1. Press: **[MEMORY 1] [SPOT → →] [dimmer wheel]**

- **[SPOT 5] [→] →]**
  Select spots 5, 8, and 20. If there are spots, from spot 5 and up, whose output originates from A/B or the controllers they are also selected when using this sequence. The command line displays: *spot from editor & stage*.
- **[SPOT 1] [→]**
  Selects all of the spots (from spot 1 to the last spot) in the system.
- **[SPOT] [5 → 8]**
  Select all of the spots included in the range.

Mix Editing of Spots

The *Mix Editing of Spots* option appears in the System Parameters menu (see Chapter 26 System Configuration). This determines whether spots of different types are included when a range of spots is selected or if only one type of spot in the selected range will be addressed in the editor.

If the *Mix Editing of Spots* option is active and you select a range of spots, the entire selection is addressable in the editor. If, however, the *Mix Editing of Spots* option is 'off', only one type of spot is selected. The type of selected spot is determined by the last selection in the range.

Example: Spots 1→ 4 are Intellabeams, spots 5→ 8 are Martins, and spots 9 →16 are Goldenscans. If the mix edit option is 'on' and you select spots 1→12 all the spots are selected in the editor. If the mix edit option is 'off', however, only the Goldenscans (9 -16) will be selected. If the range selection was 1→ 8, only the Martins will be selected.

Spot Parameters

Each parameter has a name and a number. Once you have selected a spot, a group of spots, or a range of spots, the parameter names appear next to the parameter numbers in the spot display.

Parameters are assigned values using either the parameter wheel or selecting a parameter and assigning a value on the keypad or using the numeric soft keys.

There are 3 types of parameters: continuous parameters, discrete step parameters, and mixed step parameters.

Certain parameters of Intellabeam and Cyberlight work in more than one mode (such as a color wheel which can have a half color, rotation, etc.). An additional icon displayed after the parameter value represents modes.

Parameter wheels

The wheels operate in a 'non-collapsing' mode, meaning that the relative difference of the values between different spot parameters is preserved when the spots are faded up or down.

For example, the editor contains spot 1 at 75% intensity and spot 2 at 85%. Select both of the spots (channels) and begin to wheel up. Spot 2 reaches full intensity when spot 1 is at

90%. If you continuing moving the wheel until spot 1 is at FL and then you fade both spots down, spot 1 will begin the fade first. The 10% difference in the spots' intensities is always maintained.

The above example uses the dimmer parameter, however the explanation is valid for all the parameters.

Sabre has 8 parameter wheels. The wheel labeled “Dimmer” is used for the dimmer parameter or pan. The wheel labeled “Iris” is reserved for the iris attribute and tilt.

6 wheels control all other parameters. Each wheel controls the 4 parameters mapped to the wheel.

The 4 parameter keys associated with each parameter wheel are used to select parameters. The parameter names appear on the LCD display above the Parameter keys (P keys). The active parameter is enclosed in brackets. It is not necessary to reselect a parameter enclosed in brackets in order to access it using the wheel. To access a different parameter, press its key.

Parameters are also assigned to banks. There are 6 banks: I, F, C, B, 1, 2. You can change the parameter to bank assignments, by reprogramming the assignments under the Mix Output menu/Select Device/Bank Setup.

Wheel resolution can be globally adjusted. See below – Trackball and wheel resolution.

Trackball

The trackball controls position.

The X-axis is the left/right movement and the Y-axis is the up/down movement. Pressing **[X LOCK]** or **[Y LOCK]** limits the trackball to the selected axis.

Trackball resolution

The *Wheels and Trackball Resolution* switch, for 16-bit parameters, in the System Parameters menu controls the sensitivity of the wheels and trackball.

Resolution Setting	How it affects the trackball and wheels
Sensitivity 0	Exp (exponential) this is a dynamic mode. The mirror reacts according to the speed you are moving the trackball. If you are moving the trackball slowly, the resolution is very fine; a lot of trackball movement results in small increments to the mirror position. If you move the trackball quickly, the resolution is coarser and the mirror moves in larger increments.
Resolution 1	16 bit parameters operate in regular 8-bit resolution.
Resolution 2	Medium resolution.
Resolution 3	Highest resolution. Parameter wheels control the lease significant bit for 16-bit resolution.

[FINE-TUNING] toggles between the resolution selected in the System Parameters menu and extremely fine resolution. When this key is enabled (Led on) the wheels and trackballs controlling pan and tilt increment the mirror position bit by bit.

Assigning values to pan and tilt

Keypresses	Results/Comments
1. Select spots	The parameter names are displayed on the Stage display and the wheels' LCD display.
2. Move the Trackball.	X and Y are selected. The parameter values are displayed in white.

Or

Keypresses	Results/Comments
1. Select spots.	The parameter names are displayed on the Stage display and the wheels' LCD display.
2. Press **[X]** or **[Y]**	X (pan) or Y (tilt) is displayed on a red field.
3. Enter a value on the keypad.	

Or

Keypresses	Results/Comments
1. Select spots.	The parameter names are displayed on the Stage display and the wheels' LCD display.
2. Press **[X]** or **[Y]**	Skip this step if **[X]** or **[Y]** is already active (LED on)
3. Use the Dimmer/X wheel to assign pan value. Use the Iris/Y wheel to assign tilt value.	

Assigning dimmer values

Keypresses	Results/Comments
1. Select spots.	The parameter names are displayed on the Stage display and the wheels' LCD display.
2. Press **[DIM]**	Skip this step if **[DIM]** is active (LED on)
3. Use the dimmer wheel to assign a value.	The dimmer value is displayed in white on the Stage display.

Or

Keypresses	Results/Comments
1. Select spots.	The parameter names are displayed on the Stage display and the wheels' LCD display.
2. Press **[DIM]**	
3. Assign a value on the keypad.	

Or

Keypresses	Results/Comments
1. Select spots.	The parameter names are displayed on the Stage display and the wheels' LCD display.
2. Press **[DIM]**	
3. Press **[FULL]**	The dimmer is 100%.

Selecting parameters and assigning values

Press a P (parameter) key, located above the wheels, to select an individual parameter. The active wheel assignment appears in brackets on the wheels' LCD display.

The active parameter default depends on the selected wheel bank. .

Wheel Bank	Default selections
I (intensity)	**[DIM]** and **[IRIS]**
F (focus)	**[X]** and **[Y]**
C (color)	Color parameters
	[DIM] and **[IRIS]**
B (beam)	Gobo and other beam shaping parameters
	[DIM] and **[IRIS]**

Selected parameters appear in dark red on the spot display and the parameter key LED blinks. Parameters that are present in the editor (parameters that were previously addressed) appear in light red on the spot display and the parameter key LED is lit.

After selecting a parameter you can assign a value using the wheel, **[STEP UP]** or **[STEP DOWN]**, and assigning a value on the numeric keypad. The parameter remains selected. To select another parameter press a Parameter key.

To select a new spot after finishing the parameter value assignments, you must press **[SPOT #]** or select a spot on the NSKs in Spot mode.

To continue spot selection you can press **[+]** or **[—]** to increment or decrement the spot selection. When a new spot is selected, the previous selection is now displayed in white to indicate its presence in the editor. The newly selected, currently active spot number appears in red and all of its parameters may be addressed.

Assigning values for continuous steps

Continuous parameters wheel up from 0 to Full. Continuous parameter values are displayed as a number from zr - FL.

Assigning a value using the numeric keypad

Keypresses	Results/Comments
1. Select spots.	
2. Press a Parameter key.	The selected parameter appears in brackets on the LCD display, the LED of the key blinks, and the parameter name is shown on the spot display.
3. Enter the parameter value on the numeric keypad.	If the system is set to USA system (see Service Tools/special functions/bit I) enter a 2 digit number. Example: assign 65% to a continuous parameter by selecting the parameter and pressing **65**. If the system is not set to USA press **6.5**.

Assigning values using the wheel

Example: Assign 65% to a continuous parameter

Keypresses	Results/Comments
1. Select spots.	
2. Press a Parameter key.	The selected parameter appears in brackets on the LCD display, the LED of the key blinks, and the parameter name is shown on the spot display in dark red.
3. Turn the parameter wheel until *65* is reached.	

Assigning values for discrete steps

Discrete parameters increment by one step at a time. Each increment produces an audible click to aid you in value selection.

Example: gobo wheels are usually discrete step parameters, enabling easy selection of each gobo. Superscan Zoom E's static gobo wheel is defined as a 5 discrete step parameter. When using the parameter wheel to assign the gobo, the gobo wheel will move from gobo to gobo, with no stops in between.
Discrete parameters are displayed as a single digit preceded by an icon. Thus step 4 is displayed like this: ¤ 4 . Step 14, like this: 4 .

Assigning a value to a discrete step using the numeric keypad

Example: You have selected Superscan Zoom E's gobo wheel (parameter 6). You want to assign step 2.

Keypresses	**Results/Comments**
1. Select spots.	
2. Press a Parameter key.	
3. Press 2 on the keypad.	Enter a double digit (02, in this case) if there are more than 9 steps defined.

Using the Step keys

Keypresses	**Results/Comments**
1. Select spots.	
2. Press a Parameter key.	The selected parameter appears in brackets on the LCD display, the LED of the key blinks, and the parameter name is shown spot display in dark red.
3. Press **[STEP UP]** or **[STEP DOWN]**	Each press on these keys either increments or decrements the current value by 1 step.

Assigning values for mixed steps

Discrete steps with continuous control between the steps.

Example: Superscan Zoom E's dimmer control channel controls both the dimmer and the shutter (strobe). Sabre controls this as 2 mixed steps; step 1 and the continuous control within step 1 controls the dimmer and step 2 controls the strobe rate.

Mixed steps are displayed in #.# format; step 1 at 60% is 1.6, step 2 at full is 2.f. The number after the decimal point represents the percentage of the step; each step has a range from 0 to full. The actual percentage of the parameter control channel range is defined in the Mix Output menu.

[STEP UP] and **[STEP DOWN]** moves from step to step. Within each step there is continuous control via the parameter wheel.

Assigning a mixed step value using the numeric keypad

Example: assign step 2 at full to Superscan Zoom E's color wheel parameter (p14).

Keypresses	**Results/Comments**
1. Select spots.	
2. Press a Parameter key.	The selected parameter appears in brackets on the LCD display, the LED of the key blinks, and the parameter name is shown in red on the spot display
3. Press **[2] [•] [FULL]**	The parameter value for p14 shows 2.f.

Assigning a mixed step value using the numeric keypad

Example: Assign step 2 at full to Superscan Zoom E's color wheel parameter (p14).

Keypresses	Results/Comments
1. Select spots.	
2. Press a Parameter key.	The selected parameter appears in brackets on the LCD display, the LED of the key blinks, and the parameter name is shown in red on the spot display
3. Press **[STEP UP]** or **[STEP DOWN]** until step 2 is selected.	
4. Press **[FULL]**	The parameter value for p14 shows 2.f.

Parameter modes for Cyberlight and Intellabeam

Some of the parameters for Cyberlight and Intellabeam have different operating modes. These parameters are:

- Static gobo (p6) - Intellabeam and Cyberlight.
- Shutter (p 8) - Intellabeam and Cyberlight.
- Effect (p12) - Cyberlight only.
- Rotating gobo (p13) - Cyberlight only.
- Color wheel (p 15 for Cyberlight; p2 for Intellabeam).

Static Gobo (p6)

ICON/FUNCTION MODE
⟨ (Cyberlight only)
⟩ (Cyberlight only)
← direction of gobo wheel rotation
→ direction of gobo wheel rotation
(=) gobo shake (Cyberlight only)
(-) gobo scan (Cyberlight only)
» fast crossfade (jump in crossfade)
≈ proportional crossfade (fade in crossfade).

Shutter (p8)

ICON/FUNCTION MODE
→ strobe speed
<> indicates shutter open
◂ ▸ indicates shutter closed

Effect (p12 - Cyberlight only)

ICON/FUNCTION MODE
» fast crossfade
≈ proportional crossfade

Rotating Gobo (p 13 Cyberlight only)

ICON/FUNCTION MODE
i gobo index
← direction of gobo wheel rotation
→ direction of gobo wheel rotation
(=) gobo shake
⊄ set the angle of the gobo in the gobo holder
» fast crossfade (jump in crossfade)
≈ proportional crossfade (fade in crossfade).

Color Wheel (p2 Intellabeam; p14 Cyberlight)

ICON/FUNCTION MODE
← direction of color wheel rotation
→ direction of color wheel rotation
(=) color shake (Cyberlight only)
(-) color scan (Cyberlight only)
◧ » half color with fast crossfade
◧ ≈ half color with proportional crossfade
□ »full color with fast crossfade
□ ≈ full color with proportional crossfade

Changing parameter modes

The parameter operating modes are accessed through the parameter keys. If the selected parameter is on the lower parameter keys, the modes appear in the upper LCD display and are accessed with the associated parameter wheels. If the selected parameter is on the upper parameter keys, the modes appear in the lower LCD display and are accessed with the associated parameter wheels. The left wheelalso controls the parameter value.

Example: Change the color wheel mode to half color proportional.

Keypresses	**Results/Comments**
1. Select spots	
2. Press the key for cw	The parameter modes appear on the lower LCD display.
3. Press the parameter key below the icon ◧	

Returning to home values

Home values for parameters are included in the spot definition. Home values are usually neutral assignments, such as no color, no gobo, shutter/iris open, dimmer on, etc.

Home values are defined in the Device Definition in the Mix Output menu.

There are 2 ways to “home” a parameter value:

- Use the **[HOME]** key to home all of the parameters
- **[CL1]** and **[CL2]** also reference the home values, assigning the preset value to the parameters included in the clear functions.

Assigning home values

Home all parameter values.

Keypresses	Results/Comments
1. Select spots.	
2. Press **[HOME]**	All parameters are assigned home values, as preset in the device definition.

Clearing parameter values

[CL1] and **[CL2]** assign home values to the parameters included in these clear functions. The default for CL1 usually includes all of the color parameters and for CL2 usually includes all of the gobo parameters.

Parameters may be included or excluded from the clears In the Mix Output menu/Define Device/Edit Init. (See Chapter 27 Mix Output Menu)

Keypresses	Results/Comments
1. Select spots.	
2. Press **[CL 1]** or **[CL 2]**	Returns the parameters defined under **CL1** and/or **CL2** to their home values.

Copying parameter values

The Copy function permits copying parameter values from one spot to one or more spots.

All assigned parameter values or values from selected parameter may be copied from one spot to another. This function is extremely useful when creating libraries especially with devices using color mixing. Set the color for one of the spots and copy the parameter values to the others.

Parameters may be copied from the editor, memories, or libraries.

Copying from the editor

Keypresses	**Results/Comments**
1. Select spots.	Select the spot number to which you will be copying the parameters.
2. Select parameters (optional)	If you do not select specific parameters the values of all of the parameters are copied.
3. Press **[COPY]**	Select the copy function. *Copy from* appears in the command line.
4. Select the spot being copied.	
5. Press **[ENTER]**	The values are copied to the selected spot.

Copying from a memory

Keypresses	**Results/Comments**
1. Select spots.	Select the spot number to which you will be copying the parameters.
2. select parameters (optional)	If you do not select specific parameters the values of all of the parameters are copied.
3. Press **[COPY]**	Select the copy function. *Copy from* appears in the command line.
4. Select the memory.	
5. Select the spot you are copying from.	
6. Press **[ENTER]**	The values are copied to the selected spot.

Copying a spot position

Only spots that have been set up in the Leader menu are eligible for this function. See Chapter 25 - Leader

Copy spot position provides an easy method of moving a spot to the same position as another spot.

This function can greatly enhance editing speed. To fully utilize this function make this Macro: **[COPY] [LEADER]**.

Keypresses	Results/Comments
1. Select spots.	Select one of the spots that has been initialized in the leader set up.
2. Trackball	Move to the desired position.
3. Press **[COPY]**	Select the copy function. *Copy from* appears in the command line.
4. Select the spot being copied.	
5. Press **[LEADER]** (in editor section, not the NSK mode)	
6. **[#]** (optional)	If no spot number is selected the system assumes the last selected spot. Example: if the sequence was **[SPOT 3] [TB] [SPOT 5] [COPY] [LEADER]**, the system assumes it is copying the position of spot 3.
7. Press **[ENTER]**	The selected spots jump to the target position.

Releasing Spots/Parameters from the Editor

While editing spots for memory programming, you might want to release a spot or a parameter of a spot from the editor so it will not be included in the memory.

Releasing a spot from the editor

Keypresses	Results/Comments
1. Select the spot number.	
2. Press **[RELEASE]**	The spot is released and is returned to the next control level or tracking.

Releasing a parameter from the editor

Keypresses	Results/Comments
1. Select spots	
2. Pressing a Parameter key.	
3. Press **[RELEASE]**	The parameter is released and is returned to the next control level or tracking.

➢Note

If you release a parameter from the editor and then proceed to record a memory, the released parameter will still be included in the memory if the dimmer of the spot is on and **[ALL IF DIM]** is active (LED on).

To make sure that parameters you have released in the editor are not recorded into the memory, press **[ALL IF DIM]** to turn off the function or toggle *All if Dim*, in the System parameters menu, to *No*.

CHAPTER 6
SELECTING AND EDITING CHANNELS AND SCROLLERS

This chapter includes:

Changing the Number Default Selection

If the Number Selection default is channels, it is unnecessary to press **[CHANNEL** before selecting the first channel number.

The number default selection can also be Spot or Memory.

Keypresses	Results/Comments
1. Double hit on **[CHANNEL**.	*Chan* appears on a gray field in the command line.

Selecting Channels

There are quite a few key combinations that can be used for channel selection. The object of the different key sequences is to facilitate rapid selection.

Channels that have been designated as scroller channels, through assignment in the Scroller menu, are displayed with a small s next to the channel number. Scroller frame tracking is displayed under the scroller channel.

The dimmer wheel is used for intensity levels and the iris wheel is used for scroller frame selection. Scroller frames may also be assigned on the numeric keypad. Single channels, groups of non-sequential channels, and a range of sequential channels can be selected.

There are special selection sequences that grab channels that are present in the editor together with channels active on stage.

There are several series of keystrokes to select one or more than one channel at a time. These keystrokes may be combined in any way lending great versatility to channel selection.

If the Number Selection default is channels, it is unnecessary to press **[CHANNEL]** before selecting the first channel number.

Selecting a single channel

Keypresses	Results/Comments
1. Press **[CHANNEL]**	If the numeric selection default is channel, it is unnecessary to press **[CHANNEL]**.
2. Enter a channel number on the keypad.	

Selecting multiple channels

Keypresses	Results/Comments
1. Press **[CHANNEL]**	If the numeric selection default is channel, it is unnecessary to press **[CHANNEL]**
2. Enter a channel number on the keypad.	
3. Press **[CHANNEL]**	This acts as an “and” key.
4. Enter a channel number on the keypad.	
5. Repeat steps 3 and 4 as required.	

Selecting a range of channels

Keypresses	Results/Comments
1. Press **[CHANNEL]**	If the numeric selection default is channel, it is unnecessary to press **[CHANNEL]**.
2. Enter the first channel of the range on the keypad.	
3. Press **[→]**	
4. Enter the last channel in the range, on the keypad.	

Excluding channels from a range selection

[EXCEPT] excludes selected channels from the range.

Keypresses	Results/Comments
1. Press **[CHANNEL]**	If the numeric selection default is channel, it is unnecessary to press **[CHANNEL]**.
2. Enter the first channel of the range on the keypad.	
3. Press **[→]**	
4. Enter the last channel in the range, on the keypad.	
5. Press **[EXCEPT]**	The range of selected channels is displayed in red.
6. Select the channel being excluded.	The excluded channel is released from the editor. A range of channels or a group of channels can be selected.
7. To exclude more channels repeat steps 5 and 6.	

Recalling the last selection

For editing speed Sabre offers a sequence that reselects the last of group of channels that were selected (displayed in red) in the editor.

To recall last channel selection:

Press **[CHANNEL] [•]**.

Grabbing channels in the editor and on stage

The are some specialized channel selection key sequences that allow you to grab channels that are in the editor and "on stage" (their output derives from a playback device).

In the examples below, channels 1, 5, 8, and 20 are present in the editor.

- **(CHANNEL) [5 → → 8]** selects channels 5 and 8. If there are channels within the selected range, whose output originates from A/B or the controllers they are also selected when using this sequence.
- **(CHANNEL) [→] [→]** selects all the channels present in the editor and on stage.
- **(CHANNEL) [5 → →]** selects channels 5, 8, and 20 and any channels on-stage.
- **(CHANNEL) [1 →]** selects all the channels (from channel 1 to the last channel) in the system.
- **(CHANNEL) [1 → 8]** selects all the channels included in the range.

Assigning intensity levels

After selecting channels use the numeric keypad, the dimmer wheel, or the absolute intensity assignment keys **[FULL]** and **[ZERO]** to assign dimmer levels.

Entering a single digit is understood as a whole decimal number (4 is 40%, 6 is 60%, etc.). For sub-decimal intensity assignments, use the dot (4.5 = 45%, etc.).

If the system is defined 'USA' enter 45 on the keypad to obtain 45% and enter 60 on the keypad to obtain 60%. (See Chapter 26 – System Configuration)

Selecting channels and pressing **[FULL]** brings the dimmer to 100% intensity.

Selecting channels and pressing **[ZERO]** forces the dimmer to 0%.

Example: Assign 70% intensity to channel 5

Keypresses	**Results/Comments**
1. Press **[CHANNEL]**	If the numeric selection default is channel, it is unnecessary to press **[CHANNEL]**.
2. Enter 5 on the keypad.	
3. Press **[@]**	*INT* appears in the command line after the channel selection and channel 5 is displayed in red.
4. Press **[7]** If the system is defined as USA, press **[70]**	70 is displayed under the channel number on the Channel display.

Assign 73% intensity to channel 5:

Keypresses	Results/Comments
1. Press **[CHANNEL]**	If the numeric selection default is channel, it is unnecessary to press **[CHANNEL]**.
2. Enter 5 on the keypad.	
3. Press **[@]**	*Int* appears in the command line after the channel selection and channel 5 is displayed in red.
4. Press **[7] [•] [3]** If the system is defined as USA, press **[73]**.	73 is displayed under the channel number on the channel display.

Releasing channels from the editor

A single channel, a range of channels, or a group of non-sequential channels can be released.

Keypresses	Results/Comments
1. Select the channel.	
2. Press **[RELEASE]**	The channels' intensity fades to 0. When they reach 0 the channels are released from the editor and no longer appear on the Channel display.

Selecting and Editing Scrollers

If your system definition includes scrollers, the channel display shows a small 's' next to the channel number, indicating that this channel is a two parameter channel; one parameter being intensity and the other the scroller frame number. The scroller frame numbers are displayed under the channel number and are tracked like spot parameters.

If you have taken advantage of the scroller patch table, scrollers are addressed by the channel number of the lighting fixture on which they are mounted.

The channel area of the stage display shows the channel and associated scroller information. Underneath the intensity level, the current frame position of the scroller is shown.

The color key for scrollers and frame numbers is:

Color	What it means
Dark gray	Scroller frame tracking.
Red	Scroller channels selected in the editor
Green	Frames active in the editor or output from a playback device.

If no frame value has been assigned to a scroller, the current frame is determined by the tracking.

Assigning frame values

Frames can be assigned using the numeric keypad or the iris wheel.

When using the numeric keypad:

If the system is configured for at least 10 frames, you must enter frame 1 as **01**.

If the system is configured for at least 20 frames, you must enter frame 2 as **02**.

If the system is configured for at least 30 frames, you must enter frame 3 as **03**.

When moving from frame to frame using the wheel additional symbols are displayed.

← Indicates the position at less than half frame.
≡ Indicates half frame.
→ Indicates more than half frame

In the example below channel 5 is the control channel. Assign frame 11.

Keypresses	**Results/Comments**
1. Select channel 5.	
2. Press **[FRAME]**	The channel is displayed in red and the frame value is displayed in green, meaning that the scroller channel is selected in the editor and is ready for a value assignment.
3. Enter 11**]** on the keypad.	
4. To assign a different frame value, press **[FRAME]** again and select a frame number.	

➢Note

If you use the wheel to assign frame values, do not press **[FRAME]**. Just select the channel/s and move the wheel.

CHAPTER 7
PROGRAMMING MEMORIES

This chapter includes:

Overview

Memories are programmed by assigning a number to a lighting state and recording.

There are 2 methods for creating lighting state: by selections in the editor and using controller and crossfader assignments to create a lighting state.

1. Select spots and channels in the editor and assign intensity/parameter values. Store the resulting lighting state as a memory. Programming using the editor can be done in live or blind mode. Refer to Chapter 5 Selecting and Editing Spots and Chapter 6 Selecting and Editing Channels and Scrollers for more detailed information about parameter value and intensity selection.
2. Groups or memories assigned to controllers or crossfaders are also used to construct a lighting state. In this case, the lighting state is entered into the editor using the Call function. Then the group in the editor is assigned a memory number and stored.

Fade, wait, and delay times can be assigned to each memory.

Memories can be organized into Q Lists. If, for example, you have 5 dance pieces to light, the memories for each dance can be stored in separate Q Lists. Q Lists are independent entities. For more information about Q Lists see Chapter 16 - Q List.

Other memory attributes are Loops, Links, and Parts.

Resetting the Editor

After storing a memory the participating spots and channels remain in the editor until pressing **[RESET]**. You can continue programming memories using the editor group that has remained in the editor.

If you have stored the memory by selecting a number and pressing **[STORE]**, the channels/spots are retained in the editor; they are displayed in white. You can continue by selecting spots/channel.

Channels/spots that were selected (displayed in red) before storing a memory by pressing **[+STORE]**, remain selected.

Memories can contain both spots and channels. For simplicity's sake programming memories with spots, memories with channels, and memories with scrollers are treated individually, of course memories can contain all these elements.

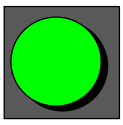
Programming with Spots

Values for spot parameters are assigned to each parameter individually.

Libraries and Palettes are also used to assign values. Libraries can be programmed for Positions, Colors, and Gobo parameters. One advantage of using Libraries is updating Libraries updates memories that were programmed with the Library database. See Chapter 9 – Libraries for information about programming Libraries and programming memories using Libraries. See Chapter 18 – Palettes for information about programming palettes and programming memories using Palettes.

The example below shows how to select parameters and assign values to the selected parameter.

Example: Memory 1 consists of spot 1. The parameter values are assigned as follows: x 45, y 68, dim 55%, P1 iris Fully open, P6 gobo 5

Keypresses	**Results/Comments**
1. Select Spot 1.	
2. Press **[DIM]** or move the Dimmer wheel.	The LED of the key lights. If you use the Dimmer wheel skip this step and skip step 3.
3. Press **[5] [•] [5]** on the numeric keypad.	If the system is defined as USA, press **55** leaving out the decimal point.
4. 	Use the trackball to position the pan and tilt. If a spot is not responding properly, make sure that the velocity parameter (if there is a velocity or speed parameter present) is set at more than zero, and the shutter (if present) is open, and the iris is open.
5. Press **[IRIS]**	The LED of the key lights. If the LED is already on you can skip this step and use the Iris wheel. Also skip step 6.
6. Assign a parameter value.	Assign a value on the numeric keypad.
7. Press the Parameter key to select the gobo.	
8. Assign a value.	If the parameter is a discrete step parameters (as are most gobo parameters) use the **[STEP UP]** and **[STEP DOWN]** keys. The associated parameter wheel can also be used.
9. Press **[=]**	Set the system to memory record mode. The word *memory* appears in the command line. If the system is defined as USA, press **[MEMORY]** instead.
10. Enter 1 on the keypad.	Enter the memory number.
11. Press **[STORE]**	The message *Memory 1 Stored* is displayed. The spots remain in the editor.

➢Note

If the memory number already in use, the message *Memory Exists* is displayed.

If you do not want to overwrite the existing memory, press **[CLEAR]**.

To overwrite the existing memory, press **[STORE]** again.

All If Dim

When this option is active, all parameters are included in memory recording if the dimmer of the selected spot is assigned intensity above 0%. This ensures that any parameters you do not directly address will be recorded into the memory instead of remaining in tracking only and causing confusion later on.

Since this is a default selection, the LED of this key is lit when you power up the system. To cancel this function, press the key and the LED will extinguish.

When **[ALL IF DIM]** is disabled, any memory recorded includes only the selected parameters.

This function may also be enabled or disabled in the System Parameters menu. The All If Dim function appears in the System Parameters menu as *Store Tracking If Dimmer On*.

Programming with Channels

Example: Select channel 1, assign 45% intensity, and record as memory 2.

Keypresses	Results/Comments
1. Select channel 1	*Channel 1* appears in the command line.
2. Press **[@]**	On assignment of an intensity level, the channel number is displayed in red. If you use the Dimmer wheel skip this step and the step 3.
3. Press **[4] [.] [5]**	Entering 4 on the keypad will result in an intensity assignment of 40%. Use [•] (dot) to enter any intensity less than a round 10. Example: 4.5 represents intensity of 45%. If system is configured for USA (Service Tools/config sys) enter the intensity number without the decimal point (e.g. enter 45).
4. Press **[=]**	Set the system to memory record mode. *Memory* appears in the command line. For USA (Service Tools/config sys) press **[MEMORY]** instead of **[=]**.
5. Enter 2 on the keypad.	
6. Press **[STORE]**	The message *Memory 2 Stored* is displayed. The channels remain in the editor.

Programming with Scrollers

The example below uses the numeric keypad to assign the frame number. You can, however, address the scroller using the Iris wheel. Using the wheel obviates pressing **[FRAME]**.

Example: select scroller channel 10, set the dimmer level to 100%, set the scroller frame at 2, and record as memory 3.

Keypresses	Results/Comments
1. Select channel 10	
2. Press **[FULL]**	Channel 10's dimmer is at 100%.
3. Press **[FRAME]**	If you use the wheel, skip steps 3 and 4.
4. Select **02**	Enter the frame number as 2 digits.
5. Press **[=]**	*Memory* appears in the command line.
6. Enter 3 on the keypad	
7. Press **[STORE]**	*Memory 3 Stored* is displayed. The scroller channels remain in the editor.

Sequential Memory Programming

Storing a memory does not automatically clear the editor. This permits building memories sequentially.

After storing memory 3, you can program memory 4 continuing with the group of channels that remained in the editor after the last store command.

Example: Program memory 4 by adding a few channels to the current editor.

Keypresses	**Results/Comments**
1. Select channels.	
2. Use the Dimmer wheel to assign intensity values or press @ and enter intensity value on the keypad.	When the wheel is moved the selected channels are displayed in red.
3. Press **[+STORE]**	The message *Memory # Stored* is displayed. The channels/spots that are selected in the editor (displayed in red) remain selected after storing a memory using this method.

➢Note
The +Store increment depends on the value entered in the System Parameters menu under *+Store increment*.

Using the Copy Function

The Copy function is used to:

1. Copy parameter values from one spot to another using the values from the editor, from memories, or from libraries.
2. Copy channel intensity from the editor or from memories.
3. Copy scroller values form the editor or from memories.

Copying all parameters from the editor

Example: Copy all the parameter values from spot 10 to spot 4.

Keypresses	**Results/Comments**
1. Select spot 4.	Select the target spot.
2. Press **[COPY]**	*Copy from* appears in the command line.
3. Select spot 10	Select the spot being copied from.
4. Press **[ENTER]**	The editor values are copied from spot 10 to spot 4.

Copying selected parameters from the editor

Example: Copy the gobo parameter values assigned to spot 10 to spot 4.

Keypresses	Results/Comments
1. Select spot 4	Select the target spot.
2. Select the Gobo parameter	
3. Press **[COPY]**	*Copy from* appears in the command line.
4. Select spot 10	Select the spot being copied from.
5. Press **[ENTER]**	The editor values are copied from the selected parameter/s in spot 10 to spot 4.

Copying spot parameters from a memory

Example: Copy all the parameter values from spot 10 in memory 1 to spot 4.

Keypresses	Results/Comments
1. Select spot 4.	Select the target spot.
2. Press **[COPY]**	*Copy from* appears in the command line.
3. Select memory 1	Select the memory you are copying from.
4. Select spot 10	Select the spot being copied from.
5. Press **[ENTER]**	The values are copied from spot 10 in the selected memory to spot 4.

Copying selected parameters from a memory

Example: Copy the gobo value from spot 10 in memory 1 to spot 4.

Keypresses	Results/Comments
1. Select spot 4	Select the target spot.
2. Select the Gobo parameter.	The selected parameter is displayed in red.
3. Press **[COPY]**	*Copy from* is written in the command line.
4. Select memory 1	
5. Select spot 10	Select the spot being copied from.
6. Press **[ENTER]**	The selected parameter values are copied from spot 10 in the selected memory to spot 4.

Important! Do not copy parameters values from one type of spot to another type of spot!

Copying channel intensities from the editor

Example: Copy the intensity from channel 10 to channel 4.

Keypresses	**Results/Comments**
1. Select channel 4	Select the target channel.
2. Press **[COPY]**	*Copy from* appears in the command line.
3. Select channel 10	Select the channel being copied from.
4. Press **[ENTER]**	Channel 10's intensity is copied to channel 4.

Copying channel intensities from a memory

Example: Copy the intensity value assigned to channel 5 in memory 3 to channels 20 – 25.

Keypresses	**Results/Comments**
1. Select channels 20 – 25.	Select the target channels.
2. Press **[COPY]**	*Copy from* appears in the command line.
3. Select memory 3.	
4. Select channel 5.	Select the channel being copied from.
5. Press **[ENTER]**	The channel 5's intensity is copied to 20 – 25

Copying scroller frames from the editor

Example: Copy the scroller frame assignment from channel 10 to scroller channel 4.

Keypresses	**Results/Comments**
1. Select channel 4	Select the target spot.
2. Press **[FRAME]**	
3. Press **[COPY]**	*Copy from* appears in the command line.
4. Enter 10 on the keypad	Select the channel being copied from.
5. Press **[ENTER]**	

Copying scroller frames from a memory

Example: Copy the frame assigned to scroller channel 5 to scroller channels 20 – 25.

Keypresses	**Results/Comments**
1. Select channels 20 – 25.	Select the target channels.
2. Press **[FRAME]**	
3. Press **[COPY]**	*Copy From* appears in the command line.
4. Select channel 5.	Select the channel being copied from.
5. Press **[ENTER]**	

Using the Call Function

The Call function allows you to merge the console's output in the editor and store it as a memory. Merged output becomes an editor group. This editor group can be further modified or instantly recorded as a new memory.

Some ways to use the Call function are:

- When your lighting state consists of an assignment on a crossfader and some spots and channels in the editor, you can merge the output from the crossfader and the editor and store as a memory.
- Use memory or group assignments on the controllers as building blocks to create a lighting state, merge the output from the different playback devices, and store as a memory.
- Merge DMX input

After storing the editor group, resulting from merged output, the participating channels and spots are either released from the editor or retained in the editor. Basically, the editor retains control of channels and spots if releasing them will cause a change in the current lighting state. Spots and channels that have been called into the editor from a playback device (A/B, C/D, faders, and controllers) and have not been modified are released from the editor after **[STORE]** is pressed.

Using Call to store current output

Although the following example assumes that the only active output source is B, if other output sources are active (C, D, or controllers) their output is also called to the editor.

Example: Assume that you have a memory active on B and after selecting some spots that are not contained in the currently active memory, you decide to call the stage picture memory 100.

Keypresses	**Results/Comments**
1. Select and modify spots.	
2. Press **[CALL]**	The output is entered to the editor.
3. Press **[MEMORY]**	
4. Enter 100 on the keypad.	
5. Press **[STORE]**	The message: *Mem 100 Stored* is displayed. Output from the editor is retained in the editor. Output from crossfader B is released from the editor and control returned to crossfader B.
6. To remain in the same lighting state, assign memory 100 to an active playback device and press **[RESET]**. To return to the previous lighting state press **[RESET]** to clear the editor.	

➢Note

You can press **[+STORE]** or **[+]** and **[STORE]** if you wish to record to the next memory number as defined by the increment in the System Parameters menu.

Using Call and assignments to program memories

You can also use controller assignments to create a lighting state and record it as a memory.

Example: A three color cyclorama wash is assigned to the controllers. By combining the 3 colors at different levels, you create the desired color. You now want to record this as a memory 5.

Keypresses	**Results/Comments**
1. Use the controller assignments to create a lighting state.	
2. Press **[CALL]**	The console output is entered to the editor and appears in white.
3. Press **[MEMORY]**	*Memory* appears in the command line
4. Enter 5 on the keypad.	
5. Press **[STORE]**	The message: *Mem 5 Stored* is displayed. The editor is released.

Examining Memories, Channels, & Spots

The Exam display can be viewed on any of the monitors, depending upon which Exam key you have selected.

When you are examining a specific spots, channel, or memory, pressing **[+]** or **[—]** goes to the next or previous memory.

Page the Memory List with **[PAGE UP]** and **[PAGE DOWN]**.

➢Tip
You can create a Display Macro to always display the Memory List on one of the monitors. (See Chapter 3 Displays).

Examining memories

There are two memory exam displays: the memory list and selected memories.

Viewing the memory list

The Memory list is a sequential list of memories with their loop, link, and time assignments. The text column displays any text attached to the memory, Part Qs, and Events. The Q List number, overall loop assignment, total number of memories, range of memories and total time of the Q List, appear at the top of the memory list.

Viewing the memory list from the first memory

Keypresses	**Results/Comments**
1. Press **[MEMORY]**	
2. Press one of the Exam keys.	The Memory List is displayed on the monitor.

Viewing the memory list from a selected memory

Example: Begin viewing the memory list from memory 200

Keypresses	Results/Comments
1. Select memory 200	
2. Press →	
3. Press **[EXAM 1]**, **[EXAM 2]** or **[EXAM 3]**	The memory list, starting from memory 200, is displayed on the selected monitor.

Examining a selected memory

If the selected memory contains more than 24 spots, it is displayed on both monitors.

Keypresses	Results/Comments
1. Press **[MEMORY]**	
2. Select the memory number that you want to examine.	
3. Press **[EXAM 1]** or **[EXAM 2]** or **[EXAM 3]**	The display includes spots and parameter values, channels with intensity and scrollers, fade times, part assignments, text, and Q List.

Examining channels

There are 2 channel displays:

- Free channels - channels not used in any memories
- Selected channels

Viewing free channels

Keypresses	Results/Comments
1. Press **[CHANNEL]**	
2. Press **[EXAM 1]**, **[EXAM 2]** or **[EXAM 3]**	A list of channels that are not used in any memory is displayed.

Viewing selected channels

This is a 'strong' display. It is a handy screen to be looking at when using range memory modification (see Chapter 8 - Memory Modification).

Keypresses	Results/Comments
1. Press **[CHANNEL]**	
2. Select the channel number.	
3. Press **[EXAM 1]**, **[EXAM 2]** or **[EXAM 3]**	The display shows a list of the memories containing the channel, the intensity in each memory, and scroller frame assignments.

Examining spots

There are 2 spot exams:

- Free spots - is a list of spots not included in any memories
- Selected spot

Viewing free spots

Keypresses	Results/Comments
1. Press **[SPOT]**	
2. Press **[EXAM 1]**, **[EXAM 2]** or **[EXAM 3]**	A list of spots that have not been used in any memory is displayed.

Viewing selected spots

Keypresses	Results/Comments
1. Press **[SPOT]**	
2. Select the spot number on the numeric keypad.	
3. Press **[EXAM 1]**, **[EXAM 2]** or **[EXAM 3]**	The spot tracking sheet is displayed

Viewing library assignments in memories

When you examine a selected memory, library assignments are displayed on a light red field.

To view the absolute value in the library, press the Exam key again.

Text for Memories

You can attach text labels to memories, thus creating a 'cue sheet'. This text can be a short cue line, a page number, a score reference number, etc.

Text is displayed in the last column in the memory sheet and, if the memory is assigned to a controller, the first 4 characters appear on the LED display above the controllers.

Example: You want to attach the text 'house lights up. interval.' to Memory 25.

Keypresses	**Results/Comments**
1. Select memory 25.	
2. Press **[TEXT]**	*Text* appears in the command line.
3. Type 'house lights up. interval'	All typing is done in the alphanumeric keyboard or on the Numeric Soft keys in the Alpha mode.
4. Press **[STORE]**	

Fade Times

Time-in, time-out, delay, wait-in, and wait-out times may be assigned to memories.

If no time assignments are selected, the editor automatically assigns the Memory Default Time, as defined in the System Parameters menu. (See Chapter 26 – System Configuration)

If no time-out assignment is made the memory fading out will automatically adopt, as out time, the in time of the incoming memory.

Example: If memory 4 has a 6 count time-in assignment and memory 3 has no time-out assignment, memory 3 fades out in 6 counts when crossfading from memory 3 to memory 4.

Press **[0]** or **[•]** for a Cut (bump) fade time.

Use **[•]** to enter fractional times like 1.5 seconds, 0.5 seconds, etc.

The keys used to assign fade times are:

[TIME] and **[WAIT]**

PRESS	TIME ASSIGNMENT
[TIME]	**Time – in** When a go command is received, all the channels/spots fading to a higher intensity begin their fade. The fade takes place in the assigned time.
[TIME] [TIME]	**Time – out** When a go command is received, all the channels/spots fading to a lower intensity begin their fade. The fade takes place in the assigned time.
[WAIT]	**Delay** When looped memories (see Chapter 10 Loops and Links) are assigned Delay times, the delay time determines how long a memory stays on stage before the crossfade to the next memory in the loop begins. When Delay time is assigned to a single memory, it behaves as a follow on memory. Example: memory 3 has a delay time. When the crossfade to memory 2 is complete the crossfade to memory 3 begins automatically.
[WAIT] [WAIT]	**Wait – in** When a go command is received, all the channels/spots fading to a higher intensity begin to count the assigned wait time before beginning their fade.
[WAIT] [WAIT] [WAIT]	**Wait – out** When a go command is received, all the channels/spots fading to a lower intensity begin to count the assigned wait time before beginning their fade.

Assigning fade times to a new memory

Example: Assign fade times to memory 7.

Keypresses	Results/Comments
1. Create a lighting state	
2. Press **[=] [7]** to store as memory 7.	
3. Press **[TIME]** and enter 6 on the keypad.	*Time-i* is displayed in the command line. The incoming spots/channels in memory 3 will fade up in 6 seconds.
4. Press **[TIME]** and enter 8 on the keypad.	*Time-o* is displayed in the command line. The spots/channels fading to a lesser intensity, when crossfading between memory 2 and memory 3, take 8 seconds to complete their fade.
5. Press **[WAIT] [WAIT]** and enter 2 on the keypad.	*Wait-in* is displayed in the command line. The incoming spots/channels in memory 3 will wait 2 seconds before beginning their fade.
6. Press **[STORE]**	*Memory 7 Stored* is displayed.

If you have neglected to enter the time assignments before pressing [STORE]:

1. Press **[TIME]** or **[WAIT]**. The command line displays the last recorded memory. Enter the desired fade time.
2. Press **[STORE]** and record the memory with its time assignments.

Assigning fade times to an existing memory

Example 1: Assign a 10-second time-in to memory 1.

Keypresses
1. Select memory 1
2. Press **[TIME]**
3. Enter 10 on the keypad.
4. Press **[STORE]**

Assigning fade times to a range of memories

Identical fade times can be assigned to a range or a group of memories

Example: Assign a 10 second time-in to memories 1 → 6.

Keypresses

1. Select memory 1 → 6
2. Press **[TIME]**
3. Enter 10 on the keypad.
4. Press **[STORE]**

Assigning fade times to non-sequential memories

A group of non-sequential memories may also be assigned an identical fade time.

Example: Assign 10 seconds time-out to memories 2, 6, and 8.

Keypresses	**Results/Comments**
1. Select memory 2	
2. Press **[MEMORY]** and enter 6 on the keypad	The memory list is displayed and the selected memories appear on a red field.
3. Press **[MEMORY]** and enter 8 on the keypad	
4. Press **[TIME] [TIME]**	*Time-o* appears in the command line. Stage display is now on view.
5. Enter 10 on the keypad	
6. Press **[STORE]**	

Modifying time assignments

The example below shows how to modify a time-in assignment. Other time assignments use the same procedure; just press the time assignment keys the requisite number of times until the time, wait, or delay assignment appears in the command line.

Keypresses	**Results/Comments**
1. Select the memory for modification.	
2. Press **[TIME]** or **[WAIT]**	The time assignment is displayed in the command line.
3. Assign a new time value.	
4. Press **[STORE]**	The message *Memory # Stored* is displayed.

Converting Memories to an Editor Group

Memories can be converted to groups in the editor and used as building blocks for new memories.

The key sequences for converting a memory to an editor group are dictated by whether the editor is in idle or not.

Converting a memory to group while editor is in idle

Example: Convert memory 4 to a group in the editor and record a new memory.

Keypresses	Results/Comments
1. Select memory 4.	A range of memories or a group of non-sequential memories can be selected.
2. Press **[ENTER]**	The contents of memory 4 (spots and parameter values, channels and intensity/scroller assignments) are converted to group in the editor. The spots/channels are displayed in white. Notice that after pressing **[ENTER]**, *Memory 4* disappears from the command line. This assures that you are working on an editor group and not a memory.
3. Select spots for editing (optional)	You may now choose to edit the group or record it as a new memory.
4. Press **[=]** and enter 5 on the numeric keypad	
5. Press **[STORE]**	The message *Memory 5 Stored* is displayed.

Converting a memory to group when the editor is active

If the editor is active you must use a slightly different key sequence.

Parameter and intensity values from the converted memory override the values for spots/channels currently active in the editor.

Example: We want to use memory 1 as a building block to create memory 6. Spots 2 - 6 with the iris at 65% are in memory 1. Spots 2 - 6 with the iris at 50% are present in the editor and displayed in red.

Keypresses	**Results/Comments**
1. Press **[ENTER]**	The spots selected in the editor (highlighted in red) turn white indicating that they are present, but not addressable until selected again.
2. Select memory 1	
3. Press **[ENTER]**	The selected memory is converted to an editor group. Note that the original editor value for iris is retained and not overwritten by the value in the memory.
4. Press **[=]** and enter 6 on the numeric keypad.	
5. Press **[STORE]**	*Memory 6 Stored* is displayed.

Mask

Mask is a spot and channel selection function. It allows you to access memories, selecting the spots and channels that are present in a memory.

You can then assign parameter values to the group of spots and dimmer levels or frame assignments to the channels. If the spots and channels selected using Mask are active in the editor, the editor values are retained.

When the Mask contains both channels and spots, the dimmer wheel affects both types of fixtures.

When the Mask contains two types of spots, the selection follows the rules for mix editing.

One Mask or a group of Masks may be selected at the same time.

Keypresses	Results/Comments
1. Press **[MASK]**	*Mask* is displayed in the command line.
2. Enter the memory number on the keypad.	
3. Move the Dimmer wheel	The spots/channels are now displayed in red. At this point, only the dimmer parameter is active. All other parameter values are derived from the tracking.
4. Continue editing	
5. When editing is complete you can record the editor group as a memory.	

Selecting sequential memories for Mask

More than one Mask may be selected at one time.

Example: Select the spots and channels in memories 1 - 3, assign values, and store the result as new memory.

Keypresses

1. Press **[MASK] [1 → 3]**
2. Move the Dimmer wheel
3. Continue editing
4. Press **[=]** and enter a number on the keypad.
5. Press **[STORE]**

Selecting non-sequential memories

Keypresses	Results/Comments
1. Press **[MASK]** and enter a memory number on the keypad.	Repeated to select more memories.
2. Proceed as described above	

Assigning a Mask to a controller

Select channels and spots under the Mask function and assign them to a controller or playback crossfader. The assignment is understood as *grp* (group).

Keypresses	Results/Comments
1. Press **[MASK]** and select a memory number.	
2. Press **[ASSIGN]**	The message *Assign Dim/XF* appears.
3. Press **[DIM]** or **[X-F]**	Assign to selected controller. *Grp* appears on the controller display.

Using Mask for controller assignments

You can use Mask to select the spots and channels assigned to controllers or crossfaders. The controller or crossfader assignments become an active group in the editor.

Keypresses	Results/Comments
1. Press **[MASK]**	
2. Press **[ASSIGN]**	The system is waiting for you to select one of the controllers.
3. Press **[DIM]** or, **[XF]**, **[A]**, **[B]**, **[C]**, or **[D]**.	Use the dimmer wheel to assign a dimmer level to the spots and channels included in the selection.

Using Mask with Libraries

Mask can be used in conjunction with Libraries. This allows you to select the spots from the Library. The Library or library values are not assigned. For more information about Libraries see Chapter 9.

Keypresses	Results/Comments
1. Press **[MASK]**	*Mask* is in the command line.
2. Press **[POSITION]**, **[GOBO]**, or **[COLOR]**	Skip this step if the NSK mode is your selection.
3. Press an NSK	The spots are selected in the editor.

Inserting a Memory

To insert a memory, create a lighting state and record the new memory with a sub-decimal number. Nine (9) memories may be inserted between each whole number memory.

Example: Insert a memory between memories 3 and 4.

Keypresses	Results/Comments
1. Create a lighting state.	Tip: if the memory being inserted between memories 3 and 4 is an outgrowth of 3 (for instance), create your lighting state by using the sequence **[MEMORY] [3] [ENTER]** and then proceed to edit.
2. Press **[=]** or **[MEMORY]**	*Memory* appears in the command line.
3. Enter **[3 • 5]** on the keypad.	
4. Press **[STORE]**	Memory 3.5 is inserted between memories 3 and 4.

Programming a Blackout Cue

Program a Blackout cue by recording a memory when the editor is empty. This can be done in live or blind mode.

Blackout memories are identified as such on the memory list and selected memory exams. When viewing the memory list, *Blackout* appears in the text column of the memory list. When viewing a selected memory, the message *This Memory is a Blackout* is displayed in red.

Example: Record memory 8.5 as a blackout.

Keypresses	Results/Comments
1. Press **[RESET]**	All spots and channels are cleared from the editor.
2. Press **[=]** and enter **[8 • 5]** on the keypad	
3. Press **[STORE]**	

Programming in Blind Mode

Working in Blind mode does not disrupt the output from any playback source or the live editor.

The Sabre contains 2 editors: the live editor and the Blind editor.

When switching to Blind mode the channels and spots present in the Live editor are captured and displayed in Blind mode. When doing Blind editing, any modification done to the channels and spots that were transferred from the live editor does not affect the live editor.

If the channels and spots captured from the Live editor are not required in the Blind editor reset the Blind editor by pressing **[RESET]** while in Blind mode. This will not affect the live stage output, as it clears the Blind editor only and not the Live editor.

Example: Program memory 7 with spots 2 – 8 in Blind mode.

Keypresses	**Results/Comments**
1. Press **[BLIND]**	*Blind*, on a red field, is displayed in the top center of the screen.
2. Select spots 2 → 8	
3. Assign parameter values	
4. Press **[=]** and enter 7 on the keypad.	
5. Press **[STORE]**	
6. Press **[BLIND]**	The display reverts to the Stage display. The blind editor is not cleared.

Clearing the blind editor

Exiting Blind mode does not reset the Blind editor. Channels and spots that were selected subsequent to entering Blind mode remain in the Blind editor until it is reset.

Keypresses	**Results/Comments**
1. Before exiting Blind mode, press **[RESET]**	The channels and spots in the Blind editor are released.
2. Press **[BLIND]**	Any channels and spots present in the Live editor prior to entering Blind mode are still in the Live editor.

Memory Operations in the Editor

Memories can be copied, renamed, and deleted in either the editor or in the Memory Operations menu.

Renaming and exchanging memories

Example: Rename memory 5 as memory 10. At present there is no memory 10.

Keypresses	Results/Comments
1. Select memory 5.	
2. Press **[=]** and enter 10 on the keypad.	
3. Press **[STORE]**	The message *Memory 10 Stored* is displayed. The contents of memory 5 have been renamed as memory 10. Memory 5 no longer appears in the memory list.

Copying memories

You can copy the contents of a memory to a new memory. You cannot overwrite existing memories when copying memories in the Memory Operations menu

This does not copy fade time assignments or Auto Assignments. To copy a memory including any time assignments and Auto Assignments, perform the copy function in the Memory Operations menu.

Example: Copy memory 2 to memory 8. Memory 8 is a new memory.

Keypresses	Results/Comments
1. Select memory 2.	Select the memory that you are planning to copy.
2. Press **[ENTER]**	The channels and spots with their intensity/parameter values appear as an editor group.
3. Press **[=]** and enter 8 on the keypad.	
4. Press **[STORE**	Only the contents of the memory (channels, intensity assignments, scroller values, spots and their parameter values) are copied.

Erasing memories

Single memories, non-sequential groups of memories, and a range of memories can be deleted The system always asks for confirmation when deleting memories. .

Erasing a single memory

Keypresses	Results/Comments
1. Select the memory that you want to delete.	
2. Press **[ERASE]**	The message *Are You Sure?* is displayed.
3. Press **[ERASE]**	The erase command is executed.

Erasing a group of non-sequential memories

Keypresses	Results/Comments
1. Select the memory that you want to delete.	
2. Select another memory.	The memory list is displayed. The selected memories appear on a red field. Repeat this step as many times as needed.
3. Press **[ERASE]**	The message *Are You Sure?* is displayed.
4. Press **[ERASE]**	The erase command is executed.

Erasing a range of sequential memories

Keypresses	Results/Comments
1. Select a range of memories.	
2. Press **[ERASE]**	The message *Are You Sure?* is displayed.
3. Press **[ERASE]**	The erase command is confirmed. The memories do not appear in the memory sheet any longer.

Memory Operations menu

The Rename, Copy, Exchange, and Delete memories are functions that may be carried out in the Memory Operations menu as well as in the editor. The Memory Operations menu is, menu number 3. The behavior of these functions, in the editor and in the Memory Operations menu, is essentially the same.

The memory list is displayed in this menu, so all the necessary information for carrying out these different functions is available on screen.

Renaming memories

Renaming a memory transfers all the information, including all channel, scroller, spot, parameter, time, part assignments, and Auto Assignments. Individual memories or a range of memories can be renamed.

Example: Rename the range of memories 1 - 10 as memories 101 - 110.

Keypresses	Results/Comments
1. **F1 Rename Memory**	The prompt *Rename memory #* appears.
2. Enter the first memory of the range on the keypad, in this example, memory 1.	
3. Press **F2 Thru Memory**	Choose this option to rename a range of memories.
4. In response to the prompt, enter the last memory of the range, in this example, memory 10.	
5. Press **F1 As Memory #**	The prompt *As Memory #* appears.
6. Enter the first number of the new range. , in this example, memory 101.	
7. Press **F1 Store**	The system asks for confirmation of the store command with the prompt *Are You Sure?*
8. Press **F1 Yes**	Confirm the command and store memories 1 - 10 as memories 101 --110. A window opens at the bottom of the screen, showing the results of the rename function. Renaming or copying a memory clears link assignments.

Copying a memory

This function copies the selected memory to a new memory number or overwrites an existing memory. The new memory is a replica of the original memory.

Copy single memories or a range of memories. If you want to copy memory 1 to memory 100, 2 to 101, and 3 to 102, it is necessary to enter only memory 100 when answering the prompt for the new memory number. The system automatically copies the range of memories in sequential order. If you copy a range of memories that includes sub-decimal

memories the new memories retain the sub-decimal format. Example: copying the range of memories 2, 3, 3.5, 4, and 6 to memory 10, results in memories 10, 11, 11.5, 12, and 13.

Keypresses	Results/Comments
1. Press **F2 Copy Mem**	*Copy Mem #* prompt appears.
2. Enter the memory number on the numeric keypad.	
3. Press **F1 To Mem #**	You are prompted to enter the new memory number.
4. Press **F1 Store**	The prompt *Are You Sure?* appears. Check that you have entered the information correctly.
5. Press **F1 Yes**	Confirm the command. A window opens at the bottom of the screen, showing the results of the copy function.

Deleting memories

Delete single memories or a range of memories.

Keypresses	Results/Comments
1. Press **F3 Delete**	Select the delete function. The system prompts you for the memory number.
2. Enter the number on the numeric keypad.	
3. Press **F1 Store**	The system asks for confirmation.
4. Press **F1 Yes**	The selected memory is deleted.

Clear console

This function clears the memory of the console and is available only in the Memory Operations menu.

ALL UNRECORDED DATA IS LOST.

If you have unrecorded data that you wish to preserve, make sure to record it to a diskette or the hard disk before employing this function.

Keypresses	Results/Comments
1. Press **F4 Clear Console**	A red warning is displayed: *Make sure your play is recorded on disk!!! Continue?*
2. Press **F1 Yes**	Clears all the memory in the console.

Remain Dim

While programming memories you can select channels or spots to remain on, while blacking out the rest of the editor output.

Example: Spots 1 - 8 are active in the editor. You want to see spot 8 only.

Keypresses	Results/Comments
1. Select spot 8.	
2. Press **[REM DIM]**	The dimmer output of spots 1 - 7 are blacked out. The flag *REM DIM* is displayed at the top of the screen on a red filed.
3. To cancel the blackout, Press **[REM DIM]** again.	The dimmer output of spots 1 - 7 is active. The *REM DIM* flag disappears.

CHAPTER 8
MEMORY MODIFICATION

This chapter includes:

Basic Memory Modification

Keypresses	Results/Comments
1. Press **[MEMORY] and** select a memory number on the numeric keypad.	
2. Press **[SPOT]** or **[CHANNEL]**	The memory is now live on stage and displayed in white in the editor. Notice that the command line reads: *Memory # Spot* or *Channel*.
3. Select spots or channels and assign dimmer or parameter values.	
4. Press **[STORE]**	The message *Memory # Stored* is displayed. The spots or channels remain in the editor until cleared.

Warning! If the memory that you are attempting to store is assigned to a playback device, the message: *Memory On Board* is displayed. Press **[STORE]** again to overwrite the memory. The editor clears.

➢Note

You can go directly to memory modification from memory exam. .

Keypresses	Results/Comments
1. Select a memory	
2. Press **[EXAM]**	The contents of the memory are displayed.
3. Press **[CHANNEL]** or **[SPOT]**	The channels/spots are displayed in blue.
4. Continue from step 3 in the previous example.	

STORE STORE

Sabre is capable of quickly modifying an entire lighting picture using the STORE STORE function. Live editing using STORE STORE modifies memories or groups assigned to the A/B crossfader, the C/D crossfader, controllers, and Q keys. The STORE STORE operation also has options for updating libraries or creating a Delta.

Editing memories live on-stage

Keypresses	Results/Comments
1. Assign a memory to A.	
2. Select spots or channels.	
3. Assign values.	
4. Press **[STORE]**	The STORE STORE window opens, showing the playback sources affected by the Store.
5. Press **[STORE]** again.	

There are few rules by which the STORE STORE modification function operates:

- Modification to channels in more than 1 of the active assignments are stored to the assignment with the highest control priority only.
- If the spot in the editor is not in any of the active assignments, it is stored to A/B. If there is no assignment on A/B it is stored to C/D. If there is no assignment on C/D, the store occurs to the playback device with the highest control priority.
- Channel modifications are stored where the selected channel/s are already present, regardless of control priority. Channels that are not in any of the active assignments are stored to A/B. If there is no assignment on A/B it is stored to C/D. If there is no assignment on C/D, the store occurs to the playback device with the highest control priority.

Example: Memories are assigned according to the table below. The editor contains spots 3, 5, 16. When you press **[STORE]** the STORE STORE window opens and all of the assignments appear in red, which means that those assignments will be updated. The table below shows what is stored to which memories.

Mem	Spots in memory	Assignment	Control Priority	Editor stored to	Why
1	1, 3, 5	A		spot 16	"New" spots and channels are stored to A/B.
50	5, 10	C		spot 5	Contains spot 5 and is a higher control priority than A.
12	3	Controller 8	highest	spot 3	

Table 1 - STORE STORE

Delta

A Delta stores the absolute or relative modifications of spot parameter values, channel intensity, and scroller frames for further use in modifying memories. The Delta Tracking function facilitates memory modifications that track through entire sections of a show or modifications executed over a range of memories. This function is extremely versatile, as there are a number of ways to create and apply Delta memory modification.

A Delta can be created via memory modification or independent of memory modification.

A Delta created via memory modification can be used to track the modification through the memories.

A Delta created independently of memory modification or via the STORE STORE function method can be used to modify single memories or a range of memories. It cannot be used in the Delta Tracking mode.

The word *Delta* displayed in red in the lower right section of the command line signals an existing a Delta. The system can contain 1 Delta. If there is no current Delta the first memory modification creates a Delta.

Creating a delta via memory modification

A Delta created through memory modification appears as both relative and absolute. Both the absolute and the relative values can be used when applying Delta for memory modification.

When examining a Delta created using memory modification, the source memory of the Delta is displayed at the top of the screen. If subsequent modifications are made to the source memory of the current Delta, they are added to the Delta.

A Delta created via memory modification can be used to track modifications in the Delta Tracking mode.

Example: Memory 20 contains spot 1 with color wheel at 2, which will be modified by setting spot 1 to color wheel value 4 and adding a new spot (a spot not appearing in the memory) at 30% dimmer intensity.

Keypresses	Results/Comments
1. Select memory 20	
2. Select spot 1	The spots in memory 20 appear in white on the spot display.
3. Assign a value of 4 to the color wheel.	
4. Select spot 2.	
5. Press **[DIM]** and assign 30% intensity	
6. Press **[DELTA]**	If Delta is in the system a window opens giving you the option of overwriting the current Delta or canceling.
7. Press **[STORE]**	The modification to memory 20 and the Delta are stored.

Creating a delta independent of memory modification

You can create a Delta independent of memory modification. This is done via the editor. Only an 'absolute' Delta results from using this method.

Example: Create a Delta for spot 1 parameter values.

Keypresses	Results/Comments
1. Select **SPOT 1**	A range or a group of spots can be selected.
2. Assign parameter values.	
3. Press **=**	
4. Press **DELTA**	If a Delta is present, the message *Delta Exists* is displayed. Press **[STORE]** to confirm or **[CLEAR]** to cancel.
5. Press **STORE**	The message *Delta Abs. Stored*.

Creating a delta with STORE STORE

Storing modifications to a memory resident on a playback fader or controller opens the STORE STORE window. The STORE STORE window shows the location of the memories affected by the modification and offers the option of updating libraries or creating a Delta.

Keypresses	Results/Comments
1. Select spots or channels and assign values.	
2. Press **[STORE]**	The STORE STORE window opens.
3. Press **[F5 DELTA]**	If a Delta is exists, a red warning window opens. If you do not want to replace the current Delta, press **[CLEAR]** to cancel.
4. Press **[STORE]**	

Including Libraries in delta

A Delta for library assignments may be created and then used to assign libraries in memories. The example below shows how to create a Delta, independent of memory modification, with position library 1.

Keypresses	Results/Comments
1. Select spots	The selected spots must, of course, be part of the library that will be assigned.
2. Select a library	
3. Press **[=]**	
4. Press **[DELTA]**	Select for Delta recording.
5. Press **[STORE]**	When applied to a memory, the library is assigned to the selected spots. Note - if there is a Delta present in the system you must press **[STORE]** again**.**

Examining a delta

To examine a Delta, press **[DELTA]**.

Press **[DELTA]** again to toggle the display between the absolute Delta page and the relative Delta page. There is a relative Delta only if the Delta was created via memory modification.

If the Delta contains libraries, pressing **[DELTA]** toggles between the library number and the actual values.

The F key options displayed at the bottom of the screen are used when applying a Delta for memory modification.

Exit the Delta exam by pressing **[CLEAR]**.

Function keys for delta application

F1 **RELATIVE**	Relative Delta modifies values according to the relative amount of change in the source memory. Relative Delta exists only when the Delta was created via memory modification. Choosing this option when applying a Delta modifies the parameter values of a spot or channel already present in the target memory relatively to its present value. A relative Delta value that is greater than the original value is displayed in yellow. A relative Delta value that is less than the original value is displayed in green. Example: the relative Delta is spot 2 zoom - 50. Applying this to a memory where the spot 2 is set at zoom 80 results in the zoom parameter having a value of 30.
F2 **RELATIVE** **+ NEW**	This selection modifies spot parameters and channel intensities in the target memories, using the value of the relative Delta and adds new spot information to the selected memories. “New” refers to spots or channels that are not present in the memory being modified. "New" spots’ values can only be absolute.
F3 **ABSOLUTE**	This option modifies spots according to the absolute Delta value. Choosing this option applies only to spots already present in the target memories.
F4 **ABSOLUTE** **+ NEW**	This modifies memories by changing the parameters of spots already existing in the target memory and adding spots that are new to the target memory.
F6 **TEST**	View the memory live on-stage with the Delta modifications. This is only a preview and does not store the memory with the Delta modifications. Return to editor by pressing this key again.

Applying delta for memory modification

A Delta can be used to modify a memory, a range of memories, or track through all of the memories. The F keys selection determines how the Delta is applied to the memories (see above).

Keypresses	Results/Comments
1. Select a memory.	A range of sequential memories or a group of non-sequential memories may be selected.
2. Press **[DELTA]**	The Delta exam is displayed.
3. Select the appropriate F key	Select the type of a Delta: absolute, absolute + new, relative, or relative + new. (see above)
4. Press **[STORE]**	When the memory modifications are complete, the message *# → # Delta* is displayed. The memory range displayed is the first and last memories that were selected for Delta modification.

Automatic delta tracking

Automatic Delta tracking is only applicable when the Delta was created via memory modification.

When a Delta has been created through memory modification, the number of the modified (source) memory appears at the top of the screen in the Delta exam.

Use the Delta Tracking mode to modify a specific range of memories or an unspecified range of memories. The modification tracks through until the parameter of the spot or the intensity of the channel being modified changes in a target memory.

Example: Memories 1 - 10 have the same dimmer value. The dimmer value changes in memory 11. Memories 1 - 20 have the same color wheel value. The color wheel value changes in memory 21. Memories 1 - 30 have the same gobo value. The gobo value changes in memory 31. Modify the dimmer, color, and gobo values in memory 1, using basic memory modification - **[MEMORY 1] [SPOT #] modify [STORE]**. The modification has created a Delta that can be used in tracking mode. If you apply the Delta (see the sequence below), the result is that the new dimmer value is applied to memories 2 - 10. The new color wheel value is applied to memories 2 - 20. The new gobo value is applied to memories 2 - 30.

Attempting to use the Delta tracking mode when the Delta was not created through memory modification results in the message: *Incorrect Delta Mode*.

If a starting memory is not specified, as in the following key sequence, Delta tracking begins from the source memory of the Delta.

Applying delta tracking from the source memory

Keypresses	Results/Comments
1. Press **[MEMORY]**	Delta tracking begins from the memory in which a Delta was created. If you select a memory number, at this point, the Delta tracking begins from the memory you have selected.
2. Press **[→]**	Denotes an unspecified memory range. Tracking is applied from the source memory to the last memory.
3. Press **[DELTA]**	*Track* appears in the command line.
4. Press **[STORE]**	Sabre begins tracking through all memories, applying the changes as determined by the Delta. If there are a lot of memories to track through, a *Wait* message may be displayed. When the Delta tracking modification is complete, the range of memories modified is displayed.

Applying delta tracking beginning from a selected memory

Example: The Delta was created when modifying memory 1. You want to apply the Delta tracking starting from memory 30.

Keypresses	Results/Comments
1. Select memory 30	Delta tracking will begin from memory 30.
2. Press **[→]**	
3. Press **[DELTA]**	*Track* appears in the command line.
4. Press **[STORE]**	Sabre begins tracking through all memories, applying the changes as determined by the Delta. If there are a lot of memories to track through, a *WAIT* message may be displayed. When the Delta tracking modification is complete, the range of memories modified is displayed.

An example of applying Delta tracking:

The following modification is made to memory 20 and stored as a Delta.

Spot 1	cw	6
Spot 2 (“new spot”)	gobo	6
Spot 5	dimmer	45%

Apply the **absolute + new** delta option. This means that the absolute values in the Delta modify the values in the target memories. Spots contained in the Delta, (in this case, spot 2) that are not present in the target memories are added to the memories.

Note that if you do not choose the **+ new** option spot 2 will not be added to memories where it does not already appear.

original data				**after delta tracking**			
memory	**spot**	**parameter**	**value**	**memory**	**spot**	**param**	**value**
memory 20	spot 1	color wheel	2				
	spot 3	gobo	6				
	spot 5	dimmer	FL				
memory 21	spot 1	color wheel	2	memory 21	spot 1	color wheel	6
	spot 2	gobo	3		spot 2	gobo	6
	spot 3	gobo	1		spot 3	gobo	1
	spot 5	dimmer	FL		spot 5	dimmer	45%
memory 23	spot 1	color wheel	2	memory 23	spot 1	color wheel	6
					spot 2	gobo	6
	spot 3	gobo	1		spot 3	gobo	1
	spot 5	dimmer	50%		spot 5	dimmer	50%
memory 24	spot 1	color wheel	1	memory 24	spot 1	color wheel	1
					spot 2	gobo	6
	spot 3	gobo	6		spot 3	gobo	1
	spot 5	dimmer	FL		spot 5	dimmer	FL
memory 25	spot 1	color wheel	4	memory 25	spot 1	color wheel	4
	spot 2	gobo	3		spot 2	gobo	6

Table 2- delta tracking

Erasing a delta

You may want to erase an existing Delta in order to create a new Delta.

Keypresses	Results/Comments
1. Press **[DELTA]**	
2. Press **[ERASE]**	The red Delta flag in the command line is no longer displayed.

Releasing Channels, Spots, Scrollers

Use the following sequence to release channels and scrollers from 1 memory. If you want to release channels and scrollers from a range of memories use the Memory Range Modification functions.

Using the sequence below spots can be released from 1 memory or a range of memories.

Releasing spots

Keypresses

1. Select a single memory, a group of memories, or a range of memories.
2. Select the spot you want to release.
3. Press **[RELEASE]**

Releasing channels

Keypresses

1. Select a memory.
2. Select the channel you want to release.
3. Press **[ZERO]**
   Use the dimmer wheel and wheel down to 0%
   Press **[RELEASE]**

Releasing scrollers

Keypresses

1. Select a memory.
2. Select the scroller channel.
3. Press **[FRAME]**
4. Press **[RELEASE]**

Releasing channels from a range of memories

You can release 1 channel, a range of sequential channels, or a group of channels at the same time.

Example: Release channel 5 from memories 1 – 6.

Keypresses	Results/Comments
1. Press **[MEMORY] [1 → 5]**	
2. Select channel 5	
3. Press **[RELEASE]**	
4. Press **[STORE]**	Channel 5 is released from the selected memories.

Releasing scrollers from a range of memories

You can release 1 scroller channel, a range or a group of scroller channels at the same time.

The scroller frame value is released from the selected memories. Dimmer values for the selected channels are not released.

Example: Release scroller channel 5 from memories 1 – 6.

Keypresses	Results/Comments
1. Press **[MEMORY] [1 → 5]**	
2. Select channel 5	
3. Press **[FRAME]**	
4. Press **[RELEASE]**	
5. Press **[STORE]**	Scroller channel 5 is released from the selected memories.

CHAPTER 9
LIBRARIES

This chapter includes:

Overview

Libraries are a programmable database of preset color, gobo, and position assignments. After you have programmed your Libraries, you then use them to program memories. Using Libraries contributes greatly to editing speed, allowing you to quickly assign the same gobo or color to the selected spots. Updating a Library globally updates memories programmed using that Library.

There are 3 different library categories: Position, Color, and Gobo. Each category may contain up to 99 libraries.

Any number of spots can be included in the library. Libraries are spot specific. In other words, you cannot use a Library assignment for spot 1 to edit spot 2. It is expedient to program a Library including all of the spots that you think will be used in a certain position. When using the Libraries to program memories, you can apply the Library to the selected spots only.

Example: You have programmed a Position Library using spots hung upstage, stage right, and stage left. The stage picture that you are building only requires the upstage spots from the position library. You select the spots and assign the required Library.

The Numeric Soft Keys or the numeric keypad are used when programming and retrieving libraries. When the current NSK default mode or temporary mode is one of the Library categories, The NSK LEDs that are on indicate that a library is present.

Key	What it Does
[POSITION]	Change NSK mode to Position library for storing or selecting. Position libraries 1 - 99 are stored and retrieved using the NSKs. Position libraries include x, y, p1, p5, and p10.
[COLOR]	Change NSK mode to Color library for storing or selecting. Color libraries 1 - 99 are stored and retrieved using the NSKs. Color libraries include p2, p3, p4, and p14.
[GOBO]	Change NSK mode to Gobo library for storing or selecting. Gobo libraries 1 - 99 are stored and retrieved using the NSKs. Gobo libraries include p6, p7, p13, and p15.
[ASSIGN]	Store Libraries using the NSKs in one of the Library modes.

➢Note

You can exclude parameters from libraries in the Mix Output menu/Define Device (see Chapter 27 Mix Output menu).

Programming a Library

You can use the NSKs or the editor keypad.

Example: Program Position library 6.

Keypresses	**Results/Comments**
1. Select spots	Enter the spot number/s you want to include in the library.
2. Position the beam.	Use the trackball, wheels, or the numeric keypad to assign the x/y values. Repeat the procedure for as many spots as desired.
3. Press **[ASSIGN]**	
4. Press **[POSITION]**	Skip this step if the NSK mode is Position.
5. Press NSK 06	The group in the editor is now named position library 6. *Position 6* appears in the command line. The LED on the selected NSK lights. *Library P-06 Stored* is displayed.

Or

Keypresses	**Results/Comments**
1. Select spots	Enter the spot number/s you want to include in the library.
2. Position the beam.	Use the trackball, wheels, or the numeric keypad to assign the x/y values. Repeat the procedure for as many spots as desired.
3. Press **[=]**	
4. Press **[POSITION]**	
5. Enter a number on the keypad.	The group in the editor is now named position library 6. *Pos #* appears in the command line. . The LED on the selected NSK lights. *Library # Stored* is displayed.

Program Color or Gobo libraries using the same procedure. Instead of pressing **[POSITION]**, select **[GOBO]** or **[COLOR]**.

Overwriting a Library

If a library exits the warning *Library Exists* is displayed. You can overwrite the library.

Keypresses	**Results/Comments**
Press the same NSK again to update the library.	The message *Library # Stored* is displayed.

If you do not want to overwrite the library you can store to a different library number:

Keypresses	Results/Comments
Press a different NSK	The message *Library # Stored* is displayed.

Storing more than 1 Library

Keypresses	Results/Comments
1. Select spots	
2. Assign parameter values	
3. Press **[ASSIGN]**	
4. Press **[POSITION]**	Skip this step if the NSK mode is Position,
5. Press an NSK	The LED on the selected NSK lights. *Library P-# Stored* is displayed.
6. Press **[ASSIGN]**	
7. Press **[GOBO]**	
8. Press an NSK	The LED on the selected NSK lights. *Library G -# Stored* is displayed.
9.	
10. Press **[ASSIGN]**	
11. Press **[COLOR]**	
12. Press an NSK	The LED on the selected NSK lights. *Library c-# Stored* is displayed.

Programming a Library using a memory

After programming some memories you might decided that you want to record the position, color look, or gobo look as a library.

Example: Record the color look in memory 12 as Color library 35.

Keypresses	Results/Comments
1. Select memory 12.	
2. Press **[ASSIGN]**	
3. Press **[COLOR]**	Skip this step if the NSK mode is Color.
4. Press NSK **[35]**	Color Library 35 has taken its parameter values from memory 12.

Text for Libraries

Add text to libraries for easy identification. The first 8 characters of the text is displayed on the NSK display and the entire text appears in the library list (see library list , page 9-5).

Storing a new Library with text

You can attach a text label when programming a new Library.

Example: Include text when storing Position library 6.

Keypresses	Results/Comments
1. Select spots	
2. Assign parameter values	
3. Press **[ASSIGN]**	
4. Press **[POSITION]**	Skip this step if the NSK mode is Position.
5. Press NSK **[06]**	
6. Press **[TEXT]**	The message *Library # Stored* is displayed.
7. Type on the keyboard.	
8. Press **[STORE]**	The text appears next to the library number in the library list display.

Adding text to an existing Library

Example: Add text to Position library 6.

Keypresses	Results/Comments
1. Press **[POSITION]**	Skip this step if the NSK mode is Position.
2. Press NSK 06	
3. Press **[TEXT]**	
4. Type on the keyboard.	
5. Press **[STORE]**	The text appears in the Library list and the NSK display in Position mode.

Examining Libraries

You can examine the contents of each library or view a library list for each library category. Library List is a “strong” exam. Since no keypress bumps out this exam you can keep it on view while you continue editing.

If the library list is more than 1 page, use the **[UP 1]** or **[UP 2]** keys to page the exam.

To close this display and return to the Stage display press:
[STAGE] if the exam display is on monitor 1.
[TOPO] if the exam display is on monitor 2.
[SHIFT] [STAGE] if the exam display is on monitor 3.

Viewing the Library list

Keypresses	Results/Comments
1. Press **[GOBO]**, **[COLOR]**, or **[POSITION]**	
2. Press **[EXAM 1]** or **[EXAM 2]** or **[EXAM 3]**.	A list of Libraries in the selected category is displayed.

Examining a selected Library

This is a "weak display"; any keypress (except those used to view next and previous libraries) bumps the display back to the Stage display.

Keypresses	Results/Comments
1. Press **[GOBO]**, **[COLOR]**, or **[POSITION]**	Skip this step if the NSK mode is the Library category that you want.
2. Press an NSK	
3. Press **[EXAM 1]** or **[EXAM 2]** or **[EXAM 3]**.	The spots contained in the selected Libraries and their parameter values are displayed.
4. Press **[+]** or **[-]** to view the next or previous Library or press another NSK.	

Library tracking

A track sheet of Library assignments is available.

If there are more than 24 spots in the Library, press **[→]** to view the next page of the Tracking Sheet.

Keypresses	Results/Comments
1. Press **[TRACK LIB]**	
2. Press **[GOBO]**, **[COLOR]**, or **[POSITION]**	Skip this step if the NSK mode is the library category that you want.
3. Press an NSK.	

Editing Libraries

There are two methods to update libraries. The entire library can be called into the editor and its contents modified.

Libraries can also be updated during the STORE STORE function. (See Chapter 9 Modifying Memories)

When moving your show from venue to venue, libraries can be updated using the Change Venue function. See Chapter 22 Leader for details.

In the examples below, Gobo library 6 is updated.

Updating a Library

Example: Update Gobo library 6.

Keypresses	Results/Comments
1. Press **[GOBO]**	Skip this step if the NSK mode is Gobo
2. Press NSK 06	
3. Press **[SPOT]**	All the spots in the library appear in the editor.
4. Modify the parameters in this library.	
5. Press **[STORE]**	The message *Library # Stored* is displayed.

Adding spots to a Library

Example: Add spots to Gobo library 6.

Keypresses	Results/Comments
1. Select spots.	A group or a range of spots may be selected.
2. Modify the gobo parameters.	
3. Press **[ASSIGN]**	
4. Press NSK 06	
5. Press **[STORE]**	Updates the information in the library with the editor contents. If the modified spot/s are already present in the library, the message *Library # Exists. Update?*
6. Press **[STORE]**	The message *Library # Stored* is displayed.

Removing spots from a Library

Example: Remove spot 3 from position library 6.

Keypresses	Results/Comments
1. Press **[POSITION]**	Skip this step if the NSK mode is Position.
2. Press NSK 06	The library number appears in the command line.
3. Select spot 3	All of the spots in the library enter the editor. More than one spot can be selected.
4. Press **[RELEASE]**	Spot 3 is released from the editor.
5. Press **[STORE]**	The message *Library # Stored* is displayed.

Updating a library via the STORE STORE function

After pressing **[STORE]**, a window opens in the middle of the screen showing which potentiometers are affected by confirming the store. At the bottom of this window the F key options are displayed. Among these options are library updates may appear, if the spot that you have modified has a library assignment.

Example: Memory 2 is on A, the active crossfader. The memory contains spots 3 - 6 with position library 3. You modify the position of spots 3 - 6.

Keypresses	Results/Comments
1. Select spots 3 - 6.	
2. Modify their position.	
3. Press **[STORE]**	The STORE STORE window is displayed.
4. Press **[F2 POS]**	
5. Press **[STORE]**	The modifications are stored to memory 2 and position library 3 is updated.

Erasing a Library

Position, Color, and Gobo libraries are all erased using the same procedure. Use the NSKs or the keypad.

Example: Erase Gobo library 09.

Keypresses	Results/Comments
1. Press **[FREE]**	Skip this step if the NSK default mode is Gobo.
2. Press **[GOBO]**	Skip this step if NSK mode is Gobo.
3. Press NSK 09	The system asks: *Are You Sure?*
4. Press NSK 09 again	Confirm the command. The message: *Library G-09 Erased* is displayed.

Or

Keypresses	Results/Comments
1. Press **[GOBO]**	Skip this step if the NSK default mode is Gobo.
2. Press NSK 09	Select the library for deletion.
3. Press **[ERASE]**	The system asks: *Are You Sure?*
4. Press **[ERASE]**	Confirm the command. The message: *Library G-09 Erased* is displayed.

Programming Memories with Libraries

Using Libraries to program memories facilitates editing.

Use of Position libraries is particularly important since updating Libraries globally updates the memories programmed with Libraries.

If your show moves to a new venue, updating your position libraries ensures that the positions in memories will be on the mark.

Example: Gobo library 1 consists of spots 1 - 24 and Gobo library 2 consists of spots 15 - 18. In the example below, memory 2 will include Gobo library 1 for spots 1, 13, and 20 and Gobo library 2 for spots 16 - 17.

Keypresses	Results/Comments
1. Select spots 16 and 17.	
2. Press **[GOBO]**	Skip this step if the NSK mode is Gobo. The NSK LEDs On signal existing libraries.
3. Press NSK **[02]**.	The Library number, displayed on a light red field, appears as the parameter value.
4. Select spots 1, 13, and 20.	
5. Press **[GOBO]**	Skip this step if the NSK mode is Gobo.
6. Press NSK **[01]**	
7. Press **[=]** enter a number on the keypad – in this example 2.	
8. Press **[STORE]**	*Memory 2* Stored is displayed.

Using Libraries for spot selection

You can use Libraries for quick spot selection and Library assignment.

Example: Select the spots in Gobo Library 6 and assign the Library

Keypresses	Results/Comments
1. Press **[SPOT]**	
2. Press **[GOBO]**	Skip this step if the NSK default mode is Gobo.
3. Press NSK **[06]**	The spots from Gobo Library 6 are selected and the Library is assigned.

Copying from a Library

Example: Copy a value from Gobo library 9.

Keypresses	Results/Comments
1. Select spots.	Select the spot number to which you will be copying the parameters.
2. Select parameters (optional)	If you do not select specific parameters the values of all of the parameters are copied.
3. Press **[COPY]**	Select the copy function. *Copy from* appears in the command line.
4. Select the library.	
5. Select the spot being copied.	
6. Press **[ENTER]**	The values are copied to the selected spot.

Chapter 10
LOOPS & LINKS

This chapter includes:

Loops

- Programming an automatic continuous Loop
- Programming a manual continuous Loop
- Programming a finite Loop
- Programming an autofollow Loop
- Programming a follow-on cue
- Exiting a continuous automatic or manual Loop
- Erasing a Loop assignment
- Erasing an auto follow Loop assignment

Links

- Programming a Link between two memories
- Programming a Link among a group of memories
- Erasing a Link assignment
- Viewing Links

Loops

The Loop function strings together a series of numerically sequential memories. Loops can include any number of memories.

Loops are played back on the A/B fader, C/D fader, and are used as chasers.

Loop information is displayed in the memory sheet, the playback area of the stage exam, and the x-fade exam display. Entire Q Lists can be assigned Loops, as well as supporting Loops within the Q List.

Type of Loop	What it does
Automatic continuous	The Loop runs an infinite number of times. The crossfades from memory to memory are automatic.
Manual continuous	The Loop runs an infinite number of times, but each memory waits for a go command.
Finite	The Loop is programmed to run a specified number of times.
Auto follow	A second Loop is linked to the preceding finite Loop.
A single Loop	A single Loop between memories creates a follow-on cue.

Programming an automatic continuous Loop

An Automatic Continuous Loop runs continuously on its playback fader assignment until it is stopped or cleared or a crossfade to a memory not contained in the Loop is initiated.

Example: Program a Loop from memories 12 - 16

Keypresses	Results/Comments
1. Select memory 12	The Loop begins with the crossfade to memory 12.
2. Press **[→]**	
3. Enter 16 on the keypad	All of the memories between 12 and 16 are included in the Loop.
4. Press **[LOOP]**	The memory range and Loop appear in the command line.
5. Press **[STORE]**	A dash (—) is displayed in the Memory List, denoting an automatic continuous Loop. If the memory already has a Loop assignment, the message *Loop Exists* appears. To override, press **[STORE]** once more.

Programming a manual continuous Loop

A manual continuous Loop advances from memory to memory, by a manual Go command for each memory within the Loop. When the last memory of Loop is reached, the next Go command crossfades to the first memory of the Loop. This is similar to stepping through a sequence of memories assigned to a chaser.

Keypresses	**Results/Comments**
1. Select the range of memories	
2. Press **[LOOP]**	
3. Press **[LOOP]**	In the command line, an asterisk (*) appears next to *Loop*, denoting a continuous manual Loop.
4. Press **[STORE]**	An asterisk (*) is displayed in the Memory List after the initial memory of the Loop.

Programming a finite Loop

Finite Loops run the proscribed number of times and then stop. When a finite Loop running on A/B or C/D completes its run, the next Go command crossfades to the memory following the Loop sequence.

Up to 250 Loops are allowed.

Example: Assign a Loop to run 5 times and then stop.

Keypresses	**Results/Comments**
1. Select a range of memories	
2. Press **[LOOP]**	
3. Select 5	
4. Press **[STORE]**	The number of Loops is displayed in the Memory List.

Programming an autofollow Loop

An autofollow Loop is an additional Loop linked to a finite Loop. The second Loop, the autofollow Loop, begins its Loop upon completion of the finite Loop. The second Loop in the autofollow Loop sequence can be any type of Loop.

Example: Memories 1 through 5 loop 6 times. Upon the completion of the final Loop, you want memories 6 through 10 to immediately begin a Loop.

Keypresses	Results/Comments
1. Create a Loop for memory 6 - 10	This can be any type of Loop.
2. Select memories 1 → 5	
3. Press **[LOOP]**	
4. Select 6	Assign 6 repeats.
5. Press **[+]**	The command line reads *auto loop*, displayed in red.
6. Press **[STORE]**	The icon >> >> appears in the Memory List, denoting an autofollow Loop. After memories 1 through 5 complete their final Loop, memories 6 through 10 will begin their Loop without any action on part of the board operator.

Programming a follow-on cue

Utilize the Loop function to program a follow-on cue.

Example: Memory 12 is a follow-on to memory 11.

Keypresses	Results/Comments
1. Select memory 11	Select the first memory.
2. Press **[→]** and enter 12	Memory 12 will be the follow on cue.
3. Press **[LOOP]**	
4. Select 1	
5. Press **[STORE]**	Pressing **[GO]** crossfades to memory 11. Upon completion of the fade, the crossfade to memory 12 begins automatically. When memory 12 completes its fade the Loop sequence is complete.

You can also program a follow-on cue by simply giving the follow-on memory a Delay time. Any memory with a Delay time is recognized as a follow-on cue.

Exiting a automatic or manual continuous Loop

Keypresses	Results/Comments
1. Press **[GO]**	An immediate crossfade to the memory following the Loop is initiated. The crossfade occurs in the recorded memory time.

Erasing a Loop assignment

Keypresses	Results/Comments
1. Select the first memory of the Loop	
2. Press **[LOOP]**	
3. Press **[ERASE]**	Cancels the Loop assignment. The message *Memory # Stored* is displayed. If the Loop is assigned, the message *Memory On Board* is displayed; press **[ERASE]** again to confirm the command.

Erasing an auto follow Loop assignment

This erases the autofollow Loop only, leaving the basic Loop assignment intact.

Keypresses	Results/Comments
1. Select the first memory of the autofollow Loop assignment.	
2. Press **[LOOP]**	
3. Press **[+]**	
4. Press **[ERASE]**	Both Loop assignments remain, but the link between them is canceled.

Links

This function allows two or more memories to be sequentially linked regardless of numerical sequence.

Example: Memory 20 is linked to memory 31. Memory 31 follows memory 20 even if there are other memories recorded between these two memories. Memory 32 continues the sequence after memory 31.

This is useful, for instance, if a range of cues is used as a chaser and, therefore, you do not want them to sequence on the A/B crossfader during playback.

When a Link and a Loop are assigned to the same memory, the link overrides the Loop.

Programming a Link between two memories

Example: Link memories 20 and 30.

Keypresses	Results/Comments
1. Select memory 20	
2. Press **[LINK]**	
3. Select 30	
4. Press **[STORE]**	*30* appears in the link column on the memory list.

Programming a Link among a group of memories

Example: Link memories 1, 10, 3, and 12.

Keypresses	Results/Comments
1. Select memory 1	
2. Select memory 10	The Memory List is displayed.
3. Select memory 3	
4. Select memory 12	
5. Press **[LINK]**	
6. Press **[STORE]**	Store the selected link. Memories will sequence in the order determined by the links.

Erasing a Link assignment

Keypresses	Results/Comments
1. Select memory with the Link assignment.	
2. Press **[LINK]**	
3. Press **[ERASE]**	The link assignment is canceled.

Viewing Links

Keypresses	Results/Comments
1. Press **[LINK]**	
2. Press **[EXAM1]**or **[EXAM 2]** or **[EXAM 3]**	The Memory List is displayed exactly as it will run on the playback.

CHAPTER 11
DATA STORAGE, RETRIEVAL, & PRINTING

This chapter includes:

Navigating the Hard Disk

The default drive of the system is C and the root directory is ACT. The current drive and directory are displayed at the top of the screen.

When navigating the hard Disk, you are working under the Change directory option. In this mode there is always a directory highlighted in blue.

If you are at beginning of the directory tree, journeying to a directory that contains the file you want to load or to record a file in a selected directory is straightforward.

Keypresses	**Results/Comments**
1. Go to the Load or Record menu.	The directories and files are displayed.
2. Press **F3 Change Dir**	
3. Use the arrow keys to place the cursor on the directory.	
4. Press **F1 Enter**	

Navigating to a “higher” directory

To navigate back to a “higher” directory you must always return to the previous layer by selecting <Up Dir>. <Up Dir> is the first line displayed in the directory or subdirectory list.

Example: You are currently in Opera//Home/Troupe A/Program A. You want to go to Opera/Home/Troupe B/ Program b.

This is your directory tree:

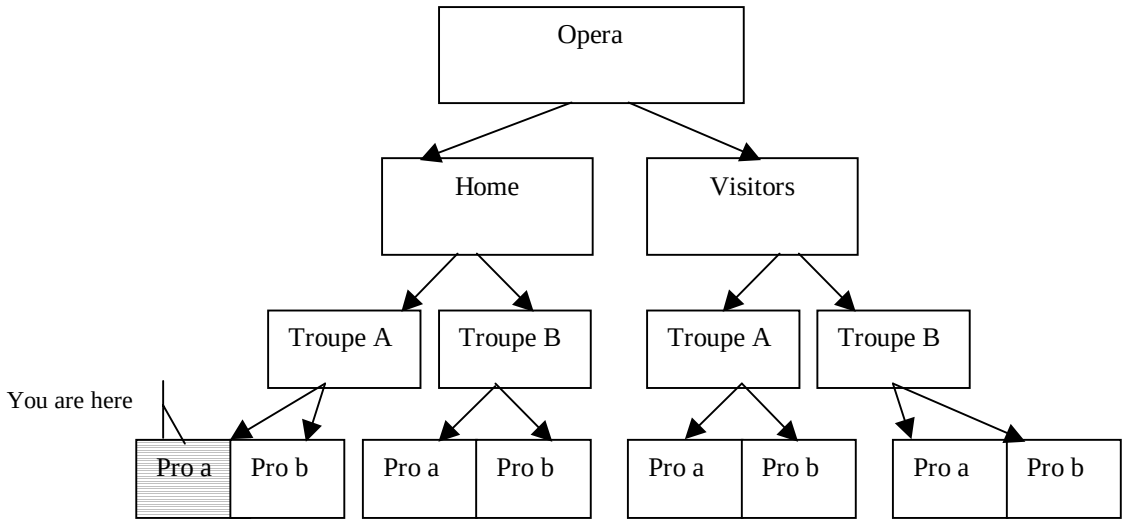


Figure 1 Navigating the Hard Disk

Keypresses

1. Press **F3 Change Dir**
2. Use the arrow keys to place the cursor on the <Up Dir> line.
3. Press **F1 Enter**

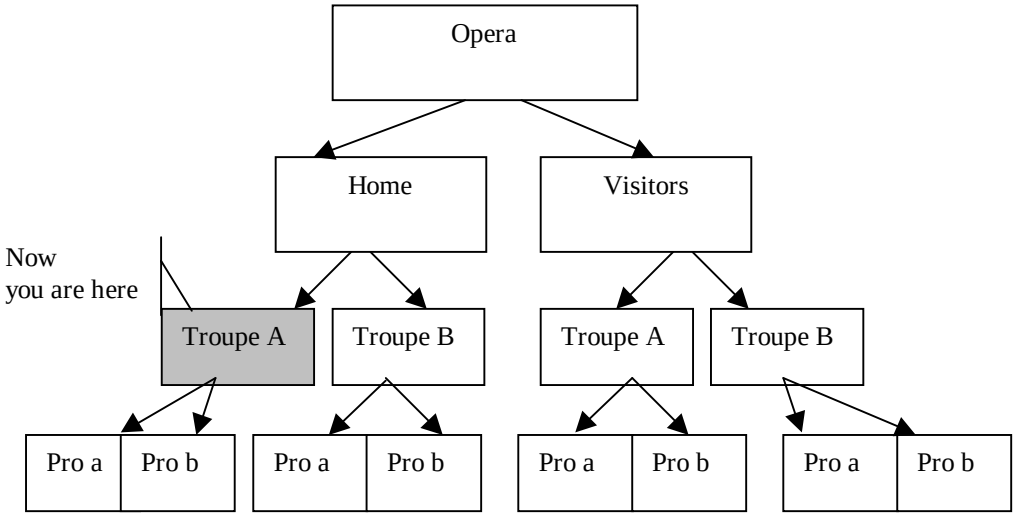


Figure 2 Navigating the Hard Disk

Keypresses

1. Use the arrow keys to place the cursor on the <Up Dir> line.
2. Press **F1 Enter**

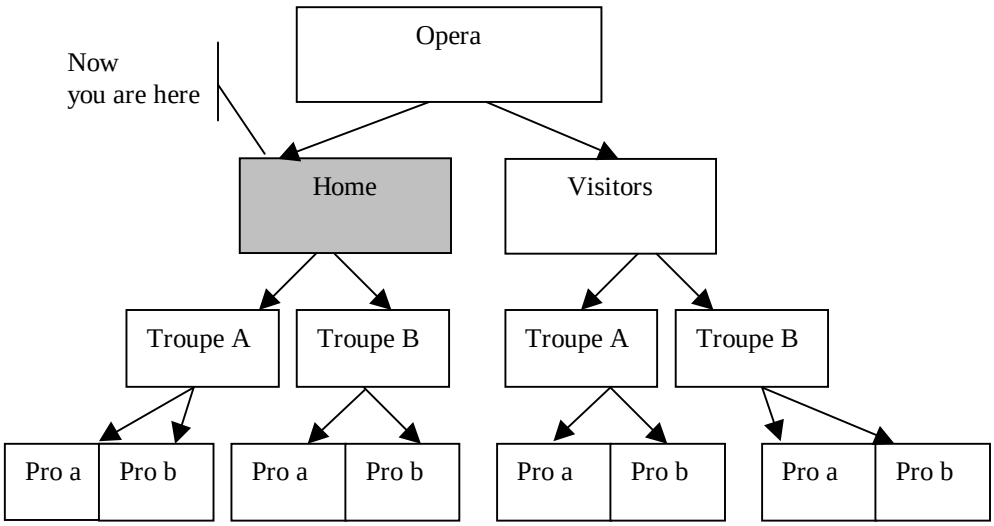


Figure 3 Navigating the Hard Disk

To continue navigating to the directory Troupe B, as per the example:

3. Press **F1 Enter**

4. Move the cursor to directory Troupe B and press **F1 Enter**.

5. Move the cursor to directory Pro b and press **F1 Enter**.

6. Now press **F5 Remain Here**. Continue by selecting the show file in directory Troupe B if you are in the Load menu or record a new show file in this directory if you are in the Record menu.

Returning to the Root directory

Return to the root directory from any of the other directories by pressing **F4 Return to Root**. .

If this option is not displayed, press **F3 Change Dir** and **then F4 Return to Root.**

In the example above, if you want to return to the Opera directory from your beginning position, pressing **F4 Return to Root** bumps you to the Opera directory.

Recording Show Files

Shows are recorded in the Record menu, menu number 5.

The entire contents of the console memory (including memories, patch, channel patch, scroller assignments, macros, libraries, etc.) are recorded onto the hard disk and onto a 1.44Mb. diskette.

Each show file is given a number. The file number is usually written in this format: ###.#.

Text may be entered along with the file number to facilitate identification. You can type text on an alphanumeric keyboard or use the NSKs in Alpha mode.

The system automatically records the date and time of the recording.

F2 Print acts as "print screen" and prints the current drive/directory display.

Important! All operations in the Record menu interfere with the display and output of loops running on the crossfaders. Do not enter the Record menu during playback!

File management on the hard disk

The default drive of the system is C and the root directory is ACT.

The current drive and directory are displayed at the top of the screen.

New directories may be added to the root directory.

Return to the root directory from any of the other directories by pressing:

F4 Return To Root. If this option is not displayed, press **F3 Change Dir** and then **F4 Return to Root**.

Creating directories

You may want, for example, a different directory for each of the performing groups that use your venue.

Keypresses	Results/Comments
1. Enter the Record menu.	The directories and files are displayed.
2. Press **F4 Make New Dir**	A prompt asking for the name of the new directory appears.
3. Type the name of the new directory on the alphanumeric keyboard or use the NSKs in Alpha mode.	There is space for 8 characters.
4. Press **F1 Enter**	The new directory is displayed.

Creating additional subdirectories

Example: Since the dance company Steps often performs at your venue, you have created a directory called *Steps*. This company performs a few different programs and each program has 2 works.

You can create subdirectories in the *Steps* directory called *program 1*, *program 2*, and *program 3*. In each subdirectory you can save the show file for the dances included in the program.

Keypresses	Results/Comments
1. Press **F3 Change Dir**	
2. Use the arrow keys to highlight the directory.	
3. Press **F1 Enter**	
4. Press **F5 Remain Here**	
5. Press **F4 Make New Dir**	A prompt asking for the name of the new subdirectory appears.
6. Type the name of the sub directory on the alphanumeric keyboard or use the NSKs in Alpha mode.	
7. Press **F1 Enter**	You are now working in the new subdirectory.

Recording a show file to the hard disk

The default directory is C:\act. If you want to record the show file in a different directory, you must change directories if you have not already done so.

If you are recording over a play number already in use: *Play Exists* is displayed. If you want to overwrite the data recorded on that play number press **F1 YES** again to confirm the command.

Keypresses	**Results/Comments**
1. Enter the Record menu.	The directories and files are displayed.
2. Press **F3 Change Dir**	
3. Use the arrow keys to highlight the directory you want to record to.	
4. Press **F1 Enter**	.
5. Press **F5 Remain Here**	This notifies the system of your intention to continue working in the selected directory
6. Press **F1 Play/Act**	A prompt for the show file number is displayed.
7. Enter the show file number on the numeric keypad.	The show file can be up to 3 whole digits and a decimal number. Examples: 333.1, 28.2, 1.5, 0.3. The time and date automatically included.
8. Press **F2 Text** and type text on the alphanumeric keyboard or use the NSKs in Alpha mode.	This is optional.
9. Press **F1 Store**	A confirmation prompt is displayed.
10. Press **F1 Yes**	After receiving confirmation, the show file is recorded. A small dynamic display in the upper right corner of the screen shows the recording progress. When the recording is complete, the message *Record Complete* is generated.

Recording to a floppy disk

The console automatically compresses the data contained in the memory, thus recording 2Mb. of data to 1.44 diskettes. This is a selectable feature. A toggle in the System Parameters menu determines whether the data is compressed or not. (See System Parameters menu.)

If you are recording over a play number already in use: *Play Exists* is displayed. If you want to overwrite the data recorded on that play number press **F1 Yes** again to confirm the command.

Keypresses	Results/Comments
1. Enter the Record menu.	The directories and files are displayed.
2. Insert a formatted diskette to the disk drive	Diskettes can be formatted on a PC or in Service Tools.
3. Press **F5 Change Drive**	If there is no diskette in the disk drive or if the diskette is damaged the system displays the message *Bad Diskette*.
4. Press **F1 Play/Act**	The prompt *Enter Play # in Format Xxx.X* is displayed.
5. Use the numeric keypad to enter the play number.	If you enter a single digit the system adds .0. For example: if you enter **1** on the keypad the play number will be recorded as **1.0.**
6. Press **F2 Text** (optional)	Text can be typed on the alphanumeric keyboard or use the NSKs in Alpha mode. When recording, the system automatically appends the date and time of the recording to the play number.
7. Press **F1 Store**	The system enters the record mode and asks *Are You Sure?* If the diskette is write protected the message reads *Diskette Protected*. Correct the error and continue.
8. Press **F1 Yes**	When recording is complete the message *Record Complete* displayed.

Autosave

The Autosave function creates backup files that contain all of the current data. This enables you to restore the state of the system, including memories, libraries, macros, snaps, the system configuration etc., at a later date.

Autosave is triggered automatically when the Autosave option in the System Parameters menu is enabled. Autosave creates backup files at 15-minute intervals and after 20 Store commands.

You may also operate Autosave manually through the Trigger Autosave function in the Autosave menu (menu 25).

The Autosave process does not interfere with normal system operation. A progress bar at the top center of monitor 1 notifies you that an Autosave is in progress.

Autosave files are stored on the hard disk in a special directory, called Autosave, under the root directory. The Autosave directory is automatically created when the first Autosave occurs.

Autosave files are accessible only through the Autosave menu (menu 25). The functions available are:

- Restore (load) a file generated by Autosave
- Delete all Autosave files
- Trigger Autosave
- Lock or unlock Autosave files.

Determining the number of files saved

Each generation of a backup file is automatically given an identification number.

The ID numbers range from 1 - 999. When 999 is reached the number is reset to 1.

The number of files saved on the hard disk is determined by the entry for *Autosave # of Generations* in the System Parameters menu. The maximum number of generations is 8. Example: If you have programmed the system to save 4 generations the fifth generation of the Autosave file is given ID number 5 and generation 1 is deleted.

Warning! Each generation requires 2 Mb of disk space.

Keypresses	**Results/Comments**
1. Enter the System Parameters menu.	
2. Use the arrow keys to select *Autosave # of Generations*.	
3. Press **F1 Enter**	The item is now highlighted in red.
4. Select the number of generations.	This number determines how many generations of backup files generated by the Autosave function are saved. The maximum number is 8.
5. Press **F1 Store**	The Autosave function is automatically enabled.

Enabling the Autosave function

When the Autosave function is enabled an Autosave occurs either every 15 minutes and after 20 Store commands. You can also manually trigger an Autosave in the Autosave menu.

Keypresses	Results/Comments
1. Enter the System Parameters menu.	
2. Use the arrow keys to select *Autosave # of Generations*.	
3. Press **F1 Enter**	The item is now highlighted in red.
4. Press **F2 Active**.	The Autosave function is now enabled.

Disabling the Autosave function

When the Autosave function is disabled, no automatic autosaves occur. It is not possible to manually trigger an Autosave in the Autosave menu.

Keypresses	Results/Comments
1. Enter the System Parameters menu.	
2. Use the arrow keys to select *Autosave # of Generations*.	
3. Press **F1 Enter**	The item is now highlighted in red.
4. Press **F3 Inactive**.	The Autosave function is now disabled.

Manually triggering an Autosave

An Autosave can be manually triggered in the Autosave Menu.

1. Enter the Autosave menu.	
2. Press **F3 Trigger Autosave**	While an Autosave is in progress a blue flag is displayed at the top of the screen.

Restoring (loading) Autosave files

You can restore a previous state of the system by loading an Autosave file.

Restoration can be accomplished only if the system configuration and software versions are identical to those in the Autosave files. If there is a discrepancy, a warning window opens and displays the differences. You must correct the discrepancy if you want to continue.

Keypresses	Results/Comments
1. Enter the Autosave menu.	
2. Press **F1 Restore**	
3. Enter the generation number.	Sabre asks for confirmation of the command.
4. Press **F1 Yes**	**Restoring a previous generation erases all of the current data.** When the restoration is complete, the message *Please Warm Start* is displayed.
5. Switch off Sabre.	
6. Power up.	The restored generation is now present in Sabre's memory and you can continue working as usual.

Locking and unlocking Autosave files

Autosave generations can be locked to protect them from deletion. Locked files are stored on the hard disk until they are unlocked and deleted.

Keypresses	Results/Comments
1. Enter the Autosave menu.	
2. Press **F4 Lock/Unlock**	
3. Enter the generation number.	Select the generation number that you want to protect.
4. Press **F3 Comment**	This is optional.
5. Type your comment on the alphanumeric keyboard.	
6. Press **F1 Lock**	

Keypresses	Results/Comments
1. Enter the Autosave menu.	
2. Press **F4 Lock/Unlock**	
3. Enter the generation number.	Select the generation number that you want to unlock.
4. Press **F2 Unlock**	The unlocked generation can now be deleted from the hard disk.

Deleting all generations of Autosave files

The delete function deletes all of the unlocked generations. If you want to save some of the generations, lock them before executing the delete function.

Keypresses	Results/Comments
1. Enter the Autosave menu.	
2. Press **F2 Delete All**	The system prompts for a confirmation command.
3. Press **F1 Yes**	All of the unlocked generations are deleted. The locked generations remain on the display.

Loading show files

The Load menu, menu 2, manages loading show files stored on the hard disk or floppy disk.

If there are memories on board (assigned to playback devices) while loading, the memory numbers that are identical to the memories already on board do **NOT** load.

Selecting a show file from the hard disk

When entering the Load menu, the active directory is the last selected directory. If this directory does not contain the show that you want to load you must change directories.

Keypresses	**Results/Comments**
1. Enter the Load menu.	
2. Press **F3 Change Dir**	Skip this step if the directory you want is displayed.
3. Press **F4 Return to Root**	The root directory is displayed.
4. Press **F3 Change Dir**	
5. Use the arrow keys and select the directory.	
6. Press **Enter**	
7. Press **F5 Remain Here**	Skip this step if the directory you want is displayed.
8. Press **F1 Play/Act**.	
9. Enter the show file number that you want to load.	
10. Press **F1 All**	see Load options, page 11-14
11. Press **F1 Yes**	While the system is loading a dynamic display is shown in the upper right corner of the screen. After loading is complete the Q List Exam is displayed. If you have made an error in entering the play number, the message *Bad Play Number* appears. Start again and enter the correct play number.

Selecting a show file from the floppy disk

You must switch to drive A:\ if you have not already done so. Use **F5 Change Drive**.

Keypresses	Results/Comments
1. Press **F1 Play/Act #**	A prompt requests the show file number.
2. Enter the show file number	
3. Press **F1 All**	See Load options.
4. Press **F1 Yes**	If memories are loaded, the Q-List Exam is displayed when the load is complete. If you have made an error in entering the play number, the message *Bad Play Number* appears. Start again and enter the correct play number.

Load options

You may choose to load only portions of the recorded show data.

This is a very versatile function, saving much editing time by allowing different shows to share a common patch or mix output, transferring libraries and macros from show to show, etc. The different options are:

Keypresses	Results/Comments
F1 All	All of the data contained in the show file is loaded.
F2 Patch Only	Load the patch tables only. Patch tables include spot patch, channel patch, and scroller patch.
F3 Mems Only	Load all of the recorded memories their fade times, loop, and text information.
F4 From QList #	
F5 Macro Only	Load only the macros.
F6 F1 Library Only	Choosing this option changes the soft key to allow selection of all libraries (**F1**), position libraries (**F2**), gobo libraries (**F3**), or color libraries (**F4**).
F6 F2 Mix Device Only	Load the mix device table only. Transferring the device table from show to show saves entering all the pertinent information again. Note that only the device table is loaded and not any patch assignments.
F6 F3 LEADER ONLY	Load Leader only. See Chapter 22 Leader - Change Venue function.

Load Warning messages

If there are memories assigned to playback devices (on board) while loading, memories whose numbers are identical to the memories on board are **NOT** loaded. There is a series of warning messages when there are assigned memories.

Type of Load	Message
All diskette or All QLists	*WARNING!! Memory/memories on board!*
One or a range of QLists	*WARNING!! Memory/memories from QList range on board!*
All libraries	*WARNING!! Memory/memories with Libraries on board!*
Position libraries only	*WARNING!! Memory/memories with Position Library on board!*
Gobo libraries only	*WARNING!! Memory/memories with Gobo Library on board!*
Color libraries only	*WARNING!! Memory/memories with Color Library on board!*

Loading QLists

You can load Q-Lists as they are recorded in the show file. Example: Your show file contains Q-Lists 1, 2, 20, and 30. See Chapter 16 Q-Lists for more information about Q-Lists.

Keypresses	Results/Comments
1. Enter the Load menu.	
2. Press **F1 Play/Act**	You are prompted to enter the show file number.
3. Enter the show file using the numeric keypad.	
4. Press **F3 QLists Only**	
5. Press **F1 Load**	All the QLists are loaded.

➢**Note**
Memories are not loaded if they are being loaded to the same QList number and have numbers identical to memories that are assigned to a playback device. Example: QList 1 consists of memories 1 – 6. This QList is assigned to a controller. When loading from a different show file to QList 1 memories number 1 – 6 do not overwrite the memories assigned to a controller.

Loading to a selected Q-List

You can load all the memories from a QList, a selected range of memories from a Q-List, or a range of Q-Lists while renaming the Q-Lists.

Example: Load Q-Lists 1 – 6 as Q-Lists 91 – 96. The default Q-List is 1.

Keypresses	Results/Comments
1. Enter the Load menu.	
2. Go to the correct drive or directory.	
3. Press **F1 Play/Act**	Sabre prompts for the show file.
4. Enter the show file number.	
5. Press **F4 From QList**	Sabre automatically enters the default Q List number.
6. Press **F2 Thru Q list #**	
7. Enter 6 on the numeric keypad.	
8. Press **F1 Start at Q list #**	Sabre prompts for the target Q-List.
9. Enter 91 on the numeric keypad.	
10. Press **F1 Load**	The message *Are you Sure?* is displayed.
11. Press **F1 Yes**	All of the memories in Q List 1 – 6 are loaded to Q Lists 91 – 96.

Example: Load a range of memories from Q-List 1 as Q-List 21

Keypresses	Results/Comments
1. Enter the Load menu.	
2. Go to the correct drive or directory.	
3. Press **F1 Play/Act**	Sabre prompts for the show file.
4. Enter the show file using the numeric keypad.	
5. Press **F4 From QList**	Sabre automatically enters the default Q List number.
6. Press **F3 Mem #** and enter the first memory of the range.	
7. Press **F2 Mem #** and enter the last memory of the range.	
8. Press **F1 To Q list #**	Sabre prompts for the target Q-List.
9. For this example, enter 21 on the numeric keypad.	
10. Press **F1 Load**	The message *Are you Sure?* is displayed.
11. Press **F1 Yes**	All of the memories in Q List 1 – 6 are loaded to Q Lists 91 – 96.

Warning Difference

If the show file was recorded under a system configuration different than the current one, the **WARNING DIFFERENCE** window is displayed when you attempt to load the show.

The **WARNING DIFFERENCE** window displays the current system configuration and the configuration read from the hard disk or the diskette.

A list of all the tables (scroller table, channel patch, spot patch, mix output patch, input patch, and Topo map) is also displayed. The patch tables and Topo map are affected when loading under Warning Difference. You can choose how to handle loading the patch tables and the Topo map, see below.

Continue loading

Keypresses	**Results/Comments**
1. Use **F3** to toggle between the choices **merge/clear** and **don't load**.	As a rule of thumb, if the item is larger in the show data than it is in the current system configuration, then **clear** and **don't load** are the choices. If the item is larger in the current system configuration than the on the disk then **merge** and **don't load** are the options.
2. Press **F1 Load**	The load operation is executed.

Don't Load None of the information contained in the show file pertaining to the specific patch table is loaded. Example: the configuration in the show files is 512 channels. The current system configuration is 420 channels. No information from the Channel Patch is loaded. The default Channel Patch will be present after the load is complete.

Clear When the configuration recorded in the show file is larger than the Sabre's current configuration, the extraneous data is cleared. Example: the configuration in the show files is 512 channels. The current system configuration is 420 channels. All channels and related soft patch greater than 420 channels is not loaded.

Merge When the configuration recorded in the show file is smaller than Sabre's current configuration, the data contained in the show file is merged into the current configuration. Example: the configuration in the show files is 376 channels. The current system configuration is 420 channels. All channels and related soft patch up to channel 420 is loaded.

It is always expedient to load the system configuration (see Service Tools - disk operations) before loading show files and avoid loading under WARNING DIFFERENCE, as differences in the toggles in Special Functions and the entries in Special Numbers also influence the console's function.

Deleting Show Files and Directories

Delete Play/Act is menu number 10.

Use this menu to delete show files recorded on the hard or floppy disk. Delete directories from the hard disk.

Deleting a show file

Keypresses	Results/Comments
1. Enter the Delete Play/Act menu	
2. Select the directory containing the show file that you want to delete.	
3. Press **F5 Remain Here**	
4. Press **F1 Play/Act**	The prompt asks for the show file number.
5. Select the file number.	
6. Press **F1 Enter**	Confirmation is requested.
7. Press **F1 Yes**.	The show file is deleted.

Deleting a directory

You can delete a directory only if the directory is empty. Before attempting to delete a directory you must delete all of the show files and subdirectories.

Keypresses	Results/Comments
1. Enter the Delete Play/Act menu	
2. Press **F4 Delete Dir**	
3. Select the directory that you want to delete.	
4. Use the arrow keys to select the directory.	
5. Press **F1 Delete**	Confirmation is requested. If the directory is not empty an error message is displayed.

Printing

The Printer menu is menu number 14.

It is suggested to print for documentation purposes and a printout is a lifesaver if your disk is damaged.

The print options are:

Print Option	What it Prints
Memory list (F1)	This is the memory list (cue sheet) displayed as Memory Exam. The memories are listed in numerical order, with fade times, text, Part Q assignments, and Events. The Q-List information is also included.
Memory contents (F2)	Single memories, a range of memories, or all the memories may be printed. The printout contains the memory number, all spots and parameters assignments, all channels and intensity assignments, scroller assignments, fade times, part times, and text.
Position Library (F3)	Print all or some of the Libraries. Either the contents of the selected Libraries or a track sheet can be printed.
Gobo Library (F4)	Print all or some of the Libraries. Either the contents of the selected Libraries or a track sheet can be printed.
Color Library (F5)	Print all or some of the Libraries. Either the contents of the selected Libraries or a track sheet can be printed.
Macro (F6, F1)	Print a list of Macros and their contents.

CHAPTER 12
THE CROSSFADERS

This chapter includes:

Overview

Sabre has 2 crossfaders, the A/B and C/D crossfader. Each crossfader accepts memory assignments, loop assignments, and group assignments. Group assignments can include channels and spots The A/B crossfader supports automatic operation of Events assigned to memories and Part Qs.

The B and D faders can be disabled or configured as a crossfader or a rate fader. This configuration is done in Service Tools/Config System/ Special Functions bits C and D (see Configuring the Crossfader, page 12-9).

When the crossfader is at the top of its travel the active crossfader is A; at the bottom of its travel the active crossfader is B.

If you have configured B and D as crossfaders, when both faders are at the top end-stop, A (C) is the active fader. If both faders are at the bottom end-stop, B (D) is the active fader.

Crossfades can be executed manually, by moving the faders, or automatically.

The automatic A/B crossfade commands include Go, GoTo (multifade), Backfade, and Hold. The A/B crossfader supports Part Qs (see Chapter 18) and Events (see Chapter 20).

The automatic C/D crossfader commands include: Go, GoTo (multifade), Hold, and **[↔]** (reverse sequence direction).

The crossfade rate derives from the fade time assignments in the memories. The crossfade rate can be manually overridden with the Rate wheel. There is a Rate wheel for each crossfader. You can configure your console for a single crossfader (A and C) and use the second fader (B and D) as a Rate fader.

Information pertaining to the A/B and C/D crossfaders appears in the Playback area of the Stage display.

The information includes:
- The current memory
- The next memory with 5 text characters
- Loop information, if pertinent
- Fade time assignments
- Level of rate fader (if configured for Rate faders)
- Control priority information and LTP flag
- Auto Assign flag
- Sequence direction for C/D

The X-Fade Exam also shows the crossfaders' status. The X-fade Exam format is usually used during playback.

The display includes:
- A bar graph that tracks the fade's progress.
- A list of the next memories.
- Chaser and controller status.

To view the XFade Exam, press **[STAGE]**. This key toggles between the Stage and the X-fade Exam displays.

When **[AUTO ASSIGN]** is enabled (LED on) Events assigned to memories are executed.

Assigning Memories

There are 2 methods by which to assign a memory to the crossfaders. The difference between the methods is the way the memory becomes active on stage.

When you assign the memory to the active output (where the fader is located), the memory becomes immediately active. To avoid having a memory jump in and risking a lamp burn out, set the faders to their lower position B (or D) assign the memory to A (or C) and move the faders manually to A (C) or vice versa. You can also press **[GO]** instead of moving the fader manually.

You must press **[SEQ]** for automatic numerical sequencing of memories. If the assignment is the first memory of a loop **[SEQ]** is automatically enabled.

Example: Assign memory 1 to A. B is the active fader.

Keypresses	**Results/Comments**
1. Set the fader at the bottom end stop (B is active). If the crossfaders are configured as a split crossfader, set both A and B at the bottom end stop.	
2. Select memory 1.	
3. Press **[A]**	The memory number appears on the LED display and on the monitor displays.
4. Press **[GO]** or move the faders manually.	The memory is onstage.
5. Press **[SEQ]** to enable automatic sequencing. Press **[AUTO ASSIGN]** for automatic Event operation.	

You can also assign memories by using **[GOTO]**. This method fades the memory in 1 second (default fade time), in the fade time recorded for the selected memory, or in selected fade time.

When you use to assign the first memory of a loop, the loop starts running automatically.

Fade to the assignment in 1 second:

Keypresses	**Results/Comments**
1. Select a memory.	
2. Press **[GO TO]** for the A/B or C/D crossfaders.	The selected memory is assigned to the active fader and is faded up in 1 second. *Mult* appears in the LED display and monitor display.
3. Press **[SEQ]** to enable automatic sequencing. Press **[AUTO ASSIGN]** for automatic Event operation.	

Fade to the assignment in recorded fade time:

Keypresses	Results/Comments
1. Select a memory.	
2. Press **[TIME]**	The fade times for the selected memory are displayed in the command line.
3. Press **[GO TO]**	The selected memory is assigned to the active fader and is faded up in assigned fade time.
4. Press **[SEQ]** to enable automatic sequencing. Press **[AUTO ASSIGN]** for automatic Event operation.	

Fade to the assignment in selected fade time:

Example: Assign and fade to memory 1 in 8 seconds.

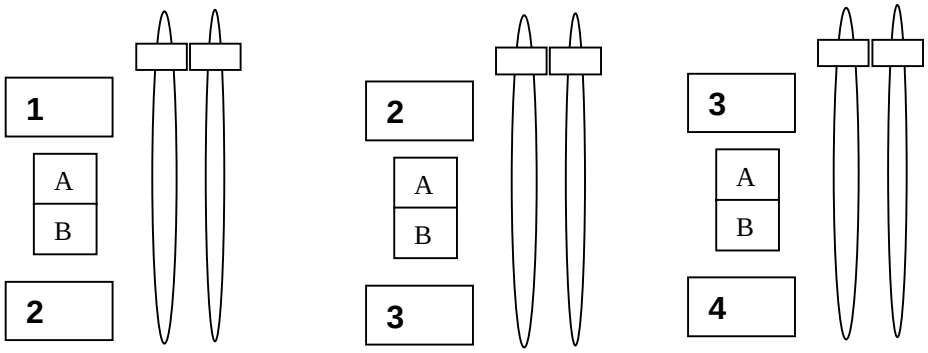
Keypresses	Results/Comments
1. Select memory 1.	
2. Press **[TIME]**	The fade times for the selected memory are displayed in the command line.
3. Press 8 on the keypad.	The selection replaces the fade times displayed in the command line.
4. Press **[GO TO]**	The selected memory is assigned to the active fader, fading in 8 seconds.
5. Press **[SEQ]** to enable automatic sequencing. Press **[AUTO ASSIGN]** for automatic Event operation.	

Sequencing Memories

The **[SEQ]** key must be enabled (LED on) for memories to sequence on the crossfaders.

The figure below shows crossfading using **[GO]**.

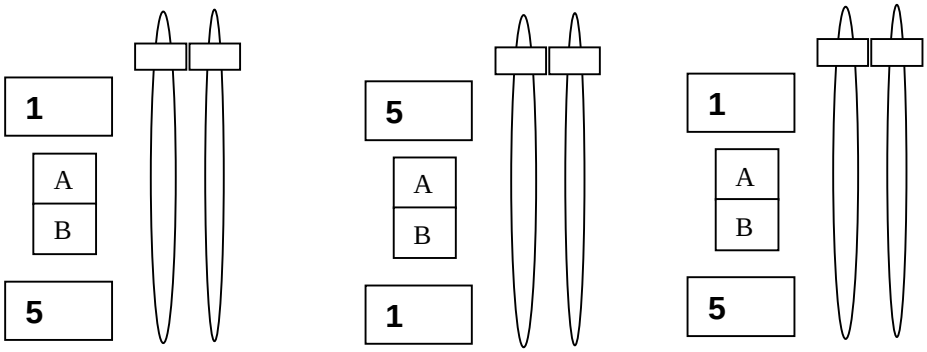
[SEQ] enabled: Original assignment After 1st crossfade After 2nd crossfade



Sometimes you might want to disable the memory sequencing. Pressing [SEQ] manually disables the sequencing function. When disabled the LED is off.

Example: Memory 1 is assigned to A and memory 5 is assigned to B. You want memory 1 to remain assigned opposite memory 5 even after crossfading to memory 5. Disable **[SEQ]**

[SEQ] disabled: Original assignment After 1st crossfade After 2nd crossfade



Assigning the Editor Group

You can assign the group of channels and spots in the editor to a crossfader. This assignment is called a group assignment. *Grp* appears on a crossfader's LED display if the assignment is a group.

When you assign the editor group to a crossfader, **[SEQ]** is automatically disable (its LED is off).

You can fade to the grp assignment by manually moving the faders. If you press **[GO]** the message *Go has no memory* is displayed and the fade is not executed.

Keypresses	Results/Comments
1. Select channels and spots and assign values.	
2. Press **[A]**, **[B],** **[C]**, **[D]**	The contents of the editor are assigned to the crossfader. The editor is released. *Grp* appears in the assignment displays.

Adding spots/channels to grp assignment

You can add channels or spots to a grp assignment on the crossfaders.

Example: Add spots to the assignment on A.

Keypresses	Results/Comments
1. Select spots and assign values.	
2. Press A	The selected spots are added to the assignment on A.

Removing spots/channels from a grp assignment

You can remove spots and channels from grp assignments on the crossfaders. This sequence is also used to modify spot and channel values or time assignments in memories on the crossfaders.

Keypresses	Results/Comments
1. Press **[MEMORY]** and **[A]**, **[B]**, **[C]**, or **[D]**	*Memory grp* is displayed in the command line.
2. To remove a channel: Select the channel number and press **[ZERO]**. To remove a spot: Select the channel and press **[RELEASE]**. To remove a spot parameter: Select spot, press the parameter key and press **[RELEASE]**	
3. Press **[STORE]**	The selections are released from the grp assignment.

Freeing assignments

Example: Free the assignments from A and C.

Keypresses	**Results/Comments**
1. Press **[A]**	The assignment is released. **[SEQ]** is disabled.
2. Press **[C]**	The assignment is released. **[SEQ]** is disabled.

The Playback Keys

Key	Function
[GO]	Pressing **[GO]** initiates a crossfade to the incoming assignment. The duration and look of the fade depends on the fade times of the incoming memory. While a crossfade is in progress, the LED is on. **[GO]** operates as **[GO TO]** (multifade) when pressed during a crossfade.
[HOLD]	Pressing **[HOLD]** halts a crossfade at any point in its progress. When the crossfade is on Hold, the **[GO]** LED flashes. The fader rate on the Playback Display appears on a red field. Pressing **[GO]** restarts the fade.
[GOTO]	Pressing **[GO TO]**, in the middle of a crossfade, begins an immediate fade to the next memory. Example: if there is a crossfade in progress from memory 1 to memory 2, pressing **[GO TO]** begins a crossfade to memory 3. You can press **[GO TO]** many times in succession. Exit loops by pressing **[GO TO]**. A crossfade begins to the memory following the loop,
[BACK]	Press this key to crossfade to the previous memory. The fade time is 1 second. You can press this key many times in succession to fade back a few memories.
[SEQ]	When enable (LED on) memories assigned to the crossfader automatically sequence in numerical order. When disabled (LED off) manual and automatic crossfaders are between the current assignments and the memories do not sequence.
[AUTO ASSIGN]	This key is exclusive to the A/B crossfader. When active (LED on) Events assigned to memories operate when the memory sequences on the A/B crossfader. When not active (LED off) events assigned to memories do not operate.
[⇔] C/D only	This key is exclusive to C/D. When active (LED on) the memory sequence on C/D is reversed.

Modifying the Fade Rate

The fade rate of memories on the sequencing on the crossfaders can be taken over manually.

When a crossfade is in progress, you can move the fader until it “captures” the fade at some point in its progression. When you have succeeded in capturing the fade, the LED on the **[GO]** key goes out. Once you have control of the fade, you can complete it by moving the fader to the end stop.

Using the Rate wheels

The wheel located above the A/B crossfader is used to manually override the fade rate of the memories on A/B.

The wheel located above the C/D crossfader is used to manually override the fade rate of the memories on C/D

The range of the rate wheel is from cut to hold.

The current A/B and C/D fade rates are displayed in yellow on the playback display. When *MEM* is displayed, the crossfade occurs in the recorded memory time. Any deviation from the recorded memory time is displayed in percentage or *CUT* and *HOLD*.

You can use the wheel to preset a modified rate change or override the fade rate of a fade in progress.

When B and D are disabled the Rate wheels are active at all times, even when their LEDs are not on.

When B and D are enabled and defined as split crossfaders the A/B and C/D Rate wheels are active at all times, even when their LEDs are not on.

When B and D are enabled and defined as Rate faders the A/B and C/D Rate wheels are disabled.

Presetting a rate

Keypresses	Results/Comments
1. Use the wheel to set the desired fade rate.	View the modified rate on the Playback display.
2. Press **[GO]**	The crossfade occurs in the modified rate time.

Overriding a fade in progress

Keypresses	Results/Comments
1. Press **[GO]**	The crossfade begins.
2. Use the wheel to set the desired fade rate.	View the modified rate on the playback display.

Returning to memory rate

Turn the rate wheel until *MEM* is displayed on the playback display.

Keypresses	Results/Comments
1. Move the wheel back to the memory rate.	*MEM* is displayed on the playback display.

Configuring the Crossfader

You can configure faders B and D as a crossfader and a rate fader, as split crossfaders, or disable faders B and D completely.

In this discussion B and D refer to the second fader handle A/B and C/D.

Configure B and D as Rate Faders

Keypresses

1. Go to Service Tools
2. Press **F3 System Config**
3. Enter the passcode
4. Press **F4 Special Functions**
5. Place the cursor on bit C *B/D Faders* and toggle to 0 – Enable.
6. Place the cursor on bit D *B/D Faders Usage* and toggle to 0 – Rate.
7. Store the change and Cold Start the desk.

Configure as split crossfaders

When the B and D faders are configured as split crossfaders, use the Rate wheels for rate control.

Keypresses

1. Go to Service Tools
2. Press **F3 System Config**
3. Enter the passcode
4. Press **F4 Special Functions**
5. Place the cursor on bit C *B/D Faders* and toggle to 0 – Enable.
6. Place the cursor on bit D *B/D Faders Usage* and toggle to 1 – Split.
7. Store the change and Cold Start the desk.

Disable B and D

When the B and D faders are configured as split crossfaders, use the Rate wheels for rate control.

Keypresses

1. Go to Service Tools
2. Press **F3 System Config**
3. Enter the passcode
4. Press **F4 Special Functions**
5. Place the cursor on bit C and toggle to 1 – Disable.
6. Store the change and Cold Start the desk.

CHAPTER 13 CONTROLLERS/CHASERS, SUBMASTERS, & JOYSTICK

This chapter includes:

Overview

The Sabre control desk has 24 controllers. Controllers are all-purpose faders that accept assignments of groups of spots, groups of channels, groups of spots and channels, memories, Effect memories, and spot parameters. Controllers support Q Lists and chaser assignments.

Type of Assignments	
Group:	• One or more spots • One or more channels • Spots and channels
Memory:	• Single memory assignments
Chasers:	• A range of memories • A loop • Q Lists • Hard run mode • Soft run mode • Effects
Spot Parameters:	• One or more parameters of selected spot/s

Controller assignments are used for playback and as building blocks for programming memories.

When programming memories use the Call function to convert the controller output to a group in the editor. This editor group can then be further edited or stored as a memory. (See Chapter 7 Programming Memories)

During playback chasers can be run automatically or manually, group and memory assignments can be operated manually, and spot parameter assignments can be used to change the look of a running chaser or any other current look.

Controller assignments are recorded in snaps.

Assignment keys

Each controller has a **[GO/DIM]** and a **[HOLD/XF]** key. These keys determine the assignment mode of the controller. They also control the chasers and Effects. In the sections below these keys are referred to as **[DIM]** and **[XF]**, except when discussing chasers and Effects.

When the controller assignment is to **[XF]**, raising a controller crossfades from the stage output to the controller assignment. Lowering the controller crossfades from the controller output to the next control source priority.

An assignment to the **[DIM]** key of the controllers captures all the parameter assignments of the spot/s assigned to the controller. Raising or lowering the controller fades the dimmer up or down.

When assigning channels to a controller it does not matter which assignment key is used.

Bump Buttons

Each controller has an associated Bump Button. Pressing a Bump Button flashes the controller assignment.

The Bump Buttons can also run chasers. While the Bump Button is depressed the chaser runs. Releasing the Bump Button stops and blacks out the chaser.

[LATCH] changes the Bump Buttons to On/Off keys. When active (LED on) one press on the bump buttons turns on the controller assignment. A second press turns off the controller assignment.

Control priority

The default Control Priority for controllers is from controller 24, the “strongest” to controller 1, the “weakest”. Control priority influences moving light parameters. Control priority can be altered in the Device Priority menu. Channels operate under HTP (Highest Takes Precedence) mode.

The controllers can be configured for LTP operation; see Chapter 23 Control Priority

Controller Displays

Controller assignments are displayed on the Stage display, the X-fade display, and on the LCD displays above the controllers.

Stage display

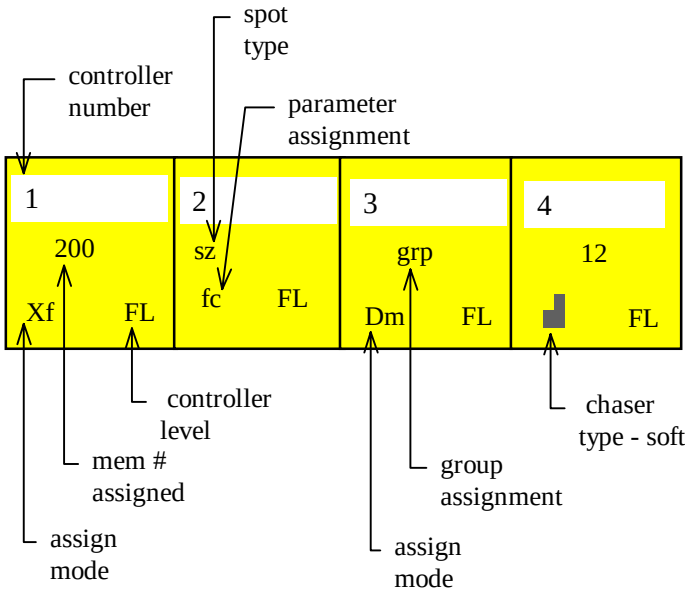


Figure 1 Controllers Playback Display

The X-Fade display contains an expanded controller display. It basically looks like this:

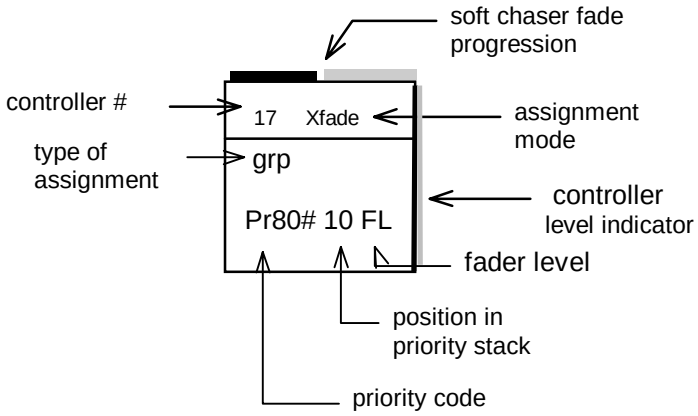


Figure 2 Controllers in XFade Display

Type of Assignments	What is displayed?
Group of spots and/or channels	*grp*
Memory	The memory number. If the assignment was through the **[DIM]** key, the memory number appears in red. If the assignment was through the **[X-FADE]** key, the memory number appears in gray when at 0%.
Chasers	The assigned memory range. When the chasers are running or on hold, the assignment appears in red. The run mode and the chase rate.
Soft Chaser	*Cs* followed by "stairs" The assigned memory loop or range. The display is dynamic if the chaser is running.
Hard Chaser	*Ch* followed by →→ The first memory of the assigned loop or memory range. The display is dynamic if the chaser is running.
Q List	*Qh* denotes a hard run Q List assignment. *Qs*, denotes a soft run mode assignment. The display is dynamic if the Q List is running.
Parameter	The moving light's short name and the parameter name.

LCD displays

The keys **[DISPLAY CUE]** and **[DISPLAY TEXT]** control the LCD display.

[DISPLAY TEXT] has 5 displays.

Access the displays with successive presses on the **[DISPLAY TEXT]** key.

	Display 1	**Display 2**	**Display 3**	**Display 4**	**Display 5**
1st row	Text of incoming memory	Fader level	Chase rate	Text of incoming memory	Text of current memory
2nd row	Incoming memory number	Text of incoming memory	Text of incoming memory	Text of outgoing memory	

[DISPLAY CUE] has 4 displays.

Access the displays with successive presses on the **[DISPLAY CUE]** key.

	Display 1	**Display 2**	**Display 3**	**Display 4**
1st row	Q-List #	Fader level	Chase rate	Incoming memory number
2nd row	Incoming memory number	Incoming memory number	Incoming memory number	Outgoing memory number

Assigning Memories

Single memories, a selected range of memories, and an open-ended range of memories can be assigned to controllers.

If a memory is assigned to a controller and if anything (a spot, a spot parameter, or a channel) is removed from or added to the controller assignment, the assignment becomes a grp.

Assigning a single memory

Example: Assign memory 2 to controller 20 in x-fade assignment mode.

Keypresses	**Results/Comments**
1. Select memory 2.	
2. Press **[ASSIGN]**	The message *Dim/Fade Key Expected* is displayed.
3. Press controller 20's **[XF]**	The memory number assigned and the assignment appear on the LCD display above the controller.

Assigning a range of memories

A range of memories can be assigned to a range of controllers.

If there are other assignments present they are bumped out.

Example: Assign one memory to each controller, starting from memory 1 to controller 2, memory 2 to controller 3 and so forth.

Keypresses	Results/Comments
1. Select Memory 1	
2. Press **[→]**	It is unnecessary to select the last memory in the range, as this will not exceed the number of available controllers.
3. Press **[ASSIGN]**	The message *Dim/Fade Key Expected* is displayed.
4. Press controller 2's **[XF]** or **[DIM]**	Memory 1 is assigned to controller 2, memory 2 to controller 3, etc.

Assigning a group of memories

A group of memories can be assigned to a range of controllers.

If there are other assignments present they are bumped out.

Example: Assign 5 non-sequential memories to 5 controllers, starting from controller 9.

Keypresses	Results/Comments
1. Select Memory 1	
2. Press **[MEMORY]**	The memory list is displayed.
3. Enter 5 on the keypad.	
4. Repeat steps 2 & 3, selecting memories 8, 10, and 12	
5. Press **[ASSIGN]**	The message *Dim/Fade Key Expected* is displayed.
6. Press controller 9's **[XF]** or **[DIM]**	The selected memories are assigned to controllers 9 –13.

Fading memory assignments

You can assign a memory to fade in.

Keypresses	Results/Comments
1. Select a memory	
2. Press **[SOFT]**	
3. Press **[XF]** or **[DIM]**	The memory is assigned.
4. Press **[GO]**	The memory fades in to the level of the controller handle..

Assigning Spots

If no parameter values are entered, the current parameter values (current output or tracking) of the selected spots are the values included in the controller assignment.

Assignments depend on the editor status. When the editor contains selected (displayed in red) and active spots (displayed in white) only the active spots are included in the controller assignment. If the editor contains active spots, but no selected spots all spots in the editor are assigned.

Example: Spots 1 → 6 are in the editor. You then select spots 10 → 16. An assignment to a controller will include spots 10 → 16 only. If you want to assign all spots in the editor, you must press **[ENTER]** before the assignment sequence.

Assigning a range of spots to a controller

Example: Spots 1 → 6 are selected in the editor. Assign them to controller 6.

Keypresses	**Results/Comments**
1. Select spots 1 → 6.	
2. Optional – assign parameter values to the selected spots.	The spots are displayed in red.
3. Press **[ASSIGN]**	The message *Dim/Fade Key Expected* is displayed.
4. Press **[XF]** or **[DIM]**	The controller display and the LCD display show this assignment as *grp*.

Example: Spots 10 → 16 are selected in the editor. Spots 1 → 6 are active in the editor. Assign the editor contents to controller 6.

Keypresses	**Results/Comments**
1. Select spots 1 → 6.	
2. Optional – assign parameter values to the selected spots.	
3. Select spots 10 → 16.	Spots 1 → 6 are displayed in white.
4. Optional – assign parameter values to the selected spots.	Spots 10 → 16 are displayed in red.
5. Press **[ENTER]**	Spots 1 → 6 and spots 10 → 16 are displayed in white.
6. Press **[ASSIGN]**	The message *Dim/Fade Key Expected* is displayed.
7. Press **[XF]** or **[DIM]**	The controller display and the LCD display show this assignment as *grp*.

Adding a spot to a controller assignment

Example: Add spot 2 to the group of spots already assigned to controller 1.

Keypresses	Results/Comments
1. Select spot 2.	
2. Optional – assign parameter values to the selected spots.	
3. Press **[ASSIGN]**	The message *Dim/Fade Key Expected* is displayed.
4. Press **[XF]** or **[DIM]**	Spot 2 joins the group of spots already resident in controller 1

Removing a spot from a controller assignment

Example: Remove spot 13 from the group of spots resident in controller 1.

Keypresses	Results/Comments
1. Select spot 13.	
2. Press **[FREE[**	The message *Dim/Fade Key Expected* appears. *Free* is displayed in the command line.
3. Press **[XF]** or **[DIM]**	Spot 13 is removed from the assignment on controller 1.

Removing a parameter from a controller assignment

It is possible to remove one or more parameters from a controller assignment.

Example: Remove parameter 2 from spot 13 assigned to controller 1.

Keypresses	Results/Comments
1. Select spot 13.	
2. Press the key of the parameter that you want to remove.	
3. Press **[FREE]**	The message *Dim/Fade Key Expected* appears. *Free* is displayed in the command line.
4. Press **[XF]** or **[DIM]**	Controller 1 no longer controls parameter 2 of spot 13.

Assigning Spot Parameters

It is possible to assign a single parameter to a controller, allowing a fade from 0 - Full.

If a mixed step is assigned to a controller, the value also fades to Full (100%) Example: a mixed step with 3 steps is assigned to a controller. When you raise the controller, the parameter values fade from 1.0 - 3.f.

A parameter to controller assignment is displayed on the controller display and the LCD display; the parameter name and the device type are shown. The LEDs on both the **[DIM]** and **[XF]** keys are on.

For Intellabeam and Cyberlight fast and proportional mode parameters: The parameters must be assigned in proportional mode to fade up from 0 - full. If they are assigned in fast mode they will always jump to full. The Cyberlight parameters affected are p6, p8, p12, p13, and p14. The Intellabeam Parameters are p2, and p6.

Example: the gobo parameter of spot 1 (Intellabeam) is assigned to controller 1. The display reads **gb/is**.

Keypresses	**Results/Comments**
1. Select spot 1.	
2. Press the key of the parameter for assignment.	
3. Press **[ASSIGN]**	The message *Dim/Fade Key Expected* appears.
4. Press **[DIM[** or **[XF]**	The LEDs of both **[DIM]** and **[XF]** are illuminated.

Assigning Channels

Channels can be assigned to fade from 0% to Full. Channels can also be assigned with a limited intensity. Example: assign a channel so that when the controller is at the top of its travel the channel is at 75 %.

The examples below assign single channels to controllers. A range of sequential channels and groups of non-sequential channels can also be assigned.

To assign a range of channels, use the key sequence: **[CHANNEL] [# → #]**

To assign a group of channels: **[CHANNEL #] [CHANNEL #] [CHANNEL #]...**

All other selection sequences can also be used.

Assignments depend on the editor status. When the editor contains selected (displayed in red) and active (displayed in white) channels only the active channels are included in the controller assignment. If the editor contains active channels, but no selected channels all channels in the editor are assigned.

Example: Channels 1 → 6 are in the editor. You then select channels 10 → 16. An assignment to a controller will include channels 10 → 16 only. If you want to assign all channels in the editor, you must press **[ENTER]** before the assignment sequence.

Assigning channels with full range fading

Example: Assign channels 1 → 6 to controller 20.

Keypresses	Results/Comments
1. Select channel 1 → 6.	
2. Press **[ASSIGN]**	The message *Dim/Fade Key Expected* appears.
3. Press controller 20'S **[DIM]** or **[XF]** key	The LED of the assignment key is lit. *Grp* and the assignment mode appear on the LCD display.

Example: Channels 10 → 16 are selected in the editor. Channels 1 → 6 are active in the editor. Assign the editor contents to controller 6.

Keypresses	Results/Comments
1. Select channels 1 → 6.	
2. Select channels 10 → 16.	Channels 1 → 6 are displayed in white. Channels 10 → 16 are displayed in red.
3. Press **[ENTER]**	Channels 1 → 6 and Channels 10 → 16 are displayed in white.
4. Press **[ASSIGN]**	The message *Dim/Fade Key Expected* appears.
5. Press controller 20'S **[DIM]** or **[XF]** key	The LED of the assignment key is lit. *Grp* and the assignment mode appear on the LCD display.

Assigning channels with proscribed intensity

Example: Assign channel 8 to controller 20, limiting the output to 75%.

Keypresses	Results/Comments
1. Select channel 8.	
2. Press **[@]** or use the dimmer wheel.	If you choose to use the dimmer wheel, skip the next step.
3. Enter **75** on the numeric keypad.	
4. Press **[ASSIGN]**	The message *Dim/Fade Key Expected* appears.
5. Press controller 20's **[DIM]** or **[XF]** key	The LED of the assignment key is lit. When controller 20 reaches the limit of its travel, channel 8 is at 75%.

Adding channels to existing assignments

Example: Add channels 21 → 28 to the assignment on controller 20.

Keypresses	Results/Comments
1. Select channels 21 → 28	
2. Press **[ASSIGN]**	The message *Dim/Fade Key Expected* appears.
3. Press controller 20's **[DIM]** or **[XF]** key	

Removing channels from existing assignments

Example: Remove channel 8 from the assignment on controller 20.

Keypresses	Results/Comments
1. Select channel 8.	
2. Press **[ZERO]**	The intensity is forced to 0%.
3. Press **[ASSIGN]**	The message *Dim/Fade Key Expected* is displayed.
4. Press controller 20's **[DIM]** or **[XF]** key	Channel 8 is removed from the assignment on controller 20, leaving the rest of the assignment intact.

Assigning Scrollers

The keypresses used to assign scroller channels to Controllers influence the operation when fading the assignments. The System Parameters toggle *Jump on Fade yes/no* (see Chapter 26 – System Configuration) also influences behavior of scroller assignments.

The following table shows assignments in XF mode.

Assignment Sequence	Jump on Fade	Raise controller	Lower controller
[CHANNEL #] [FRAME] [XF]	Yes	Scroller jumps to the last frame.	The last frame remains as tracking.
	No	Scrolls from 1 to the last frame.	Scrolls back to frame 1.
[CHANNEL #] [FRAME] [#] [XF]	Yes	Jumps to the assigned frame.	The assigned frame remains as tracking.
	No	Scrolls to the assigned frame.	Scrolls back to frame 1.
[CHANNEL #] [@] [#] [FRAME] [#] [XF]	Yes	Dimmer fades up. Scroller jumps to the assigned frame.	Dimmer fades down. The assigned frame remains as tracking.
	No	Dimmer fades up. Scrolls to the assigned frame.	Dimmer fades down. The frame scrolls to frame 1.

The following table shows assignments in DIM mode.

In DIM mode the controller captures the scroller frame. The different assignment sequences affect the frame selection and what is in tracking after the assignment is freed from the controller.

Assignment Sequence	Jump on Fade	Frame/Intensity Assignment	Tracking after Free
[CHANNEL #] [FRAME] [#] [DIM]	Doesn't matter	Jumps to the highest frame.	The last frame
[CHANNEL #] [@] [#] [FRAME] [#] [DIM]	Doesn't matter	Channel is assigned in Fade mode. Scroller is assigned in Dim mode.	The last frame

Freeing Controller Assignments

You can free assignments from individual controllers, from a range of controllers, or from all the controllers at once.

Freeing selected assignments

Example: Release the assignment on controller 7.

Keypresses	Results/Comments
1. Press **[FREE]**	The message *Dim/Fade Key Expected* is displayed. *Free* is displayed in the command line.
2. Press **[XF]** (contr 7)	The assignment on controller 7 is released.

Freeing assignments on a range of controllers

Keypresses	Results/Comments
1. Press **[FREE]**	The message *Dim/Fade Key Expected* is displayed. *Free* is displayed in the command line.
2. Press **[→] [→]**	The assignments on all the 24 controllers are released.

Or

Keypresses	Results/Comments
1. Press **[FREE]**	The message *Dim/Fade Key Expected* is displayed. *Free* is displayed in the command line.
2. Press **[DIM]** or **[XF]** of the first controller in the range.	
3. Press →	
4. Press **[DIM]** or **[XF]** of the last controller in the range.	

Or

Keypresses	Results/Comments
1. Press and hold **[FREE]** or Lock **[FREE]** with a double hit.	The message *Dim/Fade Key Expected* is displayed. *Free* is displayed in the command line.
2. Press **[DIM]** or **[XF]** for controllers	
3. If you have locked **[FREE]** press to release the lock.	

Blacking Out Controller Output

You can instantly black out the output from a controller.

Keypresses	Results/Comments
1. Press **[DIM]** or **[XF]**	The LED of the key flashes and *BO* is displayed on a red field in the controller displays.
2. Re-instate the output by pressing the key again.	The LED stops flashing.

Blackout all controllers

You can blackout the entire controller output with one keypress.

Keypresses	Results/Comments
1. Press **[ALL OFF]** Access using **[SHIFT]**	The LEDs of the controller keys flash and *BO* is displayed on a red field in the controller displays.
2. Re-instate the output by pressing the key again.	

Examining Controller Assignments

You can examine individual controller assignments.

Keypresses	**Results/Comments**
1. Press **[EXAM 1]** or **[EXAM 2]** or **[SHIFT] [EXAM 1]**	The message *Dim/Fade Key Expected* appears.
2. Press **[DIM]** or **[XF]**	The exam display shows the controller being examined.
3. Press **+** or **—** to view the next or previous assignment.	

Type of Assignment	**What Is Displayed**
Grp	• The selected controller number. • The type of assignment: grp. • The channels and spots with all parameter, scroller, and intensity values.
Memory	• The selected controller • The type of assignment: MEM • The memory number • The Q List where the memory originates • Memory text • The contents of the assigned memory.
Spot Parameter	• The selected controller • This type of assignment is designated as *grp* in the Exam display. • The assigned parameter is displayed with the value FL.

Chasers

Memory ranges, loops, and entire Q Lists assigned to controllers are run as chasers. Chasers can be given an automatic Go command or you can manually step through the chaser.

Chaser assignments playback in Hard run mode or Soft run mode. Hard run mode bumps from step to step. Soft run mode fades from step to step. Each step is one memory.

[GO/DIM] and **[HOLD/XF]** control chasers. In this section they are referred to as **[GO]** and **[HOLD]**.

Chaser control

Key	Command
[GO/DIM]	Start a chaser. Pressing **[GO]** while a chaser is running causes a multi-fade to the next memory.
[HOLD/XF]	Press **[HOLD]** once and the chaser stops. Press **[HOLD]** again and the chaser is blacked out.
[SHIFT] [GO]	Manually step through the chaser. Each press advances one step.
Bump Button	Pressing and holding down the Bump Button starts the chaser. When the Bump Button is released the chaser stops running and is blacked out. When the controller assignment is a chaser is, **[LATCH]** does not affect the Bump Button.
[HARD]	Hard run mode bumps from step to step.
[SOFT]	Soft run mode fades from step to step according to the fade times for each memory in the chaser.
Controller handle	The level of the controller fader determines the dimmer level of the spots and channels participating in the chaser.

LED color codes

The state of the LEDs on the **[GO/DIM]** and **[HOLD/XF]** keys shows the chaser status.

Chaser Status	LEDs
Chaser assigned	The LEDs on the **[GO]** and **[HOLD]** keys flash slowly.
Chaser running	The LEDs on the **[GO]** and **[HOLD]** keys flash quickly.
Hold	The LED on the **[GO]** key flashes slowly.
Stepping	The LEDs behave as for chaser running.

Display and exam

The controller display on the X-fade Exam is expanded to accommodate the chaser assignments.

Chaser assignments appear as *CS* (for soft chasers) or *Ch* (for hard chasers). The assigned memory range or loop is displayed. Soft chaser fade times are also displayed. When the chaser is running a dynamic horizontal bar shows the fade progression. See figure 13-2.

A hard chase assignment is represented by a vertical bar. A soft chase assignment is represented by "stairs". When the chaser is running the display is dynamic, showing the current and next memories in red.

The chase rate appears in yellow. If the chase rate has been modified it appears in blue.

Assigning chasers

Assigning a memory range

Keypresses	Results/Comments
1. Select memory range for assignment as chaser.	
2. Press **[HARD]** or **[SOFT]**	
3. Press **[DIM]** or **[XF]**	The LEDs of both keys blink, indicating a chaser assignment. The first memory of the assigned range and the run mode are displayed on the LCD display.

Assigning a Loop

Keypresses	Results/Comments
1. Select the first memory of the loop.	
2. Press **[HARD]** or **[SOFT]**	
3. Press **[DIM]** or **[XF]**	The LEDs of both keys blink. The first memory of loop and run mode is displayed on the LCD display.

Changing an assignment from hard run mode to soft

You can change the run mode at any time, even while the chaser is running.

Keypresses	Results/Comments
1. Press **[SOFT]**	
2. Press **[DIM]** or **[XF]**	*CH* changes to *CS* on the LCD display and the X-Fade Exam display.

Changing an assignment from soft run mode to hard

Keypresses	Results/Comments
1. Press **[HARD]**	
2. Press **[DIM]** or **[XF]**	*Hard* replaces *Soft* on the LCD display.

Chaser rate

The chaser rate is determined by the fade time assignments for each memory included within the chaser.

In Soft run mode the fades between memories occur in the recorded memory times, preserving the integrity of all the time assignments - time-in, time-out, delay, wait- in, and wait-out.

Hard run mode bumps from memory to memory in 1/10 (one tenth) of the time-in assignment. Example: if the current step is memory 5 and memory 6 the time-in assignment of the incoming memory is 10 seconds, the time lapse between the bump from memory 5 to memory 6 is 1 second. .

The Chase rate of each chaser assignment can be modified and if desired stored.

Modifying the chaser rate

[DIM] and **[XF]** are used to change the chaser rate. Pressing **[DIM]** increases the chase rate. Pressing **[XF]** decreases the chase rate.

Cut and hold are the chase rate limits.

Keypresses	Results/Comments
1. Press **[RATE CHASE]**	The LCD of the key is lit.
2. Press and hold **[DIM]** or **[XF]**	The modified chase rate, in red on a blue field, is displayed in the controller area of the X-Fade Exam and on the LCD displays..

Quick modification sequences

Current Chase Rate	Keypresses	What happens
Memory time	**[SHIFT] [DIM]**	Bumps to Cut.
	[SHIFT] [XF]	Bumps to Hold
Cut	**[SHIFT] [XF]**	Bumps to memory
	[SHIFT] [XF] [XF]	Bumps to Hold
Hold	**[SHIFT] [DIM]**	Bumps to Memory
	[SHIFT] [DIM] [DIM]	Bumps to Cut.

Storing the modified chaser rate

Keypresses	Results/Comments
1. Follow the steps for modifying the chaser rate.	
2. Press **[STORE RATE]**	**The new rate is specific to the assigned memory loop or range.** In other words, the new stored rate is valid only when the same range of memories is assigned to any of the controllers.

Fading within chasers

Forcing a multifade

When a chaser is running on a controller, you can force a crossfade to a selected memory.

Example: The chaser is currently fading to memory 3; you want to fade to memory 10.

Keypresses	Results/Comments
1. Select memory 10.	
2. Press **[GO]**	A crossfade to memory 10 begins immediately. *Multi* is displayed on the Controller Display.

➢Note

Executing a multifade automatically changes the chaser assignment to a Q List assignment (See Chapter 16). The chaser continues running according to the Q List loop assignment.

Fading to a selected memory in an assigned chaser

Example: A chaser of memories 1 – 10 is assigned to controller 24. The currently active memory is memory 5. You want to fade to memory 9.

Keypresses	Results/Comments
1. Press **MEMORY 9**	
2. Press **GO** for controller 24.	

➢Note

If you select a memory outside of the assigned range, you receive an *Invalid Sequence* message.

Assigning a Q List

See Chapter 16 – Q-Lists.

Keypresses	Results/Comments
1. Select the Q List.	
4. Press **[HARD]** or **[SOFT]**	Select hard or soft run mode.
2. Press **[DIM]** or **[XF]**	The LEDs of both keys blink.

Joining chasers to respond to Go

The Join function allows you to start fades for multiple controller assignments (chasers or Q-Lists) with a single Go command.

Example: Join chaser assignments on controllers 20, 22, and 24.

Keypresses	Results/Comments
1. Press **[JOIN]**	The LED on the key is lit and all the other controller LEDs are off.
2. Press **[DIM]** or **[XF]** for each chaser assignment to be included in the common Go.	The LEDs of both of the keys are on.
3. Press **[JOIN]**	The LED of the key is extinguished. The run mode icons for joined chasers are displayed in blue on both controller displays.

Releasing joined chasers

Keypresses	Results/Comments
1. Press **[JOIN]**	The LED on the key is lit and all the controller LEDs are off.
2. Press **[DIM]** or **[XF]** for each chaser assignment to be included in the common Go.	The LEDs of both of the keys are extinguished.
3. Press **[JOIN]**	The LED of the key is extinguished.

Assigning Effects

Effects are assigned as grps or memories. They are represented in the LCD display as *grp* or *Mem.*

Effect Rate control is identical to Rate Control for chasers.

Fading with LTP

When Sabre is working in LTP mode and the controllers are set to the same control priority, you can use this function to fade from look to look. For more information on LTP see Chapter 15 – Control Priority.

Example: Assign memories 1 – 3 to fade on controllers 5 – 7.

Keypresses	**Results/Comments**
1. Select a memory 1	
2. Press **[SOFT]**	
3. Assign to controller 5.	The memory is assigned. The LEDs for both keys blink.
4. Select a memory 2	
5. Press **[SOFT]**	
6. Assign to controller 6.	
7. Select a memory 3	
8. Press **[SOFT]**	
9. Assign to controller 7.	
10. Press **[GO]** for controller 6	Memory 2 fades in.
11. Press **[GO]** for controller 7	A crossfade occurs from memory 2 to memory 3.
12. Press **[GO]** for controller 6	A crossfade occurs from memory 3 to memory 2.
13. Press **[GO]** for controller 5	A crossfade occurs from memory 2 to memory 1.

➢Note

If the dimmer parameter is included in the memories the controller level must be off its bottom end-stop.

Submasters

There are 2 inhibitive Submasters on Sabre's panel, located next to the General Master.

Channels and spots can be assigned to these Submasters. When the channels or spots assigned to a Submaster are present in other active assignments, the level of the Submaster fader determines their dimmer output level.

Through the System Parameters menu, the Submasters can be assigned to submaster crossfaders A/B and C/D.

Assigning channels and spots to a submaster

A range, a group, or single channels can be assigned to a submaster.

Example: Assign channels 1, 3, and spot 5 to Submaster 2.

Keypresses	Results/Comments
1. Select channel 1	
2. Select channel 3	
3. Select spot 5	
4. Press **[ASSIGN]**	The message *Dim/Fade Key Expected* is displayed.
5. Press **[S2]**	*S2 - # (all)* is displayed on a red field. The number is the submaster level. *All* means that the Submaster level determines the output level of the assigned spots and channels regardless of other output source (A/B, controllers, editor, etc.) levels.

Releasing an assignment

Example: Release the assignment made in the example above.

Keypresses	Results/Comments
1. Press **[FREE]**	
2. Press **[S2]**	The Submaster assignment display disappears from the screen.

Submastering A/B and C/D

When the Submasters are assigned over the A/B and C/D crossfaders, the fader level of the Submaster determines the output level of the assignments on the crossfaders.

The submaster assignment display shows the assignments on a color-coded field. The colors are identical to the Stage display colors for he crossfades; light blue for A/B and green for C/D.

Example: Assign Submaster 1 to control A/B.

Keypresses	**Results/Comments**
1. Press **[MENU]**	The menu list is displayed.
2. Enter the System Parameters menu.	
3. Move the cursor to highlight *Submaster #1 Control*	
4. Press **[ENTER]**	The highlight is now red.
5. Press **F1 A/B**	The Submaster assignment is displayed at the top of the screen on a light blue field.

Canceling Submaster control of a crossfader

Keypresses	**Results/Comments**
1. Press **[MENU]**	The menu list is displayed.
2. Enter the System Parameters menu.	
3. Move the cursor to highlight *Submaster #1 Control*	
4. Press **[ENTER]**	The highlight is now red.
5. Press **F5 ALL**	The Submaster assignment disappears from the display.

Joystick

You can assign spots to the Joystick for pan and tilt control. Joystick control overrides all other control devices.

Assigning spots

Keypresses	Results/Comments
1. Select spots	
2. Press **[ASSIGN JS]**	The x and y values of spots under Joystick control are displayed in black,

Freeing spots

Keypresses	Results/Comments
1. Press **[FREE]**	
2. Press **[ASSIGN JS]**	The spots are freed from Joystick control. X and Y jump to the next device in control priority stack. If the spots are not assigned to a playback device they jump to tracking.

CHAPTER 14
Q-KEYS

Included in this chapter are:

Overview

Q-Keys offer an additional playback device. Memories and groups assigned to Q-Keys can be faded in additive or crossfade modes. **[PILE ON]** controls the playback mode.

Q-Keys are located on the Numeric Soft Keys in Q-Key mode. One hundred Q-Keys are available.

The default control priority for Q-Keys is after controllers (or Submaster Wing) and before C/D. Of course, you can change the default control priority at any time.

Q-Keys are stored in Snaps. The second page of the Snap exam shows the Q-Key assignments.

Assignments to Q-Keys

In Q-Key mode, up to 100 memories or groups can be assigned to the Numeric Soft keys. Memories or groups that are assigned to Q-Keys fade up and down.

Group assignments include any channels and spots that are selected (appear in red) in the editor.

New assignments bump out previous assignments in most cases. If the current assignment is a memory, assigning a new memory or a group bumps out the current assignment. If the current memory is a group, assigning a memory bumps out the current assignment. The exception to the rule is: if the current assignment is a grp, assigning spot/s and channel/s adds the new assignment to the current grp assignment.

Assigning memories

Single memories are assigned to a single Q-Keys. Groups of memories and ranges of memories can be assigned to a sequential range of Q-Keys.

Assigning a memory

Example: Assign memory 20 to Q-Key (Numeric Soft Key) 1.

Keypresses	Results/Comments
1. Select memory 20.	
2. Press **[ASSIGN]**	
3. Press **[Q-KEY]**	Skip this step if the NSK mode is Q-Key.
4. Press NSK 01	The key's LED lights to show that an assignment is present.

Assigning a group of memories

Example: Assign memories 20, 24, 26 to Q-Keys (Numeric Soft key) 1, 2, and 3.

Keypresses	**Results/Comments**
1. Select memory 20.	
2. Select memory 24.	The memory List is displayed and the selected memory numbers appear on a red field.
3. Select memory 26.	
4. Press **[ASSIGN]**	
5. Press **[Q-KEY]**	Skip this step if the NSK mode is Q-Key.
6. Press NSK 01	The key 's LED lights to show that an assignment is present. Memory 20 is assigned to Q-Key 1, memory 24 to Q-Key 2, and memory 26 to Q-Key 3.

Assigning a range of memories

Example: Assign memories 20 - 29 to Q-Keys (Numeric Soft key) 10 - 20.

Keypresses	**Results/Comments**
1. Select memory 20	
2. Press **[→]**	
3. Select memory 29	
4. Press **[ASSIGN]**	
5. Press **[Q-KEY]**	Skip this step if the NSK mode is Q-Key.
6. Press NSK 10	The LED of the keys lights to show that an assignment is present. Memory 20 is assigned to Q-Key 10, memory 21 to Q-Key 11, memory 22 to Q-Key 12, and so on, and finally memory 29 to Q-Key 19.

Assigning an unspecified range of memories

You can assign the first 100 memories to the Q-Keys. The assignments are executed in sequential order. Example: You have memories 1, 1.5, 1.6, 2, 2.5, 3, 7, 7.1.... You want to assign these memories sequentially starting from Q-Key 1. Using the key sequence described below, the Q-Key assignments will be:

Memory	**to Q-Key**	**Memory**	**to Q-Key**
1	01	2.5	05
1.5	02	3	06
1.6	03	7	07
2	04	7.1	09

You can also select a starting memory number and Sabre assigns the next memories. The number of memories assigned depends upon the first NSK selection. Example: You select an unspecified range of memories beginning from memory 20 and select NSK 40. Sabre assigns the next 59 memories, resulting in assignments on Q-Keys 40 - 100.

Keypresses	Results/Comments
1. Press **[MEMORY]**	
2. Press **[→]**	Sabre selects the first 100 memories starting at the first memory.
3. Press **[ASSIGN]**	
4. Press **[Q-KEY]**	Skip this step if the NSK mode is Q-Key.
5. Press NSK 01	The keys' LED light to show that the assignment is present.

Assigning groups

Groups that are assigned to Q-Keys can include spots, channels, and spot parameters. When you assign channels to Q-Keys, you must give the channels intensity values before assignment. Spots must be given dimmer parameter and/or parameter values and spot parameters must be given parameter values before assigning them to Q-Keys.

Assigning a group of channels

Example: Assign channel 1 @ 50 % and channel 8 @ 80% to Q-Key (NSK) 10.

Keypresses	Results/Comments
1. Select channel 1.	
2. Assign intensity.	
3. Select channel 8.	
4. Assign intensity.	
5. Press **[ASSIGN]**	The message *Dim/XF Key Expected* is displayed.
6. Press **[Q-KEY]**	Skip this step if the NSK mode is Q-Key.
7. Press NSK 10	The LED of the key lights to show that an assignment is present.

Adding a channel to an assignment

You can add a channel to a group assignment.

Example: add channel 10 to the previous assignment.

Keypresses	Results/Comments
1. Select channel 10.	
2. Assign intensity.	
3. Press **[ASSIGN]**	The message *Dim/XF Key Expected* is displayed.
4. Press **[Q-KEY]**	Skip this step if the NSK mode is Q-Key.
5. Press NSK 10	Channel 10 is added to the assignment.

Assigning a range of spots

A range of spots, a group of spots, or single spots can be assigned to Q-Keys.

Example: Assign spots 8 - 10 to Q-Key 12

Keypresses	Results/Comments
1. Select spots 8 - 10.	
2. Assign parameter values.	
3. Press **[ASSIGN]**	The message *Dim/XF Key Expected* is displayed.
4. Press **[Q-KEY]**	Skip this step if the NSK mode is Q-Key.
5. Press NSK 12	The key's LED lights indicating that an assignment is present.

Assigning a range of channels

A range of channels, a group of channels, or single channels can be assigned to Q-Keys.

Example: Assign channels 8 - 10 to Q-Key 12

Keypresses	Results/Comments
1. Select channels 8 - 10.	
2. Assign intensity.	
3. Press **[ASSIGN]**	The message *Dim/XF Key Expected* is displayed.
4. Press **[Q-KEY]**	Skip this step if the NSK mode is Q-Key.
5. Press NSK 12	The key's LED lights indicating that an assignment is present.

Freeing Q-Keys

Keypresses	Results/Comments
1. Press **[FREE]**	The message *Dim/XF Key Expected* is displayed.
2. Press **[Q-KEY]**	Skip this step if the NSK mode is Q-Key.
3. Press the Q-Key you wan to free.	The key's LED goes out.
4. Press **[CLEAR]**	

Playing Back Q-Key Assignments

Playback Q-Key assignments by pressing, an NSK in Q-Key mode. This initiates a fade of the Q-Key assignment.

To fade Q-Key assignments:

- Press on the Q-Key to initiate a fade from 0% to Full. The fade times are according to recorded memory time.
- When the Q-Key assignment is at Full, pressing the key fades the assignment to 0%.
- Pressing a key while a fade is in progress reverses the direction of the fade.

Enabling/disabling Pile On

[PILE ON] determines the playback mode for Q-Keys. It toggles to enable or disable the additive (Pile On) playback mode.

When **[PILE ON]** is enabled (LED on), Q-Keys work in additive mode. Each press fades up the selected assignment, adding it to the currently active Q-Keys. Example: the assignment on Q-Key 12 is currently active on stage. Press Q-Key 25. The assignment on Q-Key 25 fades in. Now both the assignments on Q-Key 12 and 25 are on stage.

When **[PILE ON]** is disabled (LED off) only one Q-Key assignment can be active. Each time you press a Q-Key, it initiates a crossfade between the incoming Q-Key assignment and the Q-Key assignment that is currently on stage. Example: The assignment on Q-Key 12 is currently on stage. Press Q-Key 25. The assignment on 25 fades in, while the assignment on 12 fades out.

When there are more than one Q-Key assignment already active disabling **[PILE ON]**, the rules of behavior are as follows:

- If a number of Q-Keys are active and the next Q-Key pressed is one of the currently active Q-Keys, the memory or grp assigned will remain on stage and all the other active Q-Key output will fade out.
- If the Q-Key pressed is not active, the assignment will fade in and all the currently active Q-Key output will fade out.

Q-Keys Display

Access the Q-Key display by pressing **[PILE ON] [EXAM 1]** or **[EXAM 2]** or **[EXAM 3]** (the Q-Key Exam may be displayed any monitor).

Q-Keys containing an assignment are displayed in red.

A memory assignment is represented by the memory number.

A group assignment is represented by *grp*.

When **[PILE ON]** is disabled, it is represented, both in the Q-Key Exam and on the playback display by one circle.

When **[PILE ON]** is enabled, it is represented by a three-circle symbol.

The lower area of the screen, labeled "active on stage", shows the active Q-Keys in the order in which they were faded in. This is a dynamic display that reflects any changes on-stage.

Individual Q-Key assignments can be examined. This exam is identical to the controller assignment exam. **[EXAM 1]** or **[EXAM 2]** or **[EXAM 2] [NSK]** (select soft key).

Output originating from the Q-Keys is displayed in bright blue.

CHAPTER 15
CONTROL PRIORITY

Included in this chapter:

Control Priority

The control priority of the playback devices is determined by the current Device Priority Map, which imposes a control hierarchy, or by LTP (Latest Takes Precedence) operation.

At start up, the control priority is the default control priority.

Alternate Priority Maps are defined in the Device Priority menu.

Default Control Priority

The default control priority imposes a rigid hierarchy on the playback devices.

The Priority Order from the strongest to the weakest:

1. Editor
2. DMX Input
3. Joystick
4. Controller 24
5. Controller 23
6. Controller 22
7. Controller 21
8. Controller 20
9. Controller 19
10. Controller 18
11. Controller 17
12. Controller 16
13. Controller 15
14. Controller 14
15. Controller 13
16. Controller 12
17. Controller 11
18. Controller 10
19. Controller 9
20. Controller 8
21. Controller 7
22. Controller 6
23. Controller 5
24. Controller 4
25. Controller 3
26. Controller 2
27. Controller 1
28. Submaster Wing (if present)
29. Q-Keys
30. C/D crossfader
31. A/B crossfader

Here is an example of how the default priorities influence the playback.

Mission:
On the fly, change the gobo or color output of the spots participating in a chaser using gobo assignments on the controllers.

Assignments:
A memory loop, assigned to C/D, contains Spot 1 whose gobo parameter value is 5.

Spot 1 gobo value 3 is assigned to controller 1.

Spot 1 gobo value 6 is assigned to controller 8.

Playback:
Press **[GO]** starting the loop on C/D.

Now raise controller 8; the gobo changes to gobo 6, but the positions do not change.

Now raise controller 1; the gobo output does not change because controller 8 is 'stronger' than controller 1.

Bring down controller 8 and controller 1 is now in charge of the gobo.

Throughout all this controller raising and lowering only the gobo value changes because the gobo is the only parameter assigned to the controllers. All other parameter values for spot 1 derive from C/D.

Exploiting this very simple control feature gives a whole new look to a chaser. This allows you to use the same position chaser and create many different looks.

Remember - the controllers crossfade from the current stage output!

Although this may seem very confusing now, it will become clearer as you experiment with the console and explore its many control possibilities.

Device Priority Menu

The Device Priority menu is menu 22.

The Device Priority menu provides a tool to customize the control priority of playback devices.

There are 2 basic options for control priority assignments:

1. Maintain a strict control priority, but customize the hierarchy. This is done by new priority assignments.
2. LTP (Latest Takes Precedence). LTP is an option when all or a group of the playback devices are assigned the same control priority code.

The default priority assignments stack the control priority as described above. See Priority Order page, 15-2.

Changing the control priority of a playback device is accomplished by assigning a priority code to the device. The priority code determines the device’s place in the Control Priority hierarchy. The designation of # 1 denotes the most dominant playback device. The list continues in descending order of control priority.

There are two areas displayed in the Device Priority menu - the Playback Device control Priority and the Editor display.

The Playback Devices are shown in the diagram on the left; each row represents a group of tools. The priority code is displayed on a light gray field under the playback device name. The priority code determines in which position, in the control hierarchy, the playback source is placed. All editing is done on this display. The priority code corresponds to the display on the right, which is labeled "editor".

The editor display always shows the last recorded priority configuration.

Changing the playback device priority

You can change the priority of individual playback devices, while preserving a rigid control hierarchy. To do this change the position a playback device occupies in the hierarchy by assigning the playback device a new priority code.

Edited priority maps can be stored to the stage, which means that they are effective immediately. They can also be stored for later use if you use the Store Map option.

Activating a new priority map immediately

Keypresses	Results/Comments
1. Press **F1 Prio Editor**	The Priorities display is now active.
2. Use the arrow keys.	Highlight the playback device whose priority you want to change.
3. Enter a new priority number.	Enter a new priority code between 1 - 99. This indicates the playback device's position in the priority hierarchy. It is expedient to leave gaps between numbers, so there will be room for inserts if needed.
4. Press **F1 Store to Stage**	Since this affects the live function of the console, you are asked for confirmation. The confirmation prompt: *Are You Sure?* appears.
5. Press **F1 Yes**	The new priority hierarchy becomes effective immediately.

Storing a new priority map for future use

Keypresses	Results/Comments
1. Press **F1 Prio Editor**	The Priorities display is now active.
2. Use the arrow keys.	Highlight the playback device that whose priority you want to change.
3. Select a new priority number.	Enter a new priority code between 1 - 99. This indicates the playback device's position in the priority hierarchy. It is expedient to leave gaps between numbers, so there will be room for inserts if needed.
4. Press **F5 Store Map**.	The system prompts for a map number.
5. Enter a map number on the keypad.	
6. Press **F1 Store**	The edited map is stored and accessible via the priority maps option. A priority map can also be retrieved while in the editor.

Assigning the same priority code - LTP

The LTP (Latest Takes Precedence) control priority applies to any playback devices having the same priority code.

The last playback device operated determines the priority. An assignment to the playback tool, a go command, a fader/controller being moved from its 0% limit, and using a special function to bump a playback tool to highest priority are all considered an operation of a playback device.

LTP assignment methods include:

1. Assigning the same priority code to two or more playback devices using the procedure described above.
2. Assigning the same priority code to groups of playback devices.
3. Assigning all the same priority code to all of the playback devices.

Assigning the same priority code to all playback devices

Keypresses	Results/Comments
1. Press **F3 LTP All**	Choose this option to set all the playback devices to the same control priority.
2. Select a priority code number.	Answer the prompt *Set All To #:* Enter a number from 1 - 99 (priority code).
3. Press **F1 Enter**	
4. Select either the **Store to Stage** option or the **Store to Map** option.	If you choose the Store to Stage option you are asked for confirmation. If you choose the Store to Map option, the system prompts for a map number.
5. Enter a map number on the keypad.	Skip this step if you are not storing a priority map
6. Press **F1 Yes** to confirm Store to Stage or **F1 Store** if storing a map.	If you have made a mistake, press **F6 Cancel**. This returns to the previous level.

Assigning the same priority code to a group of devices

The display of playback devices is arranged in rows. Each row is considered a group. Example: Submaster Wing, Joystick, A/B, C/D, Q Keys, and DMX Input (if the system is configured for DMX input) are a group.

Keypresses	Results/Comments
1. Press **F4 LTP Group**	Choose this option to assign a group of playback tools at the same control priority.
2. Use the arrows to position the cursor on a group.	Sabre prompts *Set Group To #:*
3. Enter a number from 1 - 99 (priority code).	
4. Press **F1 Enter**	
5. Press **F1 Store To Stage**	Since this affects the live function of the console, you are asked for confirmation. The confirmation prompt: *Are You Sure?* appears.
6. Press **F1 Yes**	The new priority hierarchy becomes effective immediately.

Or

Replace steps 5 and 6 with the following:

5. Press **F5 Store Map**	The system prompts for a map number.
6. Select a number.	
7. Press **F1 Store**	The edited map is stored and accessible via the priority maps option.

Reassigning the default map

This option returns to the default priority assignment.

Keypresses	**Results/Comments**
1. Press **F2 Default Map**	The prompt asks: *Return To Default Map?*
2. Press **F1 Yes**	The default priority hierarchy becomes effective immediately.

Editing Priority maps

Priority maps that have been stored, either via menu or via the editor can be edited under the priority map option.

When the **F5 Priority Maps** option is selected, a list of the recorded control priority configurations is displayed in the middle of the screen, flanked on the left by the configuration selected from the map list and on the right the editor (last recorded priority configuration). The select map is highlighted in red.

Keypresses	**Results/Comments**
1. Press **F5 Priority Maps**	Select the priority map option.
2. Use the arrow keys	Select the map you want to edit.
3. Press **F1 Edit**	The priority editing screen is displayed.
4. Select one of the editing functions	Proceed as described above and store to stage or to map.

Erasing priority maps

Keypresses	**Results/Comments**
1. Press **F5 Priority Maps**	Select the priority map option.
2. Use the arrow keys to select a map.	
3. Press **F4 Erase**	A confirmation request appears in the prompt.
4. Press **F1 Yes**	The map highlighted in red, on the map list, is erased and no longer displayed.

Working with LTP

The LTP (Latest Takes Precedence) control priority is applied to playback devices having the same priority code. The control priority is determined by the last playback device operated.

Under LTP, the current priority stack is fluid since it changes with each go command, assignment, or manual fader movement, fading in an assignment.

The current priority stack is displayed on the X-Fade Exam. It appears in light blue, next to the priority code.

Example: All controllers have been assigned the identical priority code.
There is a memory active on controller 1. Controller 1, controller 5, and controller 8 have memory assignments that contain spots in common. All controllers are at 0%. Raise controller 1 to full. It is the highest control priority; number 1 in the priority stack.
Raise controller 8. The parameter output from controller 8 overrides that of controller 1. Now controller 8 is first in the priority line up and controller 1 is bumped to second place.
Now raise controller 5. Controller 5 is now first in the line up, controller 8 is bumped to second, and controller 1 to third place.
Take controller 1 (third in line) to 0 and bring it up again. Now controller 1 is first in line again.

Enabling LTP

When the LTP function is ON, the console behaves as is described in the example above.

Keypresses	Results/Comments
1. Press **[PRIORITY]**	*Prio* is displayed in the command line.
2. Press **[+]**	*LTP ON* is displayed on a gray field under the controllers on the playback display.

Disabling LTP

If LTP is Off the priority line up remains as it was when LTP was turned off.

Example: using the example above, assume that you turned off LTP after raising controller 5. Until LTP is turned back on, the priority line up for controllers is controller 5 - 1st, controller 8 - 2nd, controller 1 - 3rd.

Keypresses	Results/Comments
1. Press **[PRIO]**	*Prio* is displayed in the command line.
2. Press **[—]**	*LTP OFF* is displayed on a gray field under the controller display on the playback display. The LED of the **[PRIO]** button is extinguished.

Changing the priority stack during playback

You may want to bump a playback device to the head of the priority stack. When you bump a playback device to the top of the priority stack it becomes immediately active.

This function can only be used on playback devices that have the same priority code.

Example: Spot 1 is active on A, controller 1, and controller 20. The priority stack is: current output is controlled by controller 1, next in line is controller 20, and then crossfade A. You want A to the active output. You can bump A to the top of the priority stack. The rest of the priority stack is updated also.

PLAYBACK DEVICE	CURRENT PRIORITY STACK	UPDATED PRIORITY STACK AFTER BUMP
Controller 1	1	2
Controller 20	2	3
Crossfader A	3	1

Bumping A/B or C/D to top priority

This action does not initiate a crossfade on A/B; A/B is bumped to the top of the priority stack. The assignment on A/B is immediately active on stage.

Keypresses	Results/Comments
1. Press **[SHIFT] [GO]**	The assignment on A/B or C/D is immediately active.

Bumping a controller to first priority

Keypresses	Results/Comments
1. Press **[SHIFT]** and a **[Bump Button]**	The controller assignment is immediately active.

Storing a current priority configuration

You can record the priority hierarchy, created during playback when using the LTP mode or bumping playback devices to the head of the priority stack, as a priority map.

Example: You were working in LTP mode and you want to record the current priority stack as a Priority map.

Keypresses	Results/Comments
1. Press **[PRIO]**	
2. Enter a number on the keypad.	Enter a map number for the current control priority configuration.
3. Press **[STORE]**	Record the current control priority assignments. This new priority map appears in the list of priority maps in the Device Priority menu.

Switching the Current Priority Map

You can switch to a different priority map at any time.

Keypresses	Results/Comments
1. Press **[PRIO]**	
2. Enter the priority map number on the keypad.	
3. Press **[ENTER]**	The system now operates according to the selected playback priority map.

CHAPTER 16
Q-LISTS

This chapter includes:

Overview

Q-Lists are independent entities. Each of the 100 Q-Lists can contain memories numbered from 0.1 to 999.9. Q-Lists can be assigned to controllers, the A/B crossfader, and the C/D crossfader.

There are two **[Q-LIST]** keys on the console panel. One controls the NSK mode; the other **[Q-LIST]** key also allows Q-List selections

The Numeric Soft keys work under Q-List mode.

Use the Numeric Soft keys to:

- Select Q-Lists
- Change to default Q-List of the system
- Store the editor group to Q-Lists other than the current Q-List.

All memories are stored to the current default Q-List unless otherwise instructed. The current default Q-List is displayed in the lower right corner on CRT 1.

Automatic, manual, and finite loops can be assigned to an entire Q-List. Memory loops are supported within Q-Lists.

Storing Memories in Q-Lists

Storing the editor group as a memory always stores to the current default Q-List. If the current default Q-List is 5, the memory is stored in Q-List 5. .

Using the NSKs in the Q-List mode, the editor group can be stored to a Q-List other than the default Q-List.

Memories stored in this fashion are stored as the last memory in the selected Q-List + the increment for +Store in the System parameters menu.

Example: If the last memory number in the Q-List is 100 and the +1 Store increment in the System Parameters menu is 1, the memory is stored as memory 101. If the +1 Store increment is 5, the memory is stored as memory 105.

Keypresses	**Results/Comments**
1. Select and edit spots and channels.	
2. Press **[ASSIGN]**	
3. Press **[Q-LIST]** NSK mode	If the NSK mode is Q-List, skip this step.
4. Press the NSK.	The message *Memory # Stored* is displayed.
5. Press **[ASSIGN]** and an NSK to continue storing to more Q-Lists.	

Copying from Q-List to Q-List

You can copy memories between Q-Lists either in the editor or in the Memory Operations menu. .

Copying in the editor

The example below uses the NSKs for Q-List selection. If you choose to use the numeric keypad, enter a number for steps 2 and 7.

Example: Copy memories 7 from Q-List 3 to Q-List 1 and Q-List 2. Memory 12 is the last memory in Q-List 1. Memory 7 is the last memory in Q-List 2.

Keypresses	**Results/Comments**
1. Press **[Q-LIST]**	Skip this step if the NSK mode is Q-List.
2. Press NSK 03	*Q-List 3* appears in the command line.
3. Select memory 7	
4. Press **[ENTER]**	Memory 7 (from Q-List 3) is now active in the editor and on-stage.
5. Press **[ASSIGN]**	
6. Press **[Q-LIST]**	
7. Press NSK 01	The message *Memory 13 Stored* is displayed. The editor does not clear.
8. Press **[ASSIGN]**	
9. Press **[Q-LIST]**	
10. Press NSK 02	The message *Memory 8 Stored* is displayed.

Examining Q-Lists

The general Q-List display shows a numerical list of the existing Q-Lists. .

The Q-List exam display shows the loop assignments for each Q-List, the number and range of memories, the type of loop assigned, and the time. The time is the total playback time (taking into account time-in and delay assignments) of all of the memories in the Q-List.

The red asterisk (*) preceding a Q-List denotes the current default Q-List.

Keypresses	**Results/Comments**
1. Press either **[Q-LIST** key	
2. Press **[EXAM 1]** or **[EXAM 2]** or **[EXAM 3]**	The Q-Lists are displayed.

Assigning Loops to Q-Lists

Entire Q-Lists accept loop assignments. You can assign a loop to run from the first to the last memory of the Q-List. Loop assignments to Q-Lists are effective only when a Q-List is assigned to a controller.

The default loop assignment to Q-Lists is manual. Each memory in the Q-List waits for a Go command. When you reach the last memory in the Q-List, pressing Go crossfades to the first memory in the Q-List.

The same key sequences for loop assignments to a range of memories are used to assign loop types to Q-Lists.

Loops embedded in the Q-List playback normally.

Assigning automatic Loops to Q-Lists

A Q-List that has an automatic loop assignment automatically crossfades to all of the memories contained in the Q-List. When the crossfade to the last memory in the Q-List is completed, a crossfade to the first memory of the Q-List begins.

Example: Assign an automatic loop to Q-List 3.

Keypresses	Results/Comments
1. Press either **[Q-LIST]** key	
2. Enter 3 on the keypad or press NSK 03.	
3. Press **[LOOP]**	
4. Press **[STORE]**	*Q-List 3 Stored* is displayed.

Assigning manual Loops to Q-Lists

Example: Assign a manual loop to Q-List 3.

Each crossfade requires a Go command. When the crossfade to the last memory in the Q-List is completed, pressing Go initiates a crossfade to the first memory of the Q-List.

Keypresses	Results/Comments
1. Press either **[Q-LIST]** key	
2. Enter 3 on the keypad or press NSK 03.	
3. Press **[LOOP] [LOOP]**	
4. Press **[STORE]**	*Q-List 3 Stored* is displayed.

Assigning finite Loops to Q-Lists

Example: Assign Q-List 3 to loop 5 times. Playing back Q-List 3 loops through all of the memories in the Q-List 3 times and then stops.

Keypresses	**Results/Comments**
1. Press either **[Q-LIST]** key	
2. Enter 3 or press NSK 03.	
3. Press **[LOOP]**	
4. Press 5 on the numeric keypad.	
5. Press **[STORE]**	*Q-List 3 Stored* is displayed.

Changing the Default Q-List

The default Q-List of the system is Q-List 1. The default Q-List can be changed in the editor, using the numeric keypad or the Numeric Soft keys, and in the Memory Operations menu. All memories stored are added to the current default Q-List. Memories can also be added to other Q-Lists. See Storing Memories in Q-Lists, page 16-2.

Using the numeric keypad

Keypresses	**Results/Comments**
1. Press **[Q-LIST]**	
2. Enter number on the keypad.	
3. Press **[ENTER]**	The current default Q-List number and the last memory of the Q-List are displayed.

Using the Numeric Soft Keys in Q-List mode

Example: The default Q-List is Q-List 1. Change the default to Q-List 2.

Keypresses	**Results/Comments**
1. Press **[Q-LIST]** mode key	Skip this step if the NSK mode is Q-List.
2. Press NSK 02 twice	*Q2* is displayed at the right of the command line.

Erasing Q-Lists

Erase Q-Lists by erasing all of the memories in the Q-List.

Example: Erase Q-List 5 that has memories 1 –10.

Keypresses	Results/Comments
1. Select Q-List 5	
2. Select memories 1 → 10	
3. Press **[ERASE]**	*Are you Sure?* is displayed.
4. Press **[ERASE]** again.	Q-List 5 is erased.

Playing back Q-Lists

Q-Lists can be assigned to controllers, A/B, and C/D.

The playback operation for Q-Lists assigned to controllers is identical to chasers. See Chapter 13 – Controllers/Chasers and Submasters.

Assigning a Q-List

Keypresses	Results/Comments
1. Select the Q-List.	
1. Press **[HARD]** or **[SOFT]**	Select hard or soft run mode.
2. Press **[DIM]** or **[XF]**	The LEDs of both keys blink. The first memory of the assigned Q-List and run mode are displayed on the LCD display.

Fading to a selected memory in a Q-List

Example: A Q-List containing memories 1 – 10 is assigned to a controller. The currently active memory is memory 5. You want to fade to memory 9.

Keypresses	Results/Comments
1. Select memory 9	
2. Press **[GO]** for the controller.	A fade takes place to memory 9 in the assigned Q-List.

Fading to a memory in the default Q-List

Example: Fade to memory 5 Q-List 5 on controller 24

Keypresses	**Results/Comments**
1. Select memory 5	
2. Press **[Q-LIST]**	
3. Press **[GO]** for controller.	The fade to memory 5 from the default Q-List overrides any previous assignment on the controller.

Fading to a memory from a selected Q-List

Example: You want to fade to memory 9 from Q-List 20.

Keypresses	**Results/Comments**
1. Select Q-List 20.	
2. Select memory 9	
3. Press **[Q-LIST]**	
4. Press **[GO]** for controller.	The fade to memory 20 from Q-List 20 overrides any previous assignment on the controller.

CHAPTER 17
GROUPS

This chapter contains:

Overview

A Group is a collection of frequently used selections of spots and channels. They are used for quick editing selections.

Groups can contain spots only, channels only, or spots and channels.

When a Group is selected the elements in the Group are displayed in red on the spot or channel displays. If the selection includes spots the Parameter Wheel s' display shows the parameter assignments. When *Mix Editing* is toggled to Yes, the Parameter Wheel assignments for the last type of spot in the selection are displayed.

Group selections can be used with the **[EXCEPT]** key to exclude spots, channels, or other Groups.

Groups are accessed via the Numeric Soft keys or using the numeric keypad. The LEDs of the Numeric Soft keys with Group assignments are lit when the NSK default or temporary mode is Group.

Groups are recorded in the show file.

Programming Groups

Groups can be programmed blind or you can assign the spots and channels present editor as a Group.

Programming Groups in blind mode

Program a Group by assigning spots/channels to a Numeric Soft Key. Only spots/channels selected in the editor, displayed in red, are included in the Group.

Keypresses	Results/Comments
1. Select spots: **[SPOT] [# → #]**	Select a range or a Group of spots and/or channels.
2. Press **[ASSIGN]**	The command line reads: *Assign*.
3. Press **[GROUP]**	Skip this step if the NSK mode is Group.
4. Press an NSK	The LED on selected NSK is lit.

Programming Groups using current lighting state

You can create a Group including all the spots/channels currently active or use the Special Selection functions to select only some of the spots/channels participating in the stage picture.

Keypresses	Results/Comments
1. Press **[SPOT]**	
2. Press **[→] [→]**	The command line: *Spot from editor & stage*.
3. Press **[ASSIGN]**	The command line reads: *Assign*.
4. Press **[GROUP]**	Skip this step if the NSK mode is Group.
5. Press an NSK	The LED on selected NSK is lit.

You can include only part of the spots/channels participating in the stage picture in the Group.

Example: the stage picture consists of spots 5 - 12. You want to exclude spot 8 from the Group 02.

Keypresses	Results/Comments
1. Press **[SPOT]**	
2. Press **[→] [→]**	The command line reads: *Spot from editor & stage.*
3. Press **[EXCEPT] [8]**	Spot 8 will not be included in the Group.
4. Press **[ASSIGN]**	The command line reads: *Assign*.
5. Press **[GROUP]**	Skip this step if the NSK mode is Group.
6. Press NSK 02	The LED on selected NSK is lit.

Programming an empty Group

You can also program empty Groups. These Groups can be labeled and then filled in later.

Example: Program an empty Group on NSK 12.

Keypresses	Results/Comments
1. Press **[ASSIGN]**	The command line reads: *Assign*.
2. Press **[GROUP]**	Skip this step if the NSK mode is Group.
3. Press NSK 12	The selected NSK LED is lit.
4. Press NSK 12 again.	
5. Press **[TEXT]**	
6. Type the text on the keyboard or press **[ALPHA]** and type on the NSKs in the Alphanumeric mode.	
7. Press **[STORE]**	The first 8 characters of the text appear on the NSK Exam display. The full text appears on the individual Group exams.

Modifying Groups

Adding spots and channels to Groups

Spots and channels can be easily added to existing Groups.

Example: Add spots 7-9 to Group 01.

Keypresses	Results/Comments
1. Select spots 7 → 9	
2. Press **[ASSIGN]**	The command line reads: *Assign*.
3. Press **[GROUP**	Skip this step if the NSK mode is Group.
4. Press 01	The selected channels and/or spots are added to the existing Group.

Removing spots/channels from Groups

Example: remove spots 7 → 9 from Group 01.

Keypresses	Results/Comments
1. Select Spots 7 → 9	
2. Press **[FREE]**	
3. Press **[GROUP]**	Skip this step if the NSK mode is Group.
4. Press 01	The selected spots and/or channels are removed from the Group.

Erasing Groups

Delete Groups by freeing the assignment on the Numeric Soft Keys.

1. Press **[FREE]**
2. Press the NSK of the Group you want to delete.

To delete more than one Group, press and hold **[FREE]** or lock **[FREE]**.

Examining Groups

A Group Exam display shows the spots and channels included in the Group. If text is attached, it is also displayed.

Once you have examined the Group, you can continue by pressing the + and — keys to view the next or previous Group.

There are two key sequences that may be used to exam Groups:

Keypresses	Results/Comments
1. Press **[EXAM 1]** or **[EXAM 2]** or **[EXAM 3]**	The message *Assign Key Expected* prompts for your selection.
2. Press **[GROUP]**	Skip this step in the NSK mode is Group.
3. Press an NSK	The display shows the spots and channels included in the selected Group.

Or

Keypresses	Results/Comments
1. Press **[GROUP]**	Skip this step in the NSK mode is Group.
2. Select a number on the numeric keypad.	The number must be at least 2 digits.
3. Press **[EXAM 1]** or **[EXAM 2]** or **[EXAM 3]**	The display shows the spots and channels included in the selected Group.

Text for Groups

You may want to add a caption to Groups. The text is displayed when examining a Group and on the NSK display when in Group mode.

Keypresses	Results/Comments
1. Press **[GROUP]**	Skip this step if the NSK mode is Group.
2. Select a Group.	
3. Press **[TEXT**	
4. Type the text on the keyboard or press **[ALPHA]** and type on the NSKs.	
5. Press **[STORE]**	The first 8 characters of the text appear on the NSK Exam display. The full text appears on the individual Group exams.

Erasing text

Keypresses	Results/Comments
1. Press **[GROUP]**	Skip this step in the NSK mode is Group.
2. Select a Group.	
3. Press **[TEXT]**	
4. Press **[ERASE]**	

Using Groups

When you press a Numeric Soft Key with a Group assignment (LED on), the spots and channels assigned to that Group are selected in the editor.

Use the dimmer wheel to bring up the dimmers of all the spots/channels contained in the Group or select specific spots/channels from the Group for intensity or for parameter value assignments.

If you are planning to select more than one Group, it is advisable to make the NSK default mode Group.

The functionality of channel/spot selections made using Groups, is identical to selections made on the numeric keypad.

The functions include:
- Copying parameter values
- Assigning an effect to spots
- Assigning leader/follower spots
- Assigning parts

Releasing spots and channels from the selection

If you want to use only part of the Group that you have selected, you can release spots and channels from the selection.

Keypresses	Results/Comments
1. Select a Group.	
2. Press **[EXCEPT]**	
3. Select a spot/channel or a range of spots/channels.	The result of releasing spots/channels is apparent only after the dimmer wheel or parameter wheel has been moved.

You can release spots/channels from the editor after the selection using Group by using another Group.

Example: Group 1 contains spots 1- 10, Group 2 contains spots 6 and 7. You want to select the spots in Group 1 excluding spots 6 and 7.

Keypresses	**Results/Comments**
1. Press **[GROUP]**	Skip this step in the NSK mode is Group.
2. Press NSK 01	
3. Press **[EXCEPT]**	
4. Press NSK 02	The result of releasing spots/channels is apparent only after the dimmer wheel or parameter wheel has been moved.

CHAPTER 18
PALETTES

This chapter includes:

Overview

Palettes are a non-tracking database of spot parameter values, channel intensity values, and scroller frame values. Sabre supports 999 Palettes.

Palette information for spot parameters is stored per spot type.

Example: Cyberlight spots and Superscan Zoom are selected in the editor and have parameter value assignments. Any Palette stored will contain the selected parameter values for Cyberlight spots and Superscan Zoom fixtures. The information stored for a spot type can be applied to all spots of that type. Spot types reference the ID number included in the spot definition in the Mix Output menu.

Channel information is per channel and scroller information is per scroller channels. Example: storing a Palette from the editor. The editor is: channel 1 – 6 @ 80%. Scroller channels 101 – 106 at scroller frame 12. Therefore the Palette can be applied to channels 1 → 6 and 101 → 106.

Palettes are stored and retrieved using the NSKs in Palette mode or using the numeric keypad.

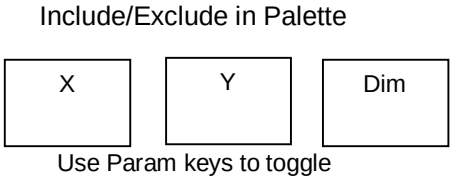
Palettes are stored with the show file and in a separate Palette Only file. Palettes may be loaded independently of show files.

Programming a Palette

If more than one spot of the same type are in the editor, the parameter values of the first spot number of that type are stored in the Palette.

If the NSKs are in Palette mode a window opens when **[ASSIGN]** is pressed. The window gives you the option of including or excluding the X, Y, and Dimmer parameters when storing the Palette.

The window looks like this:



The color code for this window:

Color	What it means
Blue	Include the parameter in the Palette
Gray	Do not include the parameter in the Palette

Example: Program Palette 6.

Keypresses	Results/Comments
1. Select spots	
2. Assign parameter values.	Repeat the procedure for as many spot types as desired.
3. Press **[ASSIGN]**	If the NSKs are in Palette mode the Include/Exclude window opens.
4. Press **[PALETTE]**	Skip this step if the NSK mode is Palette. If the NSKs are not in Palette mode the Include/Exclude window opens now.
5. Optional – Include/exclude X, Y, dimmer from the Palette.	
6. Press NSK **[06]**	The LED on the selected NSK lights *Palette 6 Stored* is displayed.

Text for Palettes

Add text labels to Palettes for easy identification. The first 8 characters of the text are displayed on the NSK display in Palette mode and the text (20 characters) appears in the Palette list

Example: Assign text to Palette 6.

Keypresses	Results/Comments
1. Press **[PALETTE]**	Skip this step if the NSK mode is Palette.
2. Press **NSK [06]**	
3. Press **[TEXT]**	
4. Type text on the alphanumeric keyboard.	
5. Press **[STORE]**	The text appears next to the Palette number in the Palette list display and on the NSK display in Palette mode

Or

Keypresses	Results/Comments
1. Press **[PALETTE]**	
2. Enter 6 on the keypad	
3. Press **[TEXT]**	
4. Type text.	
5. Press **[STORE]**	The text appears next to the Palette number in the Palette list display and on the NSK display in Palette mode

Examining Palettes

You can examine the contents of each Palette or view a Palette list.

The Palette list exam is a “strong” exam. Since no keypress bumps out this exam you can keep it on view while you continue editing.

If the Palette list is more than 1 page, use the **[UP 1]** or **[UP 2]** or **[SHIFT] [UP 1]** keys for paging.

Viewing the Palette list

Keypresses	Results/Comments
1. Press **[PALETTE]**	
2. Press **[EXAM 1]** or **[EXAM 2]** or **[EXAM 3]**	A list of Palettes is displayed. The display shows the generic contents of the Palette- spots, channels, and scrollers.
3. To close this display and return to the Stage display press: **[STAGE]** if the exam display is on CRT 1. **[TOPO]** if the exam display is on CRT 2. **[SHIFT STAGE]** if the exam is on CRT 3.	

Examining a selected Palette

This is a “weak display”; any keypress (except those used to view next and previous Palettes) bumps the display back to the Stage display.

If the Palette contains spots and channels press either **[→]** key to page for channels or spots

Keypresses	Results/Comments
1. Press **[PALETTE]**	Skip this step if the NSK mode is the Palette.
2. Press an **[NSK]**	
3. Press **[EXAM 1]** or **[EXAM 2]** or **[EXAM 3]**	The contents of the Palette are displayed on the selected monitor.
4. View the next or previous Palette by **[+]** or **[-]**.	

Modifying Palettes

There are 2 ways to modify palettes.

You can modify a Palette by adding the editor to the Palette. This method begins with selecting the spots, parameters, channels, or scrollers and adding them to the Palette. If the Palette does not contain the channel, scroller, or spot type it is added. If the Palette does contain the channel, scroller or spot type the Palette information is overwritten.

You can also use direct Palette modification, which begins by selecting the Palette.

Adding a channel

Example: Add a channel to Palette 10.

Keypresses	Results/Comments
1. Select the channel and assign intensity.	
2. Press **[PALETTE]**	
3. Press **[ASSIGN]**	
4. Press **NSK [10]**	*Update Palette Info?* is displayed.
5. Press **NSK [10]** again.	*Palette # Stored* is displayed.

Or

Keypresses	Results/Comments
1. Press **[PALETTE]**	Skip this step if the NSK mode is Palette
2. Press [**NSK 10]**	
3. Press **[CHANNEL]**	The contents of the Palette enter the editor.
4. Enter the channel number on the keypad and assign intensity.	
5. Press **[STORE]**	*Palette # Stored* is displayed.

Adding a spot

Example: Add a new spot type to Palette 10.

Keypresses	Results/Comments
1. Select a spot type that is not in the Palette.	
2. Select a parameter and assign a value.	
3. Press **[ASSIGN]**	
4. Press **[PALETTE]**	Skip this step if the NSK mode is Palette
5. Press **NSK [10]**	*Palette # Stored* is displayed.

Or

Keypresses	Results/Comments
1. Press **[PALETTE]**	Skip this step if the NSK mode is Palette
2. Press **NSK [10]**	
3. Press **[SPOT]**	The contents of the Palette are now in the editor.
4. Select a spot type not included in the Palette and assign values.	
5. Press **[STORE]** again.	*Palette # Stored* is displayed.

Adding spot parameters

The Palette modification sequence – **[PALETTE] [NSK] [SPOT] modify [STORE]** - does not add parameters that are not already in the palette. To add new parameters to the Palette use the following sequence.

Example: add a new parameter to Palette 10.

Keypresses	Results/Comments
1. Press **[PALETTE]**	Skip this step if the NSK mode is Palette
2. Press **NSK [10]**	
3. Select the spot type and new parameter.	
4. Assign a parameter value.	
5. Press **[ENTER]**	The contents of the Palette are in the editor.
6. Press **[ASSIGN]**	
7. Press **NSK [10]**	*Update Palette Info?* is displayed.
8. Press **NSK [10]**	*Palette # Stored* is displayed.

Or

Keypresses	Results/Comments
1. Press **[PALETTE]**	Skip this step if the NSK mode is Palette
2. Press **NSK [10]**	
3. Press **[SPOT]**	The contents of the Palette enter the editor.
4. Select parameters and modify values.	
5. Modify the parameter value.	
6. Press **[STORE]** again.	*Palette # Stored* is displayed.

Modifying assigned values

Keypresses	Results/Comments
1. Select a spot.	
2. Select a parameter and modify the parameter value.	
3. Press **[ASSIGN]**	
4. Press **[PALETTE]**	
6. Press **NSK [10]**	*Update Palette Info?* is displayed.
7. Press **NSK [10]** again	*Palette # Stored* is displayed.

Or

Keypresses	Results/Comments
1. Select a channel and modify intensity.	
2. Press **[ASSIGN]**	
3. Press **[PALETTE]**	
4. Press **NSK [10]**	*Update Palette Info?* is displayed.
5. Press **NSK [10]** again	*Palette # Stored* is displayed.

Removing elements from a Palette

Example: Remove a spot type from Palette 10.

Keypresses	Results/Comments
1. Select the spot type that you want to delete.	
2. Press **[FREE]**	
3. Press **[PALETTE]**	Skip this step if the NSK mode is Palette.
4. Press **NSK [10]**	*Update Palette Info?* is displayed.
5. Press **NSK [10]**	*Palette # Stored* is displayed.

Example: Remove a spot parameter from Palette 10.

Keypresses	Results/Comments
1. Select a spot.	
2. Select the parameters that you want to delete.	
3. Press **[FREE]**	
4. Press **[PALETTE]**	Skip this step if the NSK mode is Palette.
5. Press **NSK [10]**	*Update Palette Info?* is displayed.
6. Press **NSK [10]**	*Palette # Stored* is displayed.

Example: Remove a channel from Palette 10.

Keypresses	Results/Comments
1. Select the channels that you want to delete.	
2. Press **[FREE]**	
3. Press **[PALETTE]**	Skip this step if the NSK mode is Palette.
4. Press **NSK [10]**	*Update Palette Info?* is displayed.
5. Press **NSK [10]**	*Palette # Stored* is displayed.

Example: Remove a scroller from Palette 10.

Keypresses	Results/Comments
1. Select the channel whose scroller you want to delete.	
2. Press **[FRAME]**	
3. Press **[FREE]**	
4. Press **[PALETTE]**	Skip this step if the NSK mode is Palette.
5. Press **NSK [10]**	*Update Palette Info?* is displayed.
6. Press **NSK [10]**	*Palette # Stored* is displayed.

Copying Palettes

You can copy the contents of a Palette to another Palette. The information in the target Palette is overwritten.

Example: Copy Palette 1 to .2

Keypresses	Results/Comments
1. Press **[PALETTE]**	Skip this step if the NSK mode is Palette.
2. Press **NSK 01**	
3. Press **[ASSIGN]**	*Copy to Palette* is displayed in the command line.
4. Press **NSK 02**	If Palette 02 contains information, the message *Palette Exists. Replace?* Is displayed.
5. Press **NSK 02**	*Palette # Stored* is displayed.

Erasing a Palette

Example: Erase Palette 10

Keypresses	Results/Comments
1. Press **[FREE]**	
2. Press **[PALETTE]**	Skip this step if the NSK mode is Palette.
3. Press **NSK [10]**	The system asks: *Are You Sure?*
4. Press **NSK [10]**	*Palette 10 Erased* is displayed.

Example: Erase Palettes 1 → 10

Keypresses	Results/Comments
1. Press **[PALETTE]**	
2. Press **[1 → 10]** on the numeric keypad.	
3. Press **[ERASE]**	The system asks: *Are You Sure?*
4. Press **[ERASE]** again.	*Palette/s Erased* is displayed.

Applying Palettes

Spot information is applied per type of spot. Channel information is applied per channel. Scroller information is applied per scroller. Example: Palette 10 contains information for spots Goldenscan and Superscan Zoom, channels 1 – 10, and scrollers 101 – 110. The editor selection is spots 1 → 6 Superscan Zooms, channels 1 – 6, and scrollers 101 – 106; the Palette information is applied to the editor selections.

Keypresses	Results/Comments
1. Select spots, select channels, and scroller channels.	
2. Press **[PALETTE]**	Skip this step if the NSK mode is Palette.
3. Press NSK **[10]**	The parameter, intensity, and scroller frame information is assigned to the selections in the editor if the spot type is identical to the spot in the Palette and the selected channels and scrollers are included in the Palette.

Palette files

Palettes are an integral part of a show and thus are automatically stored and loaded when you record or load a show file.

The Palette information in show files includes all spot, channels, and scroller information.

You can also record dedicated Palette files. Dedicated Palette files store spot information only.

You have the option of loading all the Palettes in the files, 1 Palette, or a range of Palettes.

Loading dedicated Palette files

Keypresses	**Results/Comments**
1. Go to the Load menu.	
2. Press **F6 More** and then press **F2 Palettes Only**	The system prompts for show file number.
3. Optional - Press **F4 Exam File** or **F5 Exam Palettes**	Press **F4 Exam File** – the Palettes contained in the file are displayed. Press **F5 Exam Palettes** – the Palettes currently on board are displayed.
4. Enter the show file number	
5. Press **F1 All Palettes** or select specific Palettes.	
6. Press **F1 Load**	*Are You Sure?* is displayed.
7. Press **F1 Yes**	All Palettes are loaded as they appear in the file: Palette 1 as Palette 1, Palette 2 as Palette 2, etc.

➢Note

You can load Palettes to different palette numbers. Following the example above load the Palettes renumbering them starting from 21.

Keypresses	**Results/Comments**
After step 5 press **F2 To Palette #**	Sabre prompts for a number.
Enter 21, according to this example.	
Continue from step 6 as described above.	Palette 1 is loaded as Palette 21, Palette 2 as Palette 22, etc.

Loading Palettes from show files

Keypresses	Results/Comments
1. Go to the Load menu.	
2. Enter the show file number	
3. Press **F6 More**	
4. Press **F2 Palettes Files**	The contents of the selected Palette file are displayed.
5. Optional - Press **F4 Exam File** or **F5 Exam Palettes**	Press **F4 Exam File** – the Palettes contained in the file are displayed. Press **F5 Exam Palettes** – the Palettes currently on board are displayed.
6. Press **F1 All Palettes** or press **F2 Palette #** and select specific Palettes.	
7. Press **F1 Load**	*Are You Sure?* is displayed.
8. Press **F1 Yes**	

Recording dedicated Palette files

Keypresses	Results/Comments
1. Go to the Load menu.	
2. Enter the show file number	
3. Press **F6 More** and then press **F5 Palettes Only**	
4. Press **F1 Load**	The warning that channel and scroller Palettes are not stored is displayed.
5. Press **F1 Yes**	

CHAPTER 19
FILTER

This chapter includes:

Overview

Applying Filters isolates selected channels, scrollers, spots, or spot parameters when storing memories or during playback. 99 Filters can be stored. Filters are numbered from 1 - 99.

Filters are assigned to playback devices or to the editor. A Filter can be assigned to multiple playback devices and the editor at the same time.

The Filter works in 2 modes: Filter and Invert Filter. Filter assignments block the participation of spots and channels not contained in the Filter. Invert Filter assignments exclude the Filter elements.

Example of Filter modes when assigned to a playback device:
Memory 1 containing channels 1 - 25 is assigned to a controller 1. A Filter containing channels 8 - 10 is assigned to controller 1. Filter: when controller 1 is active (off its end stop), the output is channels 8 - 10 only. Invert Filter: when controller 1 is active the output channels 8 - 10 is blocked.

Example of Filter functions in the editor:
The Filter in the editor is composed of all of the gobo parameters. When storing a memory, you can store only the gobo parameters even though all of the parameters of the selected spots are active in the editor or, using an Invert Filter, store everything except the parameters contained in the Filter.

Programming a Filter

Filters are programmed in the editor. They may be based on editor selections, memories, or library parameters.

Programming a Filter using editor selections

Example: Program a Filter containing channels 3, 8, and 10.

Keypresses	Results/Comments
1. Select channels 3, 8, and 10.	The channels are displayed in red.
2. Press **[FILTER]**	*Filter* is added to the command line.
3. Enter a number on keypad.	
4. Press **[STORE]**	*Filter # Stored* is displayed.

Or

Example: Program a Filter with spots 1, 3, and 5. All of the parameters are included in the Filter.

Keypresses	Results/Comments
1. Select spots 1, 3, and 5.	
2. Press **[FILTER]**	*Filter* is added to the command line.
3. Select a Filter number on keypad.	
4. Press **[STORE]**	*Filter # Stored* is displayed.

Example: Program a Filter for that includes only the gobo parameter for spots 1 → 6.

Keypresses	Results/Comments
1. Select spots 1 → 6.	
2. Select the gobo parameter.	
3. Press **[FILTER]**	*Filter* is added to the command line.
4. Enter a number on keypad.	
5. Press **[STORE]**	*Filter # Stored* is displayed.

Programming a Filter from library parameters

Example: Program a Filter that includes gobo library parameters.

Keypresses	Results/Comments
1. Press **[GOBO]**	Skip this step if the NSK mode is Gobo.
2. Press an NSK to select a gobo library,	
3. Press **[FILTER]**	
4. Enter a number on keypad.	
5. Press **[STORE]**	The Filter contains the Gobo Library parameters.

Programming a Filter using memories

Example: Program Filter 1 based on memory 8.

Keypresses	Results/Comments
1. Select memory 8.	
2. Press **[FILTER]**	
3. Enter 1 on the keypad.	
4. Press **[STORE]**	*Filter # Stored* is displayed.

Modifying Filters

You can modify Filters by adding or removing channels, spots, and spot parameters.

Adding channels to a Filter

Example: Add channel 12 to Filter 1.

Keypresses	Results/Comments
1. Select Filter 1	
2. Press **[CHANNEL]**	The Filter contents are displayed.
3. Enter 12 on the keypad.	
4. Press **[STORE]**	The message *Filter # Stored* is displayed.

Adding spots to a Filter

Example: Add spot 12 cw parameter to Filter 1.

Keypresses	Results/Comments
1. Select Filter 1	
2. Press **[SPOT]**	The Filter contents are displayed.
3. Enter 12 on the keypad.	
4. Select the cw parameter.	
5. Press **[STORE]**	The message *Filter # Stored* is displayed.

Adding Text to Filters

You can attach a caption to Filters for easy identification.

Example: add text to Filter 20.

Keypresses	Results/Comments
1. Press **Filter 20** to select the Filter.	
2. Press **[TEXT]**	
3. Type the caption on the alphanumeric keyboard.	
4. Press **[STORE]**	The text is displayed on the selected Filter Exam and the Filter Assignment display.

Erasing Filters

Keypresses	Results/Comments
1. Select the Filter.	A range of Filters can be selected.
2. Press **[ERASE]**	Sabre prompts for a confirmation command.
3. Press **[ERASE]**	The Filter is erased.

Examining Filters

You can view Filter assignments, selected Filters, or a list of Filters.

Viewing Filter assignments

Keypresses	Results/Comments
1. Press **[FILTER]**	A map of the playback devices is displayed and Filter assignments on the playback devices
2. To exit press **[CLEAR]**	

Viewing a selected Filter

Keypresses	Results/Comments
1. Press **[FILTER]**	
2. Enter a number on the keypad.	
3. Press **[EXAM]**	The channels and spots in the Filter are displayed. Fi on a gray field is displayed in place of intensity and parameter values.
4. Press **[**+**]** or **[**—**]** to view the next or previous Filter.	
5. To exit press **[STAGE]**	

Viewing the Filter list

Keypresses	Results/Comments
1. Press **[FILTER]**	
2. Press **[EXAM]**	A list of Filters, their texts, and assignments is displayed.
3. To exit this display press **[STAGE]**	

Filters and Playback Devices

Playback devices accept Filter assignments in all cases – whether there is a current memory or grp assignment or there is no current assignment. You can, for instance, program a Filter for color parameters and assign that Filter permanently to a particular controller.

Filter assignments are saved in snaps.

Assigning a Filter to a playback device

This type of Filter assignment, represented by +F on the playback display, blocks all output not included in the Filter.

Keypresses	Results/Comments
1. Select the Filter.	
2. Press **[ASSIGN]**	The message *Assign Dim/X-Fade* is displayed
3. Press **[A]**, **[B]**, **[C]**, **[D]** to assign the Filter to one of the crossfaders. Press **[DIM]** or **[XF]** to assign the Filter to a controller.	The Filter assignment is displayed as *+F*.

Assigning an Invert Filter to a playback device

This type of Filter assignment, represented by -F on the playback display, blocks the output of channels, spots, and spot parameters included in the Filter.

Keypresses	Results/Comments
1. Press **[SHIFT] [FILTER]**	
2. Select the Filter.	
3. Press **[A]**, **[B]**, **[C]**, **[D]** for a crossfader. Press **[DIM]** or **[XF]** for a controller.	The Filter assignment is displayed as ***-F.***

Removing a Filter assignment

Keypresses
1. Press **[FILTER]**
2. Press **[FREE]**
3. Press the assignment key of the playback device.
4. Press **[CLEAR]**

Filters and the Editor

A Filter assigned to the editor influences the following functions:

- **= # STORE**
- **+1 STORE**
- **CALL # STORE**

Filters do not influence:

- Memory modification using Delta.
- Basic memory modification.

Assigning a Filter to the editor

This type of Filter assignment allows you to store memories containing only the elements included in the Filter, regardless of the channels, spots, and spot parameters active in the editor.

Keypresses	Results/Comments
1. Select the Filter.	
2. Press **[ENTER]**	The warning *Filter In Editor!!!* is displayed in red on the command line.

Assigning an Invert Filter to the editor

This type of Filter assignment allows you to store memories excluding the elements contained in the Filter, even though they are active in the editor.

Keypresses	Results/Comments
1. Press and hold **[SHIFT]**	
2. Press **[FILTER]**	The Filter is Playback display is now on the screen
3. Select the Filter.	
4. Press **[ENTER]**	The Filter assignment is displayed as **—F**.

Removing a Filter assignment from the editor

Keypresses
1. Press **[FILTER]**
2. Press **[RELEASE]**

Storing memories with STORE STORE and Filters

When a Filter is assigned to the editor, only the channels, spots, and spot parameters contained in the Filter are recorded to memories.

Example: The Filter assigned to the editor consists of spots 1 - 12, parameters yellow, cyan, and magenta. The memory on A (which you are modifying using STORE STORE) contains all the parameters of spots 1 -12. Only the changes made in the values for yellow, cyan, and magenta will be stored when you press **[STORE] [STORE]**.

CHAPTER 20
EFFECTS

This chapter includes:

Overview

The Effect Editor provides you with the tools to edit the pre-programmed Effects or program your own custom Effects.

Effects can contain any number of spots, channels, or scrollers. All Effect attributes are parameter and spot specific. Example: You can assign different Offsets to parameter 6 in spot 1, parameter 6 in spot 2, and parameter 6 in spot 3.

The spot selection order determines the order in which Effects with an Offset is executed. Example: If the spot selection was 1 → 12, spot 1 is the first spot to respond, spot 2 is the next, etc. If the spot selection was 12 → 1, spot 12 is the first spot to respond, spot 11 is the next, etc. This is also valid for non-sequential spot selections, such as spot 5, spot 7, spot 4, spot 8, etc.

Effects can be stored as a memory or as an Effect Palette.

Effect Palettes are used as a database and can be applied to any number and any type of spots. Effect Palettes are numbered from 1 -999.

The NSKs are used for quick access to Effect Palettes.

Effect Palettes can be recorded and loaded as separate files.

Effects can be programmed live or off line with the aid of CAD programs such as CompuCAD, WYSIWYG, etc.

Effects are played back on the crossfaders, the controllers, or in the editor.

The Effect Editor does not operate in Blind mode.

Sabre provides you with pre-programmed Effect Palettes. The Effect Palettes are stored on the Hard Disk. The prefix 'E' is attached to Effect Palette files. You will probably want to edit the pre-programmed Effects changing Effect attributes such as Rate and Size.

There are two **[EFFECT]** keys on the console. **[EFFECT]** located above the Iris wheel accesses the Effect Editor. **[EFFECT]** located next to the NSKs is used for storing and selecting Effect Palettes.

Accessing the Effect Editor

When the Effect Editor is active the wheels and Parameter keys control the Effect attributes.

Effect attributes are displayed on the wheels' LCD displays and on monitor 1.

The monitor display shows the selected spots, the selected parameters, their Effect attributes, a list of Effect attributes, a list of Primitives, and the Time Cycle meter.

Selected parameters appear on a dark red field. All Effect attributes assigned to the last 3 parameters are displayed. Parameters with no Effect attribute assignments show the parameter value.

The LCD display shows the Attributes, their assigned values, and their mode selections. The attributes appear above their wheels. Use the parameter keys to select attribute modes. Use the wheels to edit values.

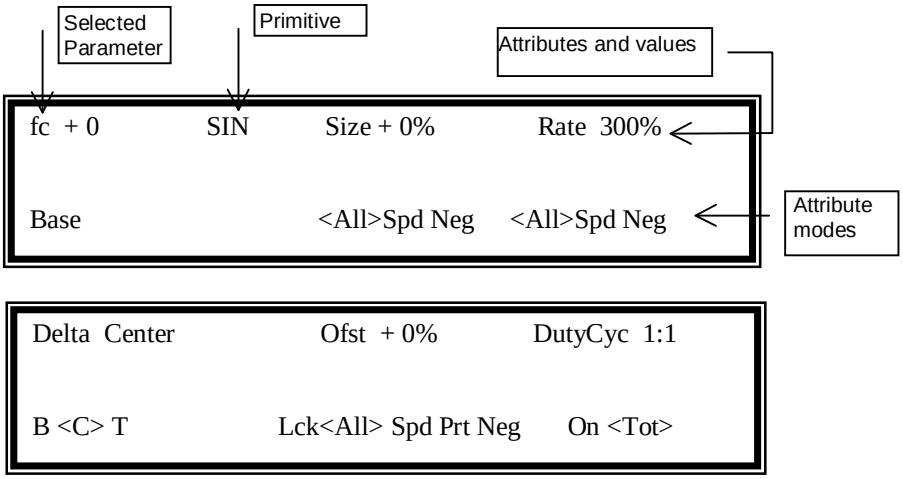


Figure 1 Effect attributes - LCD displays

Example: Select spot 5 and assign an Effect to pan (X)

Keypresses	**Results/Comments**
1. Select spot 5 and press **[X]**	
2. Press **[EFFECT]** (next to **[Y]**)	The Effect Editor opens. Spot 5's dimmer is turned on. X is displayed in red in the Effect Editor.
3. You can now assign a Primitive and modify the Effect attributes. (See below).	

Exiting the Effect Editor

Keypresses	**Results/Comments**
1. Press **[EFFECT]**	The Stage display is on the monitor and the wheels return to Parameter control.

Effect Attributes

Effect Attributes can be divided into 2 categories - movement and time.

The attributes of movement are Primitive, Base, Size, and Delta.

The attributes of time are Rate, Offset, and Duty Cycle.

When you select an Attribute, it is highlighted in the Attribute list in the lower right corner of the Effect Editor.

Attributes that you are working on are displayed on a light red field in the Effects table.

All of the examples below assume that you are in the Effect Editor.

Primitive

Primitives are the basic movement. Different Primitives can be assigned to each parameter. Combining Primitives affords a quick way to create Effects.

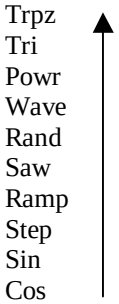
Example: Create a clockwise circle by assigning Sin to x and Cos to y. Create a counterclockwise circle by assigning Cos to x and Sin to y.

Assigning Primitives

Different primitives can be assigned to each parameter participating in the Effect.

The List of Primitives is displayed on the right side of the Effect Editor. The most commonly used Primitives are conveniently placed at the bottom of the list, where the wheel begins its selection.

The List order is:



As demonstrated in the table at the end of this chapter, combinations of primitives are used to program Effects.

➢Note

All Primitives operate from 0% - Full and back to 0%. The Primitive Sin, however, begins at 50%, going from 50% to 0% to Full and back to 50%. This characteristic causes the Effect to “rest” at 50% when the Duty Cycle is not 1:1. It is recommended to use Sin onlu in conjunction with Cos to program a circle Effect.

A Primitive can be assigned at any point during Effect programming. You may find that you want to adjust the Base, assign Offset, and Rate values before assigning a Primitive.

Keypresses	Results/Comments
1. Select spots.	
2. Select a parameter.	
3. Assign a value	
4. Press **[EFFECT]**	The Effect Editor is active and displayed on monitor 1. Effect attributes appear on the LCD displays.
5. Use the Iris wheel to select a Primitive.	The Effect operates immediately on selection of a Primitive.

Releasing a Primitive assignment

Example: Release the Primitive assignment on Spot 5, Y.

Keypresses	Results/Comments
1. Select spot 5 and press **[Y]**	
2. Press **[EFFECT]**	The Effect Editor is active and displayed on monitor 1. Effect attributes appear on the LCD displays.
3. Press **[RELEASE]**	The Primitive assignment is released from the selected parameter.

Base

The Base is the parameter value reference for the starting point of the Effect. The placement of the starting point is determined by Delta (see below).

Base is parameter and spot specific. The Base can be changed in the Effect Editor.

The default Base is the parameter value assigned before entering the Effect Editor. Base values can be changed within the Effect Editor. Libraries can be also be for Base values.

When an Effect is stored as a memory, the Base is included. When an Effect is stored as an Effect Palette the base is not retained.

Editing Base Values

Changing the Base value changes the starting point of the Effect.

You can change the Base in the Effect Editor or change the Base of an Effect running on a playback device.

Editing the Base in the Effect Editor

Keypresses	Results/Comments
1. Select spot/s and parameters.	
2. Press **[EFFECT]**	The Effect Editor is displayed on the monitor and the LCDs. The wheels control the Effects attributes. The parameter keys are used to select Effect Attributes.
3. Turn the Base wheel Or Press the Base key and enter a value on the keypad Or Select a Library	The change is reflected on the monitor and the LCD display.

Editing the Base for an Effect in playback

The following sequence is used when an Effect is running on a playback device.

Keypresses	Results/Comments
1. Select a spot/s.	
2. Press the parameter key and move the parameter wheel or assign a value on the keypad.	The P key's LED flashes.
3. Press **[STORE] [STORE]**	The new value is displayed on the monitor.

Size

The Size determines how much movement takes place from the Base. The Size default is Zr or 50 or Fl depending on the type of parameter.

Example: The Base is 50, Size is 50, Delta is C (center). The range of movement is Base +25 and Base – 25.

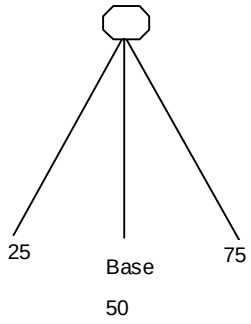


Figure 2 Size attribute and center Delta

Example: If the Base value is 30, Size 50, and Delta C, the upper value is 55 and the lower value is 5.

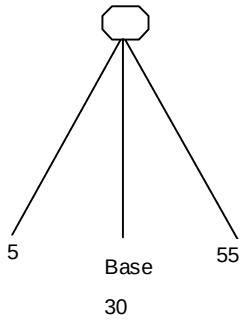


Figure 3 Size atrribute and center Delta

Changing the Size

Size can be modified absolutely. <All> is the default selection. The same size value is given to parameter for all selected spots.

The Size modification can be "spread" relatively over the selected parameters in the selected spots. The assignment of the spread depends on the order of the spot selection.

Keypresses	**Results/Comments**
1. Press <All> or <Spd> under Size.	The LED of the selected key flashes.
2. Use Offset wheel or enter a value on the keypad.	The new value is displayed on the monitor and the LCD display.

Assigning a negative size

Keypresses	**Results/Comments**
1. Press **[NEG]** for Size	A minus sign precedes the Size value.

Delta

Delta determines the starting point of the Effect.
You can select B (Bottom), C (Center), or T (Top).
The Delta icon is an arrow that separates the values in the Base row.

Delta icons

Delta	Icon
Bottom	↓
Center	→
Top	↑

Bottom Delta

Example: the Base is 50, Size is 50, Delta is B (Bottom).

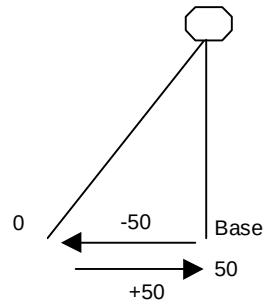


Figure 4 Bottom Delta

Top Delta

Example: the Base is 50, Size is 50, Delta is T (Top).

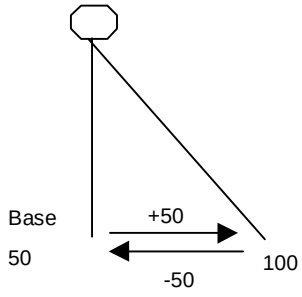


Figure 5 Top Delta

Center Delta

Center Delta is seen in the example for the Base attribute.

Changing Delta

Keypresses	Results/Comments
1. Press the Attribute mode key for B, C, or T	The arrow icon appears between the Base and current value for the selected parameter.

Rate

Rate is the speed at which an Effect is executed. Rate is parameter and spot specific; in one Effect different parameters can run at different rates.

Rates can be positive or negative. A negative rate causes the Effect to switch directions. Example: A circle Effect assigned a Rate of 50 runs clockwise. A circle Effect assigned a Rate of -50 runs counter clockwise.

The Rate assignment influences the time span of the Duty Cycle (see below).

The default Rate assignment is 200.

The Rate change can be absolute for the parameters in the selected spots.

The Rate change can be "spread" relatively over the selected parameters in the selected spots. The assignment of the spread depends on the order of the spot selection.

The meter at the side of the display shows the Effect Rate for the selected parameter.

Changing the Rate

"All" modifies the default rate equally for all selected parameters.

"Spd" enters a relative modification for each selected parameter according to the order of the spot selection.

➢Note
Modifying the Rate changes the Offset. Locking the Offset protects it when the Rate is modified. See page 20-13.

Keypresses	Results/Comments
1. Press the key for <All> or <Spd> under Rate.	The LED of the selected key flashes.
2. Turn the wheel Rate attribute wheel or enter a value on the keypad.	The LCD display shows the basic rate + the spread. Example: 200 + 36.

Assigning a negative rate

A negative Rate value reverses the direction of the Effect.

Keypresses	Results/Comments
1. Press **[NEG]** for Rate	The direction of the Effect is reversed. A minus sign precedes the Rate value.

Default values for Rate, Size, and Delta

Attribute	Parameter Type	Default
Rate		200
Size	Continuous parameters, including channels	FL
Size	Discrete step parameters, including scrollers Mixed step parameters	0 (zero)
Size	X and Y	50
Delta	Continuous parameters, including channels. Not including X and Y	Top - If the Base value ≤ 50. Bottom - If the Base value is > 50
Delta	X and Y	Center

Offset

Offset controls when a spot begins its action within the time cycle.

The Offset attribute has 5 modes: <Lck> (Lock) <All>, <Spd> (Spread), and <Prt> (Part), and <Neg> (Negative).

<Lck> Locks the Offset value so that it is not changed when the Rate is changed.

<All> Assigns the identical offset to the selected parameters. If a spread has been assigned All assignments preserved the proportionality.

<Spd> Assigns a different offset value to the selected parameters; each spot begins the Effect at a different stage of the time cycle.

<Prt> Assigns automatic spread values to the number of spots relative to the Duty Cycle.

Using Spread

The spread assignment is determined by the K value. The K value is displayed on the LCD display. The Offset values assigned to the parameters are a function of the K value and the number of spots.

Example: Pan (X) for spots 1 → 4 is selected. The Spread K value is 3. Spot 1 is assigned an offset value of 0, spot 2 is offset 3, spot 3 is offset 6, spot 4 is offset 9.
The assignment of the spread depends on the order of the spot selection. If the spot selection was Spot 4 → 1, spot 1 receives value 9, spot 2 value 6, spot 3 value 3, and spot 4 value 0. In other words, spot 4 is the leading spot.

Evenly Spread Offset

You can spread the Offset evenly over the selected spots with one keypress.

Example: Evenly spread the Offset over the Pan parameter for 10 spots.

Keypresses	**Results/Comments**
1. Select spots 1 → 10 and press **[X]**	
2. Press **[EFFECT]**	The Effect Editor is active.
3. Press the key <Spd> under the Offset attribute.	
4. Press **[•]**	The Offset is evenly divided among the selected spots; spot 1 is assigned 0, spot 2 is assigned 20, spot 3 is assigned 30, spot 4 is assigned 40,….spot 10 is assigned 90.

Using All

<All> assigns an absolute Offset value to the selected parameters. This can be used, for example, to program an Effect for channels where groups of channels are on or off at the same time. Assume that you want to run groups of channels in a Step Effect. The groups are divided like this:
Group 1 – channels 1, 11, 21
Group 2 – channels 2, 12, 22
Group 3 – channels 3, 13, 23
Group 4 - channels 4, 14, 24
In this case you would use <All> to assign Offset 0 to Group 1, Offset 25 to Group 2, Offset 50, Offset 75 to Group 4.

Example: Assign the same Offset value to a group of channels.

Keypresses	**Results/Comments**
1. Select channels and assign intensity.	
2. Press **[EFFECT]**	The Effect Editor is displayed.
3. Assign a Primitive	
4. Press Offset <All> and assign a value using the keypad or the wheel.	The channels participating in the Effect have the same Offset.

<All> and <Spd> can be used together. Changing Spread Offset values using <All> preserves the spread. Example: The Spread Offset for channels 1 – 4 is: Channel 1 Offset 0, channel 2 Offset 25, channel 3 Offset 50, channel 4 offset 75. Adding 5% using <All> results in: channel 1 Offset 5, channel 2 Offset 30, channel 3 Offset 55, channel 4 Offset 80.

Examples of Offset uses

Example: Program an Effect where 4 spots execute a Cancan.

Keypresses	Results/Comments
1. Select spots 1 → 4.	
2. Press **[Y]** and assign a value. That will serve as the Base.	
3. Press **[EFFECT]**	The Effect Editor is active. Spots 1 → 4 are on. Y is selected, displayed on a red field.
4. Use the Iris wheel and assign Saw.	
5. Press <Spd> for the Offset attribute.	
6. Turn the Offset wheel until reaching the value 25% or enter 25 on the keypad.	The Offset value assigned to each spot is: Spot 1 is assigned Offset 0% Spot 2 is assigned Offset 25% Spot 3 is assigned Offset 50% Spot 4 is assigned Offset 75%

Using Part

Part assignments appear as absolute numbers in the command line and as percentage on the LCD display.

Parts work in conjunction with the Duty Cycle. (See below).

Using the example above program the Effect so that spot 1 executes its Effect assignment, then spot 2, then spot 3, and lastly spot 4.

Keypresses	Results/Comments
1. Select spots 1 → 4	
2. Press **[Y]** and assign the parameter value that will serve as the Base value for the Effect.	
3. Press **[EFFECT]**	The Effect Editor is active. Spots 1 → 4 are on. Y is selected, displayed on a red field.
4. Use the Iris wheel and assign Saw.	
5. Change the Duty Cycle to 1:4	
6. Press Offset **<Prt>** and press 4 on the keypad or use the Offset wheel.	The Offset value assigned to each spot is: Spot 1 is assigned Offset 0% Spot 2 is assigned Offset 25% Spot 3 is assigned Offset 50% Spot 4 is assigned Offset 75%

➢Note

When spot parameters are assigned a Spread Offset they are always in motion. When spot parameters are assigned Prt values they move as a groups depending on the Part assignment and Duty Cycle

Assigning a negative Offset value

Reverses the order of the spots in an Effect. Example: If your selection was spots 1 → 4, assigning a negative Offset causes the Effect to run starting at spot 1, as if your original selection was spots 4 → 1

Keypresses	Results/Comments
1. Press <Neg>	A minus sign (-) precedes the Offset value.

Locking the Offset

Changing the Rate attribute automatically changes the value for the Offset attribute. You can protect the Offset value, while changing the Rate value, by locking the Offset.
Warning! Locking the Offset may cause a jump when the Rate wheel is moved.

Keypresses	Results/Comments
1. Press <Lck>	The Locked Offset is displayed on a gray field.
2. Move the Rate wheel or press Rate <Neg>.	The Offset value is locked while changing the Rate value.

Resetting the Offset

Keypresses	Results/Comments
1. Press <Spd> or <All>	
2. Press 0 on the keypad.	The Offset value is reset.

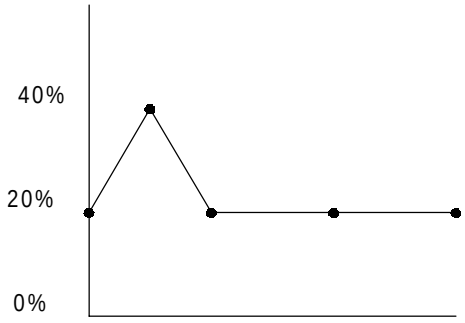
When the Offset value was assigned using <Spd> and <All> each element is rest separately. Example: Channels 1 – 4 were assigned Spread Offset values – Offset 0, 25, 50, and 75. Then, using <All> 5% was added to the values. Resetting the Offset value through <All> resets the values to 0, 25, 50, and 75. Resetting the Offset values through <Spd> resets the Offset for all the channels to 5 (the <All> value).

Duty Cycle

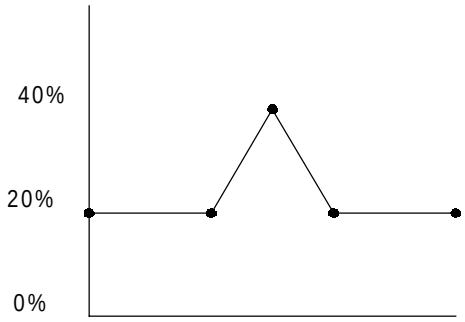
The Duty Cycle determines the speed or how many times a spot executes its assigned Effect within one Time cycle. Duty Cycle assignments also allow some spots to run while other spots are resting. In the Effect Editor, there is a dynamic meter that displays Time cycle, as an ascending scale of percentage (0% - 90%). When an Effect is running, an arrow points to the current percentage of the time progress.

The Duty Cycle is represented by two numbers. The first number referred to as “On”, is the number of repeats within the time cycle. Tot, the second number, is the division of allotted time. The Duty Cycle default is 1:1

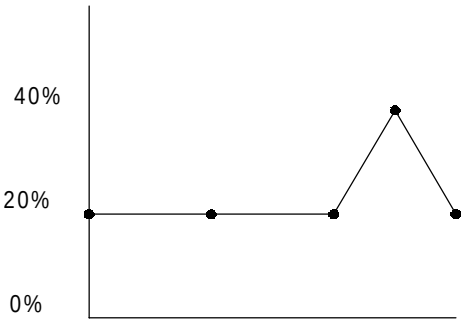
The following example is a 3 spot CanCan with Offset values 0%, 33%, and 66%, and 1:3



Spot 1
Primitve: Saw
Base 20%
Delta 10%
Size 20%
Offset 0%
Duty cycle 1:3



Spot 2
Primitve: Saw
Base 20%
Delta 10%
Size 20%
Offset 33%
Duty cycle 1:3



Spot 3
Primitve: Saw
Base 20%
Delta 10%
Size 20%
Offset 66%
Duty cycle 1:3

Some examples of Duty Cycles:

Duty Cycle	Rate	What happens
1:1	300	All spots complete 1 Effect within the allotted time period (300).
1:2	300	All spots complete 1 Effect in half the allotted time (150). During the remainder of the time cycle (150), the spots “rest”.
2:2	300	All spots complete 1 Effect within the allotted time period (300). This is like Duty Cycle 1:1.
2:4	300	All spots complete the Effect twice in half the allotted time. During the remainder of the allotted time the spots “rest”.
1:3	300	All spots complete 1 Effect in 1/3 the allotted time (100). During the remainder of the time cycle (200), the spots “rest”.
3:6	300	All spots complete the Effect 3 times in half the allotted time (150). During the remainder of the cycle (150), the spots “rest”.

Changing the Duty Cycle

Keypresses	Results/Comments
1. Press <On> or <Tot> and move the Duty Cycle wheel or enter number on the keypad.	The modified Duty Cycle is displayed on the monitor and the LCD.

Programming in the Effect Editor

When you enter the Effect Editor, the Home value for dimmer is assigned to selected spots that have no dimmer intensity.

While working in the Effect Editor, the keys **[ALL]**, **[HOME]**, **[CL1]**, and **[CL2]** are operable.

Channels and scrollers can be assigned Effects. All Effect attributes operate on channels and scrollers as they do for spot parameters.

Each Effect can contain spots, channels, and scrollers. When editing Effects that have all these elements, Spread offset is assigned per element.

Adding Parameters

If you want to include another parameter in the Effect, you must select the parameter using the parameter keys.

The example below assumes that you are in the Effect Editor.

Keypresses	Results/Comments
1. Press and hold **[PARAM RETURN]**	The wheels' LCD display shows parameter selections.
2. Press a P key and release **[PARAM RETURN]**	The wheels return to Effect Editor operation. The selected parameter appears on a red field.
3. Assign a base value to the parameter.	
4. Modify the Attribute values and assign a Primitive.	

➢Note

The keys **[DIM]**, **[X]**, **[Y]**, and **[IRIS]** can be selected without leaving the Effect Editor.

Copying timing attributes

Copying the timing attributes from a source parameter to a target parameter synchronizes the parameters running in the Effect. The timing attributes are Rate, Offset, and Duty Cycle.

Example: While programming an Effect, you have modified the Rate, Offset, and Duty Cycle for Pan (x). You continue programming the Effect, adding Tilt (y). You want to synchronize the timing of pan and tilt in the Effect; copy the timing attributes from x to y.

The instructions below assume that you are in the Effect Editor.

Keypresses	Results/Comments
1. Press **[Y]**	Select the target parameter.
2. Press **[COPY]**	*Synch with* appears in the command line.
3. Press **[X]**	Rate, Offset, and Duty Cycle values are copied from x to y.

Assigning Effects to channels

Offset is especially useful with channels.

Keypresses	Results/Comments
1. Select the channels. Optional - assign intensity	
2. Press **[EFFECT]**	The Effect Editor is active. The channel numbers are displayed on a red field, prefaced by *ch*.
3. Use the Iris wheel to assign a Primitive.	The Effect is immediately active.
4. Edit the rest of the Effect attributes.	
5. Store as a memory, assign to a playback device, or store as an Effect Palette.	When assigned to a controller, the Effect is active when the controller handle is off its bottom end stop.

Assigning Effects to scrollers

Keypresses	Results/Comments
1. Select the channels.	
2. Press **[FRAME]**. Optional - assign a frame value.	
3. Press **[EFFECT]**	The Effect Editor is active. The scroller channel number is displayed on a green field prefaced by *s*.
4. Use the Iris wheel to assign a Primitive.	The Effect is immediately active.
5. Edit the rest of the Effect attributes.	
6. Store as a memory, assign to a playback device, or store as an Effect Palette.	When assigned to a controller, the Effect is active when the controller handle is off its bottom end stop.

Returning to the Effect Editor

It is very easy to reselect the spots or channels participating in an Effect running in the editor or on a playback device and return to the Effect Editor for further modification.

Keypresses	Results/Comments
1. Press **[SPOT]** or **[CHANNEL]**	
2. Press **[EFFECT]**	The participating spots are selected.
3. Press **[EFFECT]**	The Effect Editor is active. All parameters with effect attribute assignments are selected and executing the Effect.

Storing Effects as Memories

Keypresses	Results/Comments
1. Select spots/channels	
2. Go to the Effects editor; assign and edit Effects	
3. Press **[=]** and enter a number on the keypad.	Bump out of the Effect Editor. *Memory* appears in the command line.
4. Press **[STORE]**	'E' in the Memory List flags Effect memories.

➢**Note**
Pressing **[+STORE]** for step 3 stores the Effect as a memory and does not bump you out of the Effect Editor.

Examining memories and Effects

The Base values are displayed differently when the values were assigned using Libraries or without Libraries.

Memories without Libraries

Keypresses	Results/Comments
1. Select the memory	
2. Press **[EXAM 1]**, **[EXAM 2]**, or **[EXAM 3]**	Parameters with Effect assignments show *EF* on a blue field instead of a parameter value.
3. Press **[EFFECT]** to view the base values.	

Memories with Libraries

Keypresses	Results/Comments
1. Select the memory	
2. Press **[EXAM 1]**, **[EXAM 2]**, or **[EXAM 3]**	Parameters with Effect assignments show *EF* on a red field instead of a parameter value.
3. Press **[EXAM]** to view values.	

Examining Effects

Keypresses	Results/Comments
1. Select the memory	
2. Press **[EFFECT]**	
3. Press **[EXAM 1]**, **[EXAM 2]**, or **[EXAM 3]**	The Effect attributes and values are displayed. This exam display resembles the Effect Editor.

Releasing an Effect from a memory

You can erase Effect assignments from all of the participating parameters or from selected parameters.

Example: There are Effect assignments on 4 parameters of the spots in memory 6. Release Effect attributes from all parameters in spots 1 – 4 in memory 6.

Keypresses	**Results/Comments**
1. Select memory 6	
2. Select spots 1 → 4	Memory 6 is the editor.
3. Press the **[EFFECT]**	The Effect Editor is active.
4. Press **[RELEASE]**	All Effect attributes are released.
5. Press **[STORE]**	The modified memory is stored. The values for parameters released from Effects, are the base values that were used in the Effect.

Example: Release Effect attributes from 1 parameter in spots 1 – 4 in memory 6.

Keypresses	**Results/Comments**
1. Select memory 6	
2. Select spots 1 → 4	
3. Press a Parameter key	
4. Press the **[EFFECT]**	The Effect Editor is active.
5. Press **[RELEASE]**	The Effect is released from the selected parameter.
6. Press **[STORE]**	The modified memory is stored. The value for parameter released from Effects, is the base values that was used in the Effect.

Storing an Effect Palette

Any Effect that you have programmed can be stored as an Effect Palette as well as a memory. Effect Palettes do not store the base values from the editor. Only parameters participating in the Effect are stored in the Effect Palette

Keypresses	**Results/Comments**
1. Program an Effect or modify an existing Effect Palette.	
2. Press **[ASSIGN]**	
3. Press **[EFFECT]** NSK mode	Skip this step if the NSK mode is Effect.
4. Press an NSK	The LED goes on. *Effect # Stored* is displayed.

➢Note

Instead of steps 2 – 4, you can use **[=] [EFFECT] [###] [STORE]**. In this case use the **[EFFECT]** key that usually opens the Effect Editor.

Assigning text to an Effect Palette

Keypresses	Results/Comments
1. Press **[EFFECT]** (NSK mode)	Skip this step if the NSK mode is Effect.
2. Press an NSK	
3. Press **[TEXT]**	
4. Type the text on the text keyboard or on use the NSKs in Alpha mode.	
5. Press **[STORE]** on the text keyboard.	Text for effects is displayed in the Effect Palette list.

Or

Keypresses	Results/Comments
1. Press **[EFFECT]** (next to **[Y]**) and enter the Effect number on the keypad.	
2. Press **[TEXT]**	
3. Type the text on the text keyboard or on use the NSKs in Alpha mode.	
4. Press **[STORE]** or press ENTER on the text keyboard.	Text for effects is displayed in the Effect Palette list.

Erasing Effect Palettes

Keypresses	Results/Comments
1. Press **[FREE]**	
2. Press **[EFFECT]** (NSK mode)	Skip this step if the NSK mode is Effect.
3. Press an NSK	The message *Free Effect # or →?* is displayed.
4. Press the NSK again.	The message *Effect # Deleted* is displayed.

Or

Keypresses	Results/Comments
1. Press **[EFFECT]** (next to **[Y]**) and enter the Effect number on the keypad.	
2. Press **[ERASE]**	The message *Free Effect # or →?* is displayed.
3. Press **[ERASE]** again.	The message *Effect # Deleted* is displayed.

Examining Effect Palettes

You can view a list of the Effect Palettes or the contents of Palettes.

Keypresses	Results/Comments
1. Press **[EFFECT]** NSK mode	
2. Press **[EXAM 1]**, **[EXAM 2]**, or **[EXAM 3]**	The Effect Palette list shows the number of the Effect, text, and how many spots/channels are included in the Palette.

Using Effect Palettes

Effect Palettes are accessed on the NSKs in Effect mode. Pre-programmed Effects Palettes can be stored on the hard disk and loaded as needed.

Effect Palettes are not spot specific, so any Effect Palette can be applied to any number or type of spots.

Example: Effect Palette 1 is a Cancan Effect with 3 spots. The Effect can be applied to as many spots as desired.

If the Effect contains Offset or Duty Cycle assignments other than the default (Offset 0, Duty Cycle 1:1). The Effect is applied according to the Offset and/or Duty Cycle. Example: the Effect Palette has 3 spots with an Offset assignment. If it is applied to 6 spots, spot 1 and 4, 2 and 5, 3 and 6 will behave identically.

Keypresses	Results/Comments
1. Select spots	
2. Press the **[EFFECT]** NSK mode	Skip this step if the NSK mode is Effect.
3. Press an NSK	The Effect begins running.

Storing Memories

You can use the Effect Palette to program memories. The memory can then run on any Playback device or as an editor group.

Keypresses	Results/Comments
1. Select spots	
2. Press **[EFFECT]** NSK mode.	Skip this step if the NSK mode is Effect.
3. Press an NSK	The Effect begins running.
4. Press **[=]**	*Mem* appears in the command line.
5. Assign the memory number.	
6. Press **[STORE]**	

Playing Back Effects

On the Crossfaders

Memories or groups containing Effects can run on the crossfaders. When the incoming memory has an Effect it begins running on the Go command.

On the Controllers

When the grp or memory assignment is in XF mode, moving the controller lever fades all the parameters participating in the Effect from tracking or stage.

When the grp or memory assignment is Dim mode, the controller level controls the dimmer of the participating spots. The Effect is constantly running.

You can gain control of the overall Effect rate when effects are running on Controllers. The controller's **[GO]** key increases the rate. The controller's **[HOLD]** key decreases the rate.

Modifying the rate

Keypresses	Results/Comments
1. Press **[CHASE RATE]**	The LED is on, indicating that the Chase Rate function is active.
2. Press **[GO]** or **[HOLD]** to modify the Effect Rate.	The modified rate is displayed on the controller LCD display. The proportionality of the Rates assigned to different parameters in the Effect is preserved.
3. Optional- store the modified rate by pressing **[STORE RATE]**	The message *Effect Rate Stored* is displayed. The Effect runs at the stored rate whenever it is assigned to a controller. The original rate is, however, not overwritten. If you run the Effect in the editor or on the crossfaders, it runs at its original rate.

Mirror Effect

You can switch the rate between hold and a mirror effect. The mirror effect is the same as assigning a negative rate. The Mirror Effect runs at the memory rate unless you modify it.

Keypresses	Results/Comments
1. Press **[CHASE RATE]**	The LED is on, indicating that the Chase Rate function is active.
2. Press and hold **[SHIFT]** and press **[GO]**	Toggles between + rate and – rate.
3. To modify the –MEM rate press **[GO]** to increase the rate or **[HOLD]** to decrease the rate.	

Loading, Recording, and Deleting Effect Files

Effect Palettes are recorded and loaded as part of a show file.

You can also record and load Effect Palettes in dedicated Effect files that are not linked to any specific show.

Effect files are recorded or loaded automatically whenever a show containing Effect files is recorded or loaded. Effect files archived in the show files may be loaded separately using the Effects Only option in the Load menu. The procedure is the same as loading Libraries only, memories only etc.

When the Effect Files option is selected the list of Effect files stored in your current directory is displayed.

Effect files archived in show files and independent Effect files may be loaded as any numbered range, not necessarily the range they were recorded on. They may also be loaded partially; i.e. it's possible to load a range of Effects from a file, not loading the whole file.

Once a file number has been entered, choose a range to load from and a range to load into and confirm. Using this method you may load Effect Palettes from several show files and Effect files.

Effect files can be examined in the Load menu.

Loading Effect files

Effect files are recognized by the E that precedes the file number.

The Effect files option appears on the second page in the Load menu. Access by pressing **F6 More…** .

The keys **F4 Exam File** and **F5 Exam Effects** toggle the display on CRT 2 between the Effects in the Effect file and Effects already in the system.

Keypresses	**Results/Comments**
1. Go to the Load menu.	
2. Press **F1 Effect Files**	Effect files in the current directory are displayed.
3. Enter the file number at the prompt.	
4. Press **F4 Exam File**	The contents of the selected Effect file are displayed on monitor 2.
5. Optional - **F5 Exam Effects**.	The Effect Palettes currently loaded in the system are displayed.
6. Press **F1 All Effects**	
7. Press **F1 Load**	The message *Are You Sure?* is displayed.
8. Press **F1 Yes**	All Effects in the file are loaded to as they appear in the file; Effect 1 as Effect 1, Effect 2 as Effect 2, etc.

You can load only some of the Effects contained in the file.

Example: The Effect file contains Effects 1 – 20. You want to load Effects 1 → 8 starting at Effect number 1.

Keypresses	**Results/Comments**
1. Go to the Load menu.	
2. Press **F4 Effect Files**	Effect files in the current directory are displayed. If there are Effects already in the system, they are displayed on CRT 2.
3. Enter the file number at the prompt.	
4. Optional - Press **F4 Exam File** or **F5 Exam Effects**	The selection is displayed on monitor 2.
5. Press **F2 Effect #**	The prompt *Effect # to Load:* is displayed.
6. Enter **5** at the prompt.	
7. Press **F2 Thru Effect #**	You are prompted for an Effect number.
8. Enter **8** at the prompt.	
9. Press **F3 To Effect #**	The prompt *Start at Effect #* is displayed.
10. Enter **1** at the prompt.	
11. Press **F1 Load**	You are prompted to confirm the command.
12. Press **F1 Yes**	In Effect mode NSK LEDs for 1 → 8 are lit.

You can load Effects to numbers different than appear in the file.

Example: The Effect file contains Effects numbered from 1 – 20. You want to load them as Effects 21 – 40. When loading this file, you request that the load begin at Effect 21.

Keypresses	**Results/Comments**
1. Go to the Load menu.	
2. Press **F1 Effect Files**	Effect files in the current directory are displayed.
3. Enter the file number at the prompt.	
4. Optional - Press **F4 Exam File** or **F5 Exam Effects**	This selection is displayed on monitor 2.
5. Press **F1 All Effect**s	
6. Press **F2 To Effect**	The prompt *Start at Effect #* is displayed.
7. Following the example above, enter number **21**.	
8. Press **F1 Load**	You are prompted to confirm the command.
9. Press **F1 Yes**	In Effect mode NSK LEDs for 21 → 40 are lit.

Loading Effect files from a show file

You can choose to load the Effect files that are stored in a particular show.

Keypresses	Results/Comments
1. Go to the Load menu.	
2. Press **F1 Play/Act**	The system prompts for a show file number.
3. Enter the file number in response to the prompt.	
4. Press **F6 More…**and **F4 Effects Only**	
5. Optional – Exam the Effects File or the Effects in the system.	
6. Press **F1 All Effects**	
7. Press **F1 Load**	You are prompted to confirm the command.
8. Press **F1 Yes**	

Recording dedicated Effect files

Whenever you record a show containing Effect Palettes, the Effect Palettes are stored with the show. You can also store Effect Palettes in dedicated Effect files. The Effect file includes all of the Effect Palettes in the system at the time of the recording.

Keypresses	Results/Comments
1. Go to the Record menu.	
2. Change directory if necessary	
3. Press **F6 More…** and **F1 Effect Files**	All of the Effect files in the current drive are displayed.
4. Enter a file number.	
5. Press **F2 Text** and type a label for the file. (optional)	
6. Press **F1 Store**	
7. Press **F1 Yes**	*Record Complete* is displayed.

Deleting Effect files

Keypresses	Results/Comments
1. Go to the Delete menu.	The files in the current directory are displayed.
2. Press **F6 More** and **F1 Effect Files**	Sabre prompts for a file number.
3. Enter the file number.	
4. Press **F1 Delete**	

The Effects Package

A predefined Effects Package is included on the Hard Disk.

An Effects archive can be downloaded from our web site and loaded in Sabre. The archive is named – Compulite Effect package v1.0.

Modifying preprogrammed Effects

The basic effect attributes that you will probably need to change to suit your application are Size, Rate, and Base.

Example: Adapt a preprogrammed Circle Effect.

Keypresses	Results/Comments
1. Select Spots	
2. Press **[EFFECT]** (NSK mode).	Skip this step if the NSK mode is Effect.
3. Press the NSK for the Circle Effect.	The selected spots begin running the Effect.
4. Press **[EFFECT]** (next to **[Y]**) to open the Effect Editor.	The Effect Editor is displayed.
5. Move the Size wheel to change the Size of the Effect.	
6. Use the Rate wheel to change the speed of the Effect.	
7. The Base value determines the center of the circle, to change the base values use the Trackball.	
8. Store the modified Effect as a memory or as an Effect Palette.	

Further simple modifications can be made to the Effect. Example: Select all of the odd numbered spots participating in the effect and reverse the direction by pressing the **[NEG]** option under the Rate attribute. This results in all even numbered spots rotating clockwise and odd numbered spots rotating counter clockwise. You can then synchronize the movements by pressing **[ALL]** under the Offset attribute and pressing **[0]** on the numeric keypad.

➢Note

All selected parameters (parameters appearing in red) are affected by any changes in the Effect Editor. If necessary deselect parameters.

Using Effects for programming

You can freeze Effects that are running in the Effect Editor or the Stage Editor and store the resulting light state as a memory or a library.

Libraries stored when the editor is in Freeze Effect take the stage values. Libraries stored when an Effect is running take the Base values of the parameters participating in the Effect. Using Freeze Effect for programming Position and Color Libraries is especially useful.

A memory or Effect Palette stored during Freeze Effect ignores the Freeze State. The memory or Effect Palette is stored as usual, referencing the Effect Editor.

Freeze Effect is automatically released when going from the Stage Editor to the Effect Editor.

When Freeze Effect is applied in the Effect Editor it is not released when going to the Stage Editor.

Freezing an Effect

Keypresses	Results/Comments
1. Press **[FREEZE EFFECT]**	The Effect stops running. The message *Freeze Effect* blinks at the top of the screen.

Releasing the freeze state

Keypresses	Results/Comments
1. Press **[FREEZE EFFECT]**	The Effect resumes and the *Freeze Effect* message is no longer displayed.

Programming Libraries using freeze effect

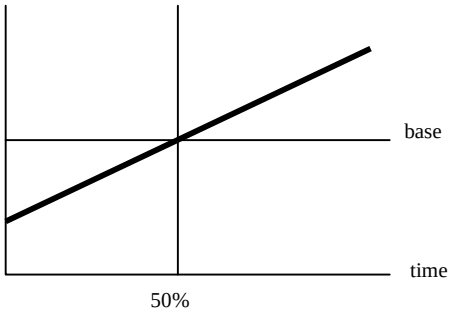
Keypresses	Results/Comments
1. Start an Effect in the Effects editor or Stage editor.	
2. Press **[FREEZE EFFECT]**	The Effect stops running. The message *Freeze Effect* blinks at the top of the screen.
3. Press **[ASSIGN]**	The message is displayed.
4. Press **[POSITION]**	Skip this step if the NSK mode is Position.
5. Press an NSK	The message *Pos # Stored* is displayed.
6. Press **[FREEZE EFFECT]**	The Effect resumes.

➢Tip

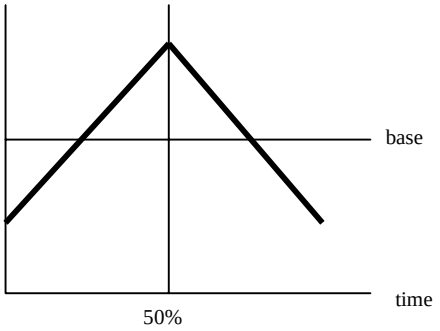
For one press access make a Macro for **[FREEZE EFFECT]**.

Types of Primitives

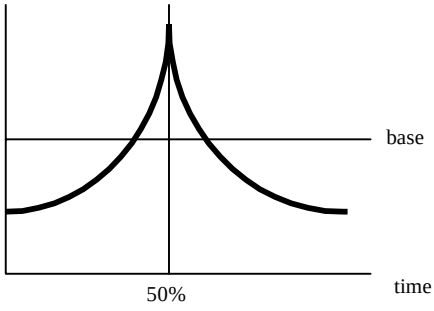
Ramp



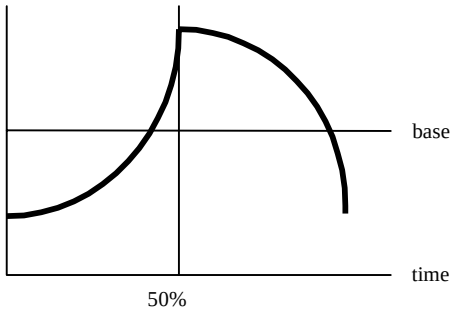
Saw



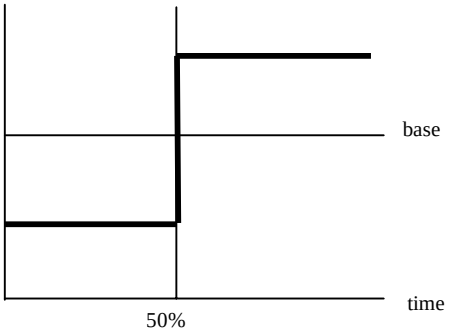
Power



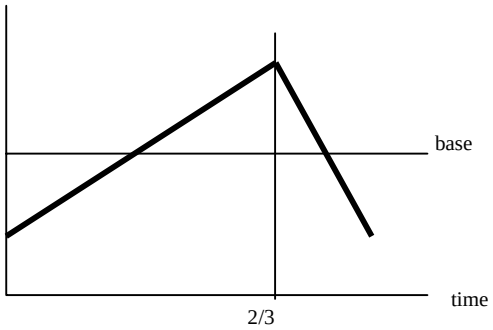
Wave



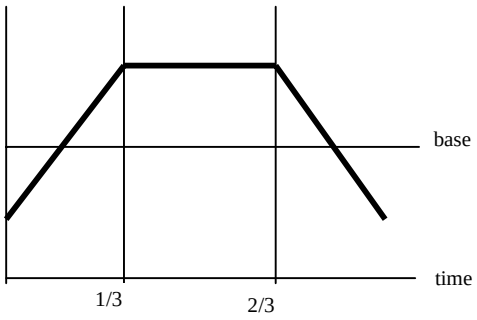
Step



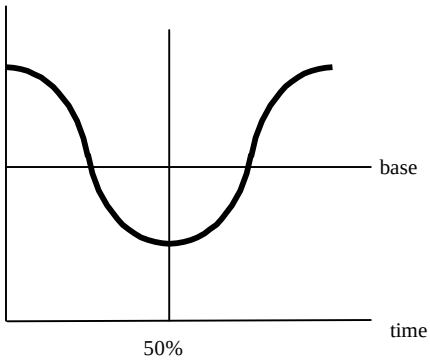
Tri



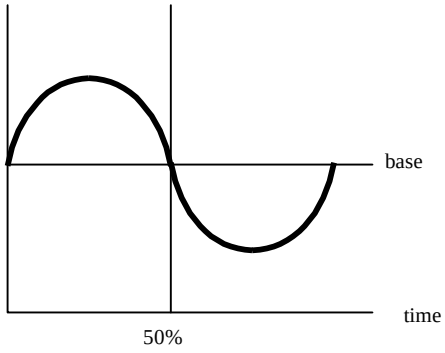
Trpz



Cosine



Sine



Some examples of how to use Primitives to program Effects:

Shape	**Primitive**	**Rate**	**Offset**	**Duty Cycle**
Circle X Y	Sine Cosine	R R	0 0	1:1 1:1
Figure 8 X Y	Sin Cosine	R R x 2	0 25	1:1 1:1
Triangle X Y	Tri Saw	R R	0 0	1:1 2:3
Square X Y	Trpz Trpz	R R	0 25	3:4 3:4

CHAPTER 21
PART Qs

This chapter includes:

Overview

Memories can be divided into 9 Parts, Part 0 through Part 8. Each Part consists of a group of spots, spot parameters, and/or channels. Each Part is assigned its own time-in or wait-in time. A spot, parameter, or channel can be assigned to only one Part.

You may assign all spot parameters or only selected parameters to a Part. For example, the gobo parameter of a spot may be assigned to a Part, causing it to change after the rest of the spot's parameters have changed.

Intensity and spot parameters, assigned to different Parts, appear in different colors. To view the color code for Parts, press **[PART]** when the editor is idle.

When the current and incoming memory (the memory on board) have spots in common, the colored Part flag appears on the stage display. This is to let you know that the next memory is a Part Q.

Part #	Color
0	no color
1	light green
2	light gray
3	light blue
4	brown
5	light cyan
6	light violet
7	cyan
8	orange

Spots, spot parameters, and channels not otherwise assigned belong to Part 0.

The recorded memory time belongs to the spots and channels in Part 0.

Part Q's are played back on the A/B crossfader only. At the Go command all of the Parts start crossfading at the same time. A wait-in time assigned to a Part causes the Part to begin fading after other Parts.

Programming Memories with Parts

Spots, channels, and selected spot parameters can be assigned to Parts during the initial memory programming. Existing memories can be divided into Parts.

Programming a Part with spots

Example: Assign spots 1 - 5, in their entirety, to Part 1.

Keypresses	Results/Comments
1. Select spots and assign parameter values.	
2. Select spots 1 → 5 and assign parameter values.	
3. Press **[PART] [1]**	A green dash is displayed next to all of the parameter values in the selected spots.
4. Press **[TIME] [3]**	
5. Press **[WAIT] [2]**	
6. Press **[=] [1]**	
7. Press **[STORE]**	The message *Memory 1 Stored* is displayed.

Programming a Part with spot parameters

Specific spot parameters can be assigned to Parts

Example: Assign parameter 6 of spots 1 - 5 to Part 1.

Keypresses	Results/Comments
1. Select spots 1 → 5.	
2. Select parameter 6 and assign a value.	
3. Press **[PART] [1]**	Assign the selected parameter to Part 1. A green dash is displayed next to the selected parameters.
4. Press **[TIME] [3]**	Assign a fade of 3 counts to the selected parameter in Part 1.
5. Press **[WAIT] [2]**	Assign a wait time: the amount of time Part 1 will wait before commencing its fade.
6. Press **[=] [1]**	
7. Press **[STORE]**	The message *Memory 1 Stored* is displayed.

Programming a Part with channels

Example: Program memory 1. Memory 1 contains channels 1 → 20. Channels 1 → 5 are assigned to Part 1. Assign Part 1 fade times; time-in 3 seconds, wait 2 seconds. Channels 6 → 10 are assigned to Part 2.

Keypresses	Results/Comments
1. Select channels 6 → 20 and assign intensity.	
2. Select channels 1 → 5 and assign intensity.	
3. Press **[PART] [1]**	The intensity for channels 1 → 5 are displayed in green - the color code for Part 1.
4. Press **[TIME] [3]**	
5. Press **[WAIT] [2]**	The wait time is the amount of time Part 1 will wait before commencing its up fade.
6. Select channels 6→ 10 and assign intensity.	
7. Press **[PART] [2]**	The intensity for channels 1 → 5 are displayed in gray - the color code for Part.
8. Press **[TIME] [8]**	
9. Press **[=] [1]**	
10. Press **[STORE]**	The message *Memory 1 Stored* is displayed.

Programming a Part with scrollers

Example: Program memory 1 and assign channels 1 → 5 at frame 6 to Part 2.

Keypresses	Results/Comments
1. Select channels and assign intensities	Channels that are not assigned to a specific Part will be in “Part 0” when the memory is recorded.
2. Select channels 1 → 5.	
3. Press **[FRAME]**	The scroller flag is displayed in red.
4. Assign frame 6	
5. Press **[PART] [2]**	The scroller frame is displayed in light gray - the color code for Part 2.
6. Press **[TIME] [3]**	Assign an up fade time of 3 to Part 1.
7. Press **[WAIT] [2]**	Assign a wait time: the amount of time Part 1 will wait before commencing its up fade.
8. Press [**=] [1]**	
9. Press **[STORE]**	The message *Memory 1 Stored* is displayed.

Dividing a Memory into Parts

Memories can be divided into Parts after they have been programmed.

Keypresses	Results/Comments
1. Select memory 1	
2. Select channels 1 → 5.	The memory is now active on stage. The modification may be done in blind mode.
3. Press **[PART] [1]**	The intensity assignments of the selected channels are displayed in green.
4. Press **[TIME] [3]**	
5. Press **[WAIT] [2]**	
6. Select channel 4	
7. Press **[PART] [2]**	The intensity assignment of the selected channel is displayed in gray.
8. Press **[WAIT] [8]**	
9. Continue programming Parts	
10. Press **[STORE]**	Memory 1 is stored with its Part assignments.

Adding a Part to a Memory

In the example below, Part 3 consisting of parameter 2 spot 5 is added to the last recorded memory.

Keypresses	Results/Comments
1. Select spot 5.	
2. Select parameter 2.	
3. Assign a value to parameter 2.	
4. Press **[MEMORY]**	If no memory number is entered, the Part is added to the last recorded memory. To add this Part to another memory, enter a memory number at this point.
5. Press **[PART] [3]**	Assign a Part number.
6. Assign a fade time.	
7. Press **[STORE]**	

Modifying a Part

You can select one Part of a memory for modification. When modifying a Part, only the channels/spots in the selected Part are live.

Example: Modify memory 1 by changing the intensity of channel 8 in Part 5.

Keypresses	Results/Comments
1. Select memory 1.	
2. Select Part 5	
3. Select channel 8.	The Part is now active on-stage.
4. Modify the intensity	
5. Press **[STORE]**	The message *Memory 1 Stored* is displayed.

Removing channels/spots from Parts

To remove a channel or spot from a Part, but retain it in the memory, reassign it to Part 0. Channels and spots can be reassigned to any Part.

Example: Remove spot 5 from its Part assignment in memory 1.

Keypresses	Results/Comments
1. Select memory 1.	
2. Select spot 5.	The memory is now live on-stage.
3. Press **[PART] [0]**	
4. Press **[STORE]**	The message *Memory 1 Stored* is displayed.

Removing Part assignments

Removing a Part assigns the channels and spots in the Part to Part 0.

Example: Remove Part 3.

Keypresses	Results/Comments
1. Select memory 1.	
2. Press **[PART] [3]**	
3. Press **[ERASE]**	The message *Memory 1 Stored* is displayed.

Modifying time assignments

Example: Change the time assignment for Part 5 in memory 1. This modification does not turn on the spots/channels in the selected Part.

Keypresses	**Results/Comments**
1. Select memory 1.	
2. Select Part 5	
3. Press **[TIME]**	
4. Enter the new time assignment	
5. Press **[STORE]**	The message *Memory 1 Stored* is displayed.

Using Part Assignments as Groups

Parts may be converted to editor groups by selecting a Part assignment.

Example: Select the channels that are assigned to Part 6 in memory 8.

Keypresses	**Results/Comments**
1. Select memory 8.	
2. Select Part 6.	
3. Press **[ENTER]**	The channels and spots in Part 6 become a group in the editor.

CHAPTER 22
MACROS

This chapter includes:

Overview

Sabre stores up to 999 Macros each containing up to 40 keystrokes each.

Macros are programmed blind, in the Macro menu, or live using the Teach Macro function.

There are options in the Macro menu for programming Macros for frequently used functions or special functions. An example of a Macro for a frequently used function is Print. When activated this Macro works as "Print Screen" does on an alphanumeric keyboard.

Macros may be triggered manually by selecting and operating the Macro or triggered automatically through Events.

Macros in Events assigned to memories operate in conjunction with memories sequencing on the A/B crossfader. This is handy for loading and running loops on the C/D fader, Chasers, entering Snaps, making assignments to the Submasters and the joystick, clearing assignments, and executing editor functions. Judicious use of Macros make programming and running complicated shows easy.

The Macro Menu

The Macro menu is menu number 9.

Programming a Macro for a chaser

For an example of a typical Macro see below. This Macro assigns and runs the loop of memories 50 - 55 (which, for instance, changes the colors of a cyclorama) and runs a chaser of backlights (memories 70 - 80).

Keypresses	**Results/Comments**
1. Press **F1 Create**	A blue window opens and prompts for the Macro number.
2. Enter the Macro number. If the number is higher than 5, choose **F6 Macro #** and enter a three digit number on the keypad. Or Enter the number and press **F1 Enter** Macro number 1 -100 can be selected using the numeric soft keys.	
3. Select memory 50	
4. Press **[HARD]** or **[SOFT]**	
5. Press **[DIM]** or **[XF]** for controller assignment.	
6. Press the controller's **[DIM]** key.	This is the Go command.

Keypresses	Results/Comments
7. Press **[MEMORY] [70 → 80]**	Select the memory range for assignment.
8. Press **[DIM]** or **[XF]** for controller assignment.	
9. Press the controller's **[DIM]** key.	This is the Go command.
10. Press **F1 Store Macro**	Pressing **F1** operates the sequence described above.

Modifying Macros

Modify Macros by deleting an erroneous entry or inserting a new entry.

New entries are inserted in front of the cursor.

The instructions below show deletion of an error.

Keypresses	Results/Comments
1. Press **F3 Modify**	Sabre prompts for a Macro number.
2. Enter the Macro number in response to the prompt.	A window containing the selected Macro opens.
3. Use the arrows to position the cursor over the error.	
4. Press **[CE]**	The erroneous entry is erased.
5. Insert the correct keypress	
6. Press **F1 Store Macro**	

Linking Macros

A Macro may be linked to another Macro. Linked Macros operate with a single keypress.

Linked Macros must be the last entry in a Macro sequence.

Example: Macro 12 is linked to Macro 50.

Keypresses	Results/Comments
1. Press **F1 Create**	
2. Press **F6 Macro #**	Enter the new Macro number on the keypad. In this case, 050.
3. Execute desired keystrokes	Remember! Up to 40 keystrokes are allowed. Leave room for the linked Macro.
4. Press **F5 Macro #**	This option permits linking a Macro.
5. Enter the Macro number on the keypad.	
6. Press **F1 Store**	Store Macro 50.

Special Macros for special functions

Macros can be created for special system functions or for frequently used functions. These dedicated special functions are accessed under **F1 Create Macro**.

They include:

- Print
- Record
- Load
- Flip spot
- Toggle on
- Toggle off

Programming a special function Macro

Keypresses

1. Enter the Macro menu.
2. Press **F1 Create**
3. Select the Macro number
4. Select the function using the appropriate F key
5. Press **F1 Store Macro**

Using dedicated function Macros

Record

A Macro key assigned as Record saves opening the record menu.

Keypresses

1. Select the designated Macro key. *Record* is displayed in the command line.
2. Enter a show file number.
3. Press the designated Macro again. This starts the record function.

Load

Keypresses

1. Select the Macro key designated as load.
2. Enter the play number of the show file you want to load.
3. Press the designated Macro key again.

Flip Spot

Applying this function flips the x/y 180 degrees returning it to its current position.

This is a particularly useful function for yokes or moving devices whose heads have 360-degree movement.

Example: in its current position a yoke is at the limit of its pan movement and you want to continue to move the yoke on its pan axis. Apply the flip function. The yoke will reverse the x/y axes 180 degrees, returning to its current position and freed from the constraints of the movement limits. Now you can continue the movement as desired without being hampered by the limit switch.

Keypresses

1. Select a spot or a range of spots.
2. Press the Macro key designated as the flip function.

(Toggle) On and (Toggle) Off

It is apparent that toggle keys included in Macros might not always give the same results. This depends, of course, on the toggled state at the time the Macro is operated.

Example: Assume that your Macro includes a selection on the NSKs. This selection is 60. Obviously **[51 – 100]** was pressed to toggle to the second page of NSKs before selecting 60.

It may happen that when the Macro is operated, the NSKs are already toggled to 51 - 100, therefore your Macro will not operate correctly. The ON/OFF function “anchors” the toggle keys so they perform as intended when they are operated through Macro sequences.

Choosing ON in the Macro menu forces the key to On.

Choosing OFF forces the key to Off.

On/Off must be selected before entering the toggle key in the Macro sequence.

This is how the behavior of Q-Keys is influenced by this function:

- The Q-Key is defined as On in the Macro. If the Q-Key is not active on stage it fades up. If the Q-Key is active on stage it becomes the highest priority among the Q-Keys.
- The Q-Key is defined as Off in the Macro. If the Q-Key is active on stage it fades out. If it is not active on-stage it does not fade in, i.e. nothing happens.

This is how **[PILE ON]** works:

- If the Macro is **[PILE ON]** On - the Q-Keys are always set to Pile On mode.
- If the Macro is **[PILE ON]** Off - the mode is always Solo.

The example below shows how to create a Macro that cancels the toggle for fade up and fade down of Q-Keys.

Keypresses

1. Press **F1 Create**
2. Press **F1**
3. Press **Q-KEY**
4. Press **F2 ON**
5. Press **[51 – 100]**
6. Select a Q-Key
7. Press **F1 Store**

Adding text to Macros

A caption, typed on the alphanumeric keyboard, may be added to a Macro.

Enter text for the Macro before the Macro is created or add text to an existing Macro.

Keypresses	Results/Comments
1. Press **F4 Text**	
2. Enter a Macro number	
3. Type the text	
4. Press **F1 Store Macro**	The text is stored and the system is ready for Macro programming.
5. Press **F1 Store Macro**	If the Macro exists, Sabre asks for a confirmation command.

Erasing a Macro

Keypresses	Results/Comments
1. Press **F2 Delete**	Sabre prompts for a Macro number.
2. Enter the Macro number	
3. Press **F1 Store**	The Macro is deleted and no longer appears on the Macro list.

Programming Macros Live with Teach Macro

The Teach Macro function allows you to create Macros live, thus viewing the result of each keypress that you include in the Macro. The Teach Macro function also allows you to create Macros for menu functions.

You can open the Teach Macro window at any point to view the accumulated keys. Press **[TEACH MACRO]**. Macro recording may be temporarily disabled (see below).

It is important to remember that Macros are a collection of keystrokes. Any manual fader or wheel movement are recorded Macros.

Keypresses	**Results/Comments**
1. Press **[TEACH MACRO]**	
2. Press **[ENTER]**	"Teach Macro [e] appears at the top of the display. This flag flashes as long as the function is active.
3. Build the keystroke sequence for the Macro	All results are seen live on stage. Any key pressed while this function is active will be included in the Macro.
4. Press **[TEACH MACRO]**	The Teach Macro window opens. The highest recorded Macro number is displayed in.
5. Select a function key among the options provided (see below).	

The available options are:

Option	**What it Does**
F1 (+1) Store	The collection of keystrokes is stored as the last recorded Macro + 1.
F2 Macro #	Use this to assign a Macro number and then press **F1 (+1) STORE** to store the Macro.
F3 Text	Type text on the alphanumeric keyboard. Text can be added to existing Macros only.
F4 Disable	Temporarily disable the Teach Macro function. Keys pressed while the function is disabled are not gathered into the Macro under construction. The Teach Macro flag is blacked out while the function is disabled. Return to the Teach Macro function by pressing **[TEACH MACRO]** and **F4** to re-enable the function.
F5 Erase	Clear all the keystrokes already collected.
F6 Exit	After disabling the function, thus closing the Macro window. If you have opened the Teach Macro window to view the accumulated keystrokes, use this key to close the window and continue. **This does not store the Macro!**

Operating Macros

There are a few ways to operate Macros.

Macros can be operated through Events assigned to memories sequencing on the crossfaders. Macros are also operated using the dedicated Macro keys, the numeric keypad, and the Numeric Soft Keys in Macro mode.

Operating Macros

[F1] – [F5] provide direct single press access to Macros 1 - 5. The Macro operates when the key is pressed.

The keys **[MACRO 101] – [MACRO 108]** provide direct single press access to Macros 101 - 108. The Macro operates when the key is pressed.

Operate Macros 1 – 999 by pressing the required NSK in Macro mode. The Macro operates when the key is pressed.

Operating Macros using the numeric keypad

Keypresses	Results/Comments
1. Press **[F6]**	The Macro list is displayed.
2. Select the Macro.	
3. Press **[F6]**	The Macro is triggered.

CHAPTER 23
SNAP

This chapter includes:

Overview

Snaps are 'snapshots' of all playback device assignments. Snaps include playback modes and options.

Store up to 999 Snaps.

Snaps are created by assigning groups, chasers, memories to any of the various playback devices (A/B, C/D, chasers, controllers, submasters, and the joystick) and storing the board assignments.

This is analogous to pages of presets on other lighting consoles. Snap stores all assignments, so be sure that you have no extraneous fader or controller assignments.

In addition to the assignments themselves, the assignment type or run mode information is also recorded in the Snap.

Playback Device	What is recorded in Snaps
A/B	• Memory assignments. • Grp assignments. • The Auto Assign status. • The **[SEQ]** status (active/inactive).
C/D	• Memory assignments. • Grp assignments. • The Reverse Direction status. • The **[SEQ]** status (active/inactive).
Controllers/Chasers	• Memory assignments to controllers. • Grp assignments to controllers. • The assignment mode (Dim or XF). • Parameter assignments (roll up) to controllers. • Hard Chaser assignment. • Soft chaser assignment
Submasters	• Blackout button active
Q-Keys	• Memory assignments • Q-Key mode

Programming Snaps

Example: Program Snap 9 using the Numeric Soft Keys.

Keypresses	Results/Comments
1. Make assignments to controllers and crossfaders	
2. Press **[ASSIGN]**	
3. Press **[SNAP]**	Skip this step if the NSK mode is Snap.
4. Press NSK [**09]**	The message *Snap 10 Stored* is displayed.

Example: Program Snap 9 using the numeric keypad.

Keypresses	Results/Comments
1. Assign memories, chasers, and grps to the controllers and crossfaders. Assign memories to the Q-Keys.	
2. Press **[SNAP]**	*Snap* is displayed in the command line.
3. Enter 9 on the keypad.	
4. Press **[STORE]**	The message *Snap 9 Stored* is displayed.

Overwriting Snaps

Example: Overwrite Snap 35.

Keypresses	Results/Comments
1. Make assignments to playback devices.	
2. Press **[SNAP]**	*Snap* is displayed in the command line.
3. Press NSK 35.	The message *Snap Exists* appears.
4. Press NSK 35 again. If you do not want to overwrite Snap 35 press another NSK.	

Or

Keypresses	Results/Comments
1. Make assignments to playback devices.	
2. Press **[SNAP]**	*Snap* is displayed in the command line.
3. Enter 35 on the keypad.	
4. Press **[STORE]**	The message *Snap Exists* appears.
5. Press **[STORE]** again. If you do not want to overwrite the Snap enter another number.	

Adding Text to Snaps

Text labels can be attached to Snaps. This is useful if, for instance, each Snap represents the board assignments for different songs.

Keypresses	Results/Comments
1. Press **[SNAP]**	
2. Enter the Snap number on the keypad.	*Snap #* is displayed in the command line.
3. Type text on the keyboard or use NSK Alpha mode.	The text appears in the command line.
4. Press **[STORE]**	The Snap text is displayed in Snap Exam and Soft Key Exam.

Examining Snaps

Viewing the Snap list

Keypresses	Results/Comments
1. Press **[EXAM 1]**, **[EXAM 2]** or **[EXAM 3]**	
2. Press **[SNAP]**	A list of the Snaps and any textual notes is displayed. This is a strong display.

Examining selected Snaps

The selected Snap exam may have up to 3 pages of information.

Page 1 The board assignments and playback modes

Page 2 Submaster Wing assignments (if a Submaster Wing is connected)

Page 3 Q-keys assignments (if present)

If there is more than 1 page of information available the message *Page up* appears at the top of the screen.

Keypresses	Results/Comments
1. Press **[EXAM 1]**, **[EXAM 2]** or **[EXAM 3]**	
2. Press **[SNAP]**	Skip this step if the NSK mode is Snap.
3. Press an NSK	The assignments, assignment types, and assignment modes are displayed. This is a weak exam; any keypress bumps it out.

Operating Snaps in Non Forcing Mode

There are two Snap operation modes: non-forcing and forcing mode.

Non-forcing mode Snaps do not change Sabre's current output.

Operating a Snap in the non forcing mode affects only controllers that are at 0% and C/D when there is no assignment. If a controller is off its bottom end stop, its Snap assignment "waits in the wings" until the controller is returned to 0%.

Example: In Snap 1 controller 8 has a group assignment. When the Snap is operated, controller 8 has a different assignment and is at 80%. All of the Snap assignments execute (assuming the controllers are at 0%), except the assignment to controller 8. When controller 8 to is returned to 0%, the waiting Snap is assigned.

Controllers with waiting Snaps are displayed on a white field. When the controller is returned to its bottom end-stop, the waiting assignment jumps in and the display reverts to its usual color.

Example: Operate Snap 25

Using the numeric keypad

Keypresses	Results/Comments
1. Press **[SNAP]**	*Snap* appears in the command line.
2. Enter 25 on the keypad	
3. Press **[ENTER]**	'Snaps' all the assignments in Snap 25 into their playback devices providing the playback device does not control any current output.

Using the NSKs

Keypresses	Results/Comments
1. Press **[SNAP]**	Skip this step if the NSK mode is Snap.
2. Press NSK 25	'Snaps' all Snap 25 assignments to their playback devices providing the playback device does not control any current output.

Operating Snap in Forcing Mode

Operating a Snap in the forcing mode affects all assignments, regardless of their output level. If a controller is off its bottom end-stop, the incoming Snap assignment bumps out the current assignment. Current C/D assignments are also bumped out by incoming Snap assignments.

Referring to the example above, the group assignment to controller 8 bumps out the assignment on controller 8 and is, of course, immediately active on-stage.

Example: Operate Snap 25

Using the numeric keypad

Keypresses	Results/Comments
1. Press **[SNAP]**	*Snap* appears in the command line.
2. Press **[+]**	This indicates the forcing mode.
3. Enter 25 on the keypad	
4. Press **[ENTER]**	'Snaps' all Snap 25 assignments to their playback devices regardless of the current status of the playback devices.

Using the NSKs

Keypresses	Results/Comments
1. Press the NSK mode key **[SHIFT] [SNAP+]**	
2. Press NSK 25	'Snaps' all Snap 25 assignments to their playback devices regardless of the current status of the playback devices.

Snaps and the A/B Crossfader

An A/B assignment in a Snap is executed for the non-active fader. Example: The Snap assignment is memory 10 to A and memory 11 to B. The current A/B assignment is memory 2 on A and memory 3 on B. B is the active fader. When the Snap is operated the assignment is made to A. B is ignored.

There is the option to include or remove the A/B crossfader from Snap commands, even though the Snap may contain assignments to A/B. This option is located in the System Parameters menu.

Disabling Snaps to A/B

Keypresses	Results/Comments
1. Go to System Parameters menu (menu 8)	
2. Move the cursor to *A/B in Snap*	
3. Press **F1 Enter**	
4. Press **F2 No**	Now Snap commands do not change the assignments on the A/B crossfader.

To return A/B to Snap control follow the above procedure and press **F1 Yes**.

Erasing a Snap

Example: Erase Snap 25.

Using the numeric keypad

Keypresses	**Results/Comments**
1. Press **[SNAP]**	*Snap* appears in the command line.
2. Enter 25 on the keypad	
3. Press **[ERASE]**	Sabre asks *Are You Sure?*
4. Press **[ERASE]** again.	The message *Snap(s) Deleted* is displayed.

Using the NSKs

Keypresses	**Results/Comments**
1. Press **[FREE]**	The message *Free NK\→?* Is displayed.
2. Press **[SNAP]**	Skip this step if the NSK mode is Snap.
3. Press NSK 25	

CHAPTER 24
EVENTS

This chapter includes:

Overview

Events are a collection of assignments to playback devices and playback commands that can be triggered by SMPTE time code assignments, operated in the editor, or assigned to memories. An Event assigned to a memory operates automatically when the memory sequences on the A/B crossfader.

[AUTO ASSIGN] must be active (LED on) to operate Events assigned to memories.

Events include assignments and playback commands to A/B, C/D, Controllers, Submasters, and the Joystick. Events can operate Macros.

Events are preprogrammed in the Event menu, menu 21.

Changing the Q-List

You can change the default Q-List from the Event menu.

Keypresses	Results/Comments
1. Press **F4 Change Q-List**	Sabre prompts for a Q-List number.
2. Enter the new default Q-List number.	
3. Press **F1 Enter**	The default Q-List is displayed under the Event List.

Events for crossfaders

Keypresses	Results/Comments
1. Go to the Event menu.	
2. Enter an Event number at the prompt.	
3. Press **F1 A/B**	
4. Press **F1 QList #** (optional)	The Q-List Exam is displayed.
5. Enter a QList number at the prompt	If you do not specify a QList the memory assignment is taken from the default QList.
6. Press **F2 Memory #**	The Memory List is displayed.
7. Enter a memory number.	
8. Press **F3 Man** or **F4 Go**.	The Event is displayed in the Event List.

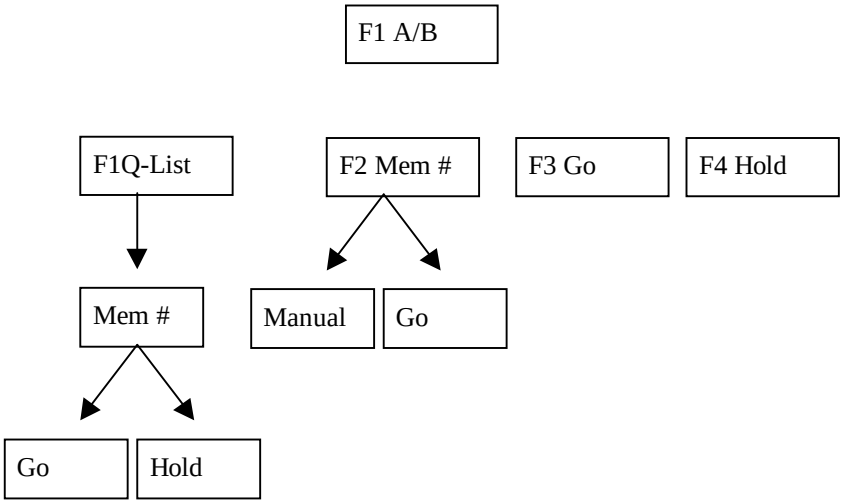


Figure 1 Events for A/B

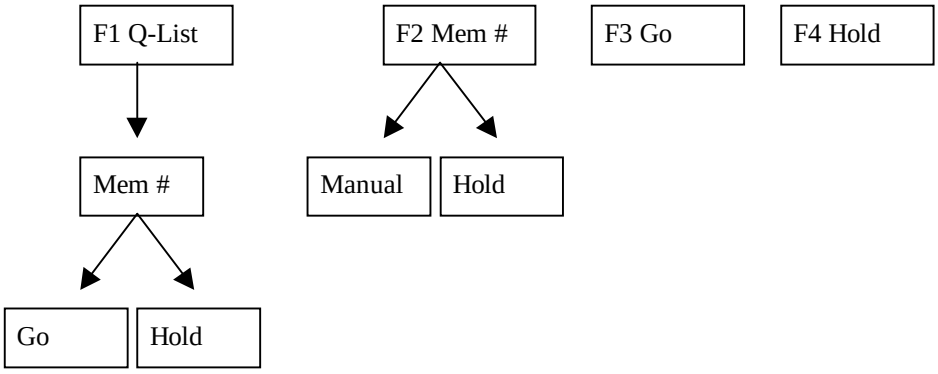


Figure 2 Events for C/D

Events for controllers

There are two pages for Events on controllers.

F1 QList #	F2 Mem #	F3 Group #	F4 Go	F5 Hold	F6 More

F1 Sleep	F2 Hard	F3 Soft	F4 XF	F5 Dim	F6 More

F1 QList #	Assign entire Q-Lists or arrange of memories from a Q-List. The assignment can include a Go command.
F2 Mem #	Assign a memory or a range of memories (chaser) in Hard or Soft mode. The assignment can include a Go command.
F3 Group	Assign Groups to controllers in XF or Dim mode.
F4 Go	Give a Go command to a controller.
F5 Hold	Give a Hold command to a controller.
F6 F1 Sleep	Stop and release a chaser. The released parameters, channels, scrollers bump to tracking.
F6 F2 Hard	Change the chaser assignment to Hard mode.
F6 F3 Soft	Change the chaser assignment to Soft mode.
F4 XF	Change the assignment mode or black out controller output.
F5 Dim	Change the assignment mode or black out controller output.

Assigning Q-Lists

Keypresses	Results/Comments
1. Go to the Event menu.	
2. Enter an Event number at the prompt.	
3. Press **F3 Cntrlrs**	
4. Enter a controller number at the prompt.	
5. Press **F1 QList #**	The Q-List Exam is displayed.
6. Enter a QList number at the prompt	If you do not specify a QList the memory assignment is understood to be from the default QList.
7. Press **F1 Memory #**	The Memory List is displayed.
8. Enter a memory number at the prompt.	
9. Press **F4 X-fade** or **F5 Dim**	The Event is displayed in the Event List.

Assigning a chaser

Keypresses	Results/Comments
1. Go to the Event menu.	
2. Enter an Event number at the prompt.	
3. Press **F3 Cntrlrs**	
4. Enter a controller number at the prompt.	
5. Press **F1 QList #**	The Q- List Exam is displayed.
6. Enter a QList number at the prompt	If you do not specify a QList the memory assignment is understood to be from the default QList.
7. Press **F2 Memory #**	The Memory List is displayed.
8. Enter a memory number at the prompt.	
9. Press **F1 Thru Memory #** and enter a memory number at the prompt	Skip this step if the first memory selected is the first memory of a chaser loop.
10. Press **F2 Hard** or **F3 Soft**	
11. Press **F1 Go** or **F2 Man**	The Event is displayed in the Event List.

Using an Event to change the chaser mode

Keypresses	Results/Comments
1. Go to the Event menu.	
2. Enter an Event number at the prompt.	
3. Press **F3 Cntrlrs**	
4. Enter a controller number at the prompt.	
5. Press **F1 Xf** or **F2 Dim** or **F3 Hard** or **F4 Soft** or **F5 Sleep**	The Event is displayed in the Event List.

The charts below show the Event menu tree memory, for Q-List, and Group assignments

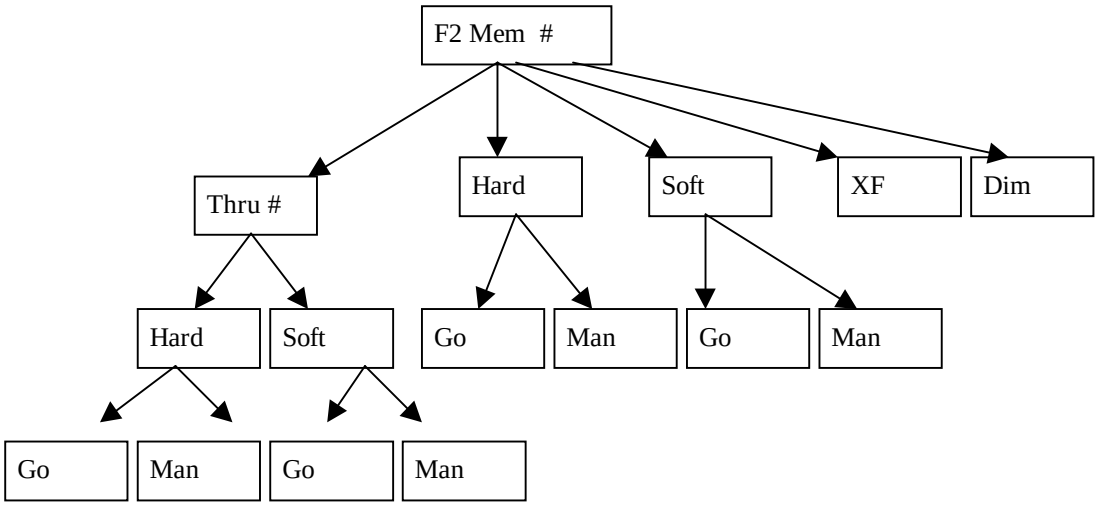


Figure 3 Events for memory assignments

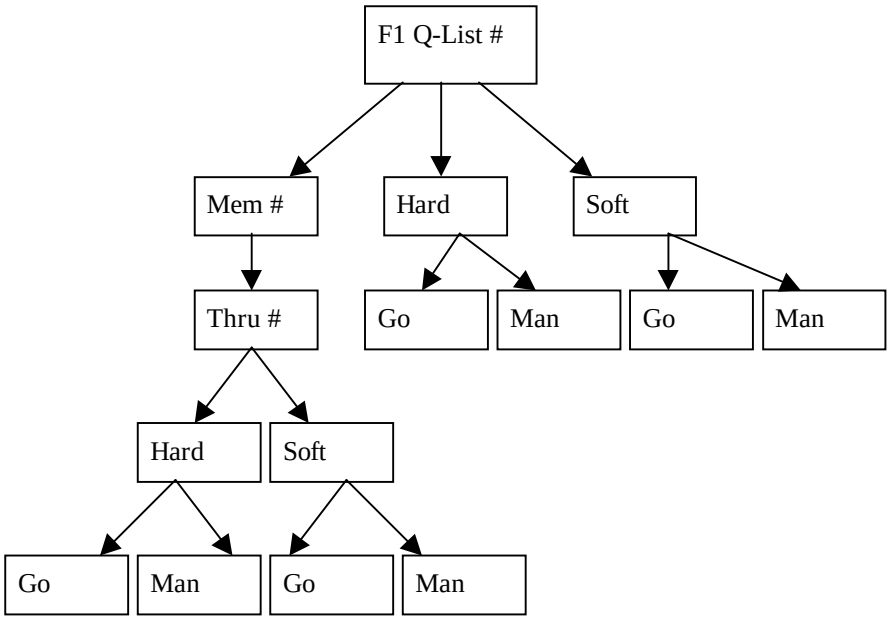


Figure 4 Events for Q-Lists and controllers

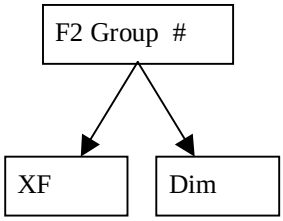


Figure 5 Events for Groups

Events for the Joystick

Assigning spots to the Joystick

Keypresses	Results/Comments
1. Go to the Event menu.	
2. Enter an Event number at the prompt.	
3. Press **F4 JS**	
4. Press **F2 Spot #**	You can use all the spot selection possibilities including the NSKs in Spot mode.
5. Optional – Press **F2 thru Spot #** or **F4 Except Spot**	
6. Press **F1 Store**	The Event is displayed in the Event List.

Assigning spots to the Joystick using Groups

Keypresses	Results/Comments
1. Go to the Event menu.	
2. Enter an Event number at the prompt.	
3. Press **F4 JS**	
4. Press **F3 Group #**	The Group List is displayed.
5. Enter a Group number at the prompt.	
6. Press **F1 Store**	The Event is displayed in the Event List.

Freeing Joystick assignments

Keypresses	Results/Comments
1. Go to the Event menu.	
2. Enter an Event number at the prompt.	
3. Press **F4 JS**	
4. Press **F5 Free JS**	The Event is displayed in the Event List.

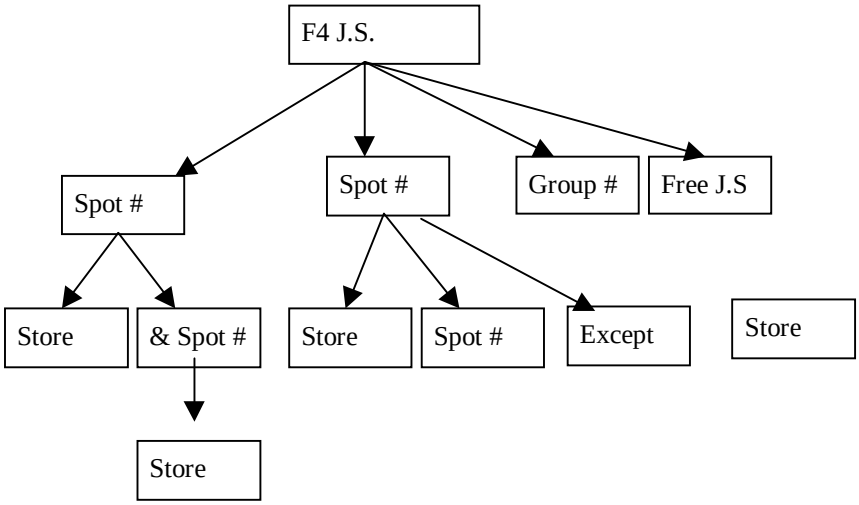


Figure 6 Events for Joystick

Events for Macro

Keypresses	**Results/Comments**
1. Go to the Event menu.	
2. Enter an Event number at the prompt.	
3. Press **F5 Macro**	The Macro List is displayed.
4. Enter a Macro number at the prompt.	You can enter a Macro number on the numeric keypad or using the NSKs in Macro mode.
5. Press **F1 Start of Fade** or **F2 End of Fade**	The Event is displayed in the Event List.

➢Note

Start of Fade and *End of Fade* are only relevant when the Macro is operated by an Event assigned to a memory running on the A/B crossfader. When the Event is triggered manually in the editor or by SMPTE, the Macro operates immediately.

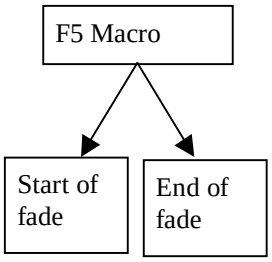


Figure 7 Macro Events can operate at the Start or at the End of the crossfade.

Events for Submasters

Example: Assigning a range of spots to a Submaster using Groups

Keypresses	Results/Comments
1. Go to the Event menu.	
2. Enter an Event number at the prompt.	
3. Press **F6 F1 Sub 1** or **F2 Sub 2**	
4. Press **F4 Assign spot**	
5. Press **F3 Group #**	The Group List is displayed.
6. Enter the Group number at the prompt.	
7. Press **F1 Store**	The Event is displayed in the Event List.

Example: Assigning a range of spots to a Submaster

Keypresses	Results/Comments
1. Go to the Event menu.	
2. Enter an Event number at the prompt.	
3. Press **F6 F1 Sub 1** or **F2 Sub 2**	
4. Press **F4 Assign Spot**	
5. Press **F2 Spot #**	You can use all the spot selection possibilities including the NSKs in Spot mode.
6. Press **F1 Store**	The Event is displayed in the Event List.

Example: Programming an Event to Submaster the crossfaders

Keypresses	Results/Comments
1. Go to the Event menu.	
2. Enter an Event number at the prompt.	
3. Press **F1 Sub 1** or **F2 Sub 2**	
4. Press **F2 A/B** or **F3 C/D**	

Programming an Event to free Submasters

Keypresses	Results/Comments
1. Go to the Event menu.	
2. Enter an Event number at the prompt.	
3. Press **F1 Sub 1** or **F2 Sub 2**	
4. Press **F5 Free**	

Programming an Event to free Submasters assigned A/B or C/D

Keypresses	Results/Comments
1. Go to the Event menu.	
2. Enter an Event number at the prompt.	
3. Press **F1 Sub 1** or **F2 Sub 2**	
4. Press **F5 All**	The Submaster is no longer assigned to A/B or C/D.

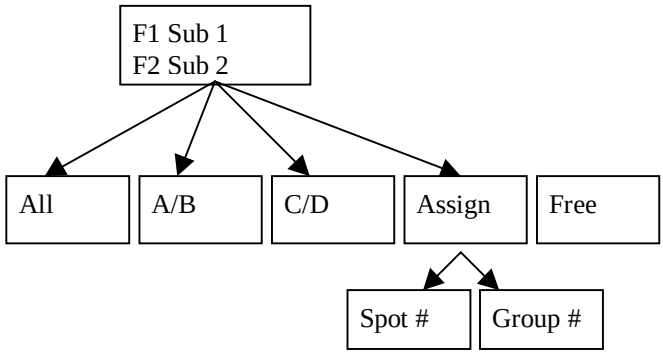


Figure 8 Events for Submasters 1 & 2

Deleting an Event

You can delete an entire Event or assignments within the Event.

Example: Delete Event 3.

Keypresses	Results/Comments
1. Go to the Event menu.	The system prompts for the Event number.
2. Enter 3 in response to the prompt.	
3. Press **F1 Delete**	
4. Press **F1 All**	The Event is deleted and is no longer displayed in the Event list.

Example: Delete the C/D assignment from Event 3.

Keypresses	Results/Comments
1. Go to the Event menu.	
2. Press **3**	The system prompts you to enter the Event number.
3. Press **F1 Delete**	
4. Press **F3 C/D Only**	The C/D assignment is deleted.

Deleting Events in the editor

You can also delete single Events or a range of Events in the editor.

Keypresses	Results/Comments
1. Press **[EVENT]**	
2. Select the range of Events – **[# → #]**	
3. Press **[ERASE]**	The message *Are You Sure?* is displayed.
4. Press **[ERASE**]	The message *Events Erased* is displayed.

Adding operations to an Event

If you are adding an operation to an existing Event, a warning is displayed and you must press your selection a second time to confirm.

Example: Event 6 is an assignment on A/B. You want to add macro operation to Event 6.

Keypresses	Results/Comments
1. Go to the Event menu.	
2. Select Event 6	
3. Press **F5 Macro**	The warning *Event Exists* is displayed.
4. Press **F5 Macro** again	

Adding text to an Event

Text can be added to existing Events in the Event menu and in the editor.

The text option in the Event menu is found on the third page.

Keypresses	Results/Comments
1. Select the Event number.	
2. Press **F1 Text**	If the Text option is not available, press **F6** until it is displayed.
3. Type the text on the alphanumeric keyboard.	
4. Press **F1 Store**	The text is displayed with the Event.

Or

Keypresses
1. Press **[EVENT]** and enter the Event number.
2. Press **[TEXT]**
3. Type the text on the alphanumeric keyboard.
4. Press **[STORE]**

Examining an Event

Keypresses	Results/Comments
1. Press **[EVENT]**	
2. Press **[EXAM 1]**, **[EXAM 2]**, or **[EXAM 3]**	The list of Events and their contents are displayed. If there are corresponding SMPTE assignments and text they are also displayed. This is a strong display.

Playing Back Events

The are three ways to playback Events:

1. You can assign Events to memories. Crossfading, on A/B, to memories with Event assignments triggers the Event. The operation of Events assigned to memories is influenced by the toggle *Auto Assignment on Go* in the System Parameters menu (see Chapter 26).
2. You can operate Events directly in the editor.
3. Events can be assigned SMPTE time codes and operated via SMPTE. Sabre has a simple Teach Me function for assigning SMPTE time codes to Events (see Chapter 30 SMPTE).

Assigning an Event to a memory

One Events can be assigned to each memory. Assign Events to a memory in the Event menu or the editor.

An Event can be assigned to more than 1 memory. This is useful if you have, for instance, programmed an Event that gives a Go command to a show curtain chaser assigned on a controller. You will probably want this Event to operate each time the show curtain closes. Therefore you could assign it to the preset, the intermission cue, and the memory that is active when the final curtain is brought in.

Example: In the editor, assign Event 3 to memory 10.

Keypresses	Results/Comments
1. Select memory 10.	
2. Select Event 3	
3. Press **[STORE]**	Event 3 is assigned to memory 10 and is thus displayed on the Memory List. Event 3 is operated when the Go command, that begins the crossfade to memory 10, is given.

Example: In the editor, assign Event 3 to memory 10.

Keypresses	Results/Comments
1. Go to the Event menu.	Sabre prompts for an Event number.
2. Enter the Event number for assignment.	
3. Press **F3 Assign to mem #**	
4. Press **[STORE]**	Event 3 is assigned to memory 10 and is thus displayed on the Memory List.

➢Note

[AUTO ASSIGN] must be active (LED on) to operate Events sequencing on the A/B crossfader.

Erasing an Event from a memory

Example: Erase Event 3 from memory 10.

Keypresses	Results/Comments
1. Select memory 10.	
2. Press **[EVENT]**	
3. Press **[ERASE]**	The Event assignment for memory 10 is erased.

Playing back an Event using the editor

Events can be operated in the editor.

Keypresses	Results/Comments
1. Press **[EVENT]**	*Event* appears in the command line.
2. Enter the Event number on the numeric keypad.	
3. Press **[ENTER]**	The Event is initiated.

CHAPTER 25
LEADER

Included in this chapter are:

Overview

The Leader function creates the underlying structure for three different functions:

1. Leader/Follower - where you designate one spot as a leader and other spots as followers. The Leader spot controls the pan and tilt of the follower spots. Leader and followers can be programmed to preserve a spatial relationship or staggered time operation.
2. Change Venue updates all position libraries when the leader set up is modified.
3. Copy spot positions. See Chapter 5 Selecting and Editing Spots.

To use the Leader function, you must first initialize the spots slated to participate, in the Leader menu, menu number 20.

There are 2 Leader keys on the console. The key labeled **[LEADER/FOLLOW]** is used to change the NSK mode for leader and follower assignments.

The Leader Menu

Setting up for the Leader function

Mark the four corners of rectangle on stage. Each spot that is slated to operate under leader function should be able to see all four corners easily. It is important that each corner is a 90-degree angle.

Each spot in turn is focused to four corners marked on the stage. The failure of any spot to see any one of the four points requires either redefining the 4 points of the rectangle and repeating the set up procedure for *all* of the spots or repositioning the spot so it can see better.

When all 4 corners have been defined for the selected, the program automatically verifies the data in the INIT (initialize) mode. When initialization is finished the spot number appears in one of three colors.

1. Green (O.K.), the x/y values in all 4 corners are viable.
2. Yellow (warning) means that the spot's focus to the corners is marginal.
3. Red (error), means that the x/y values for that corner are incorrect.
4. Blue (UNINIT), means that no set up was attempted.

Keypresses	**Results/Comments**
1. Enter the Leader menu	
2. Press **F1 Set Up**	
3. Select a spot	The dimmer of the selected spot goes on. All of the other parameters take their values from tracking. Before entering the Leader menu, it is advisable to clear all color and gobos, etc. Close the iris down small to facilitate accurate placement.
Use the trackball to move the selected spot to the upper left corner (upstage right). The row of	

the selected spot is highlighted and the current x/y values are displayed.	
4. Press **F1 Store Current**	The x/y parameters for that point are stored. The program advances to the next corner. Use the trackball to focus the spot on the point and store.
5. Repeat steps 4 and 5 until the x/y values for each corner are defined and stored.	There is a short wait period while the program verifies the data. After verification the spot number is displayed in one of the colors described above.

Correcting inaccurate placement

In the case of a yellow or red spot number appearing, it is recommended to repeat the set up procedure for that particular spot.

Keypresses	**Results/Comments**
1. Press **F4 Go To Point**	The beam goes to the selected point.
2. Use the trackball to correct the x/y values.	
3. Press **F1 Store Current**	Store the corrected x/y values for the selected point.

Testing Leader set up

The test option allows you to check a spot's leader set up.

Keypresses	**Results/Comments**
1. Press **F3 Test**	
2. Enter the number of the spot you want to test, using the numeric keypad.	
3. Use the arrows to place the cursor on the row and column you would like to check	
4. Press **F1 Next**	The selected spot or all of the spots go the next corner.

You can also check all of the spots at the same time.

Keypresses	Results/Comments
1. Press **F3 Test**	
2. Press **F5 All Go To**	All of the spots included in the leader set up will go to the designated point.
3. Use the arrows to place the cursor on the row and column you would like to check	
4. Press **F1 Next**	The selected spot or all of the spots go the next corner.

Using Leader during Playback

Leader is essentially a tracking function. A spot designated as the leader assumes control over x/y parameters of the spots assigned as followers.

When running memories in playback, the leader spot affects all the spots assigned as followers. The Leader does not effect spots assigned as followers whose x/y parameters are currently active in the editor or being run by a control source.

When assigning leaders and followers, use the numeric keypad or the Numeric Soft Keys in **[LEADER/FOLLOW]** mode. In the following operating instructions, both methods are described.

Assigning leader/follower spots

Designate the spots as followers and select one spot as the leader.

Example: Spots 1 - 8 are assigned as followers to leader spot 10. Spot 10 masters the x/y parameters of the follower spots 1 - 8. If a spot does not respond to the leader function check that the spot was included in the set up in the Leader menu.

Assigning leader/follower spots using the numeric keypad

Keypresses	Results/Comments
1. Select spots 1 - 8	
2. Press **[LEADER]**	The display now shows the leader table. *Lead by:* appears in the command line.
3. Select spot 10	Designates spot 10 as the leader.
4. Press **[STORE]**	The Leader function is automatically enabled.

Assigning leader/follower spots using the numeric soft keys

You must assign a leader spot before assigning follower spots. If you attempt to assign follower spots before assigning a leader spot, the message *DEFINE LEADER FIRST!* is displayed.

It is recommended to assign leader and follower spots while viewing the NSK Exam Display; press **[51-100] [EXAM]**.

Assigning a Leader spot

Example: Assign spot 10 as the leader spot for followers 1 - 8. Remember only spots that have been set up in the Leader menu can participate in the Leader function.

Keypresses	Results/Comments
1. Press **[LEADER/FOLLOW]**	Skip this step if the Numeric Soft key mode is Leader.
2. Press NSK **10**	Spot 10 is highlighted in light red and is labeled LEADER. The Leader function is automatically enabled.
3. Press **[LEADER/FOLLOW]** twice.	The NSK mode is now Follow.
4. Select spots 1 - 8 by pressing (NSK) **01** → (NSK) **08**	The Follower spots are highlighted in dark red.

Adding follower spots using the numeric keypad

Example: Add spot 12 as follower spots

Keypresses	Results/Comments
1. Select spot 12.	More than one spot may be added at one time.
2. Press **[LEADER]**	The display now shows the leader table. The prompt **lead by:** appears in the command line. Ignore the prompt.
3. Press **[STORE]**	The display returns to Stage Display.

Adding follower spots using the NSKs

Keypresses	Results/Comments
1. Press **[LEADER/FOLLOW]**	The LED on the key blinks and the alphanumeric display shows Leader as the current NSK mode.
2. Press NSK **12**	Spot 12 is now highlighted in dark red on the NSK Exam display.

Releasing follower spots assignment

Example: cancel the follower assignment to spots 3 - 4

Releasing follower spots assignment on the numeric keypad

Keypresses	Results/Comments
1. Select spots 3 - 4	
2. Press **[LEADER]**	
3. Press **[ERASE]**	The selected spots are released from their follower assignments.

Releasing follower spots assignment using the NSKs

Keypresses	Results/Comments
1. Press **[LEADER/FOLLOW]**	
2. Press NSK **03** and NSK **04**	The selected spots are no longer highlighted on the NSK Exam display.

Changing the Leader assignment

Example: Change the leader spot from spot 10 to spot 4.

Changing the leader spot using the numeric keypad

To change the leader assignment it is necessary to clear all of the leader/follower assignments.

Keypresses	Results/Comments
1. Press **[LEADER]**	
2. Press **[ERASE]**	All of the leader and follower assignments are cleared.
3. Reassign the leader spot and followers as described above.	

Changing the Leader using the NSKs

To change the leader assignment it is necessary to clear all of the leader/follower assignments.

Keypresses	Results/Comments
1. Press **[LEADER/FOLLOW]**	
2. Press NSK 04	All of the follower assignments are cleared. Spot 4 is highlighted in light red and labeled LEADER red on the NSK Exam display.
3. Press **[LEADER/FOLLOW]** twice.	The NSK mode is Follow.
4. Assign the follower spots by pressing the relevant NSKs.	The follower spots are highlighted in dark red on the NSK Exam display.

Delay assignments for Leader

Time assignments for leader influence the way in which the follower spots respond to the movement of the leader spot.

Absolute Delay is a time delay. If the Follower spot is assigned a 1 second absolute delay, when the Leader spot changes position the follower spot will go to the same position with a delay of 1 second.

Relative delay is a spatial delay. It ensures that the same distance is kept between the spots at all times. Relative delays are used with effects.

Assigning an absolute delay (time delay)

Keypresses	Results/Comments
1. Select a spot or a range of spots.	
2. Press **[TIME]**	If the current display was not the leader table, it is now displayed. The prompt in the command line reads: *Spot # Abs. Delay:*
3. Enter a numerical value in response to the prompt.	The numerical value is a unit that is equal to 1/18 of a second.
4. Press **[STORE]**	The delay assignment appears next to the follower spot number on the leader display.

Assigning a relative delay (spatial display)

Keypresses	Results/Comments
1. Select a spot or a range of spots.	
2. Press **[WAIT]**	If the current display was not the leader table, it is now displayed. The prompt in the command line reads: *Spot # Rel. Delay:*
3. Enter a numerical value in response to the prompt.	The value is a percentage of the cycle of the effect.
4. Press **[STORE]**	The percent of delay assignment appears next to the follower spot number on the leader display.

Canceling the delay assignment

Keypresses

1. Select spots
2. Press **[TIME [0]**
3. Press **[STORE**

Operating Leader

If you use the Leader function frequently, it is handy to make Macros for the Leader enable and disable functions, providing yourself with single keypress access.

Enabling Leader function

When you store a leader assignment, the leader function is automatically enabled. If the leader spot is assigned to any active playback device or is selected in the editor, the follower spots' x/y values are displayed on a green field.

Keypresses	Results/Comments
1. Press **[LEADER]**	The Leader display is shown.
2. Press **[+]**	The leader information on the Stage display is shown in red.

Disabling Leader

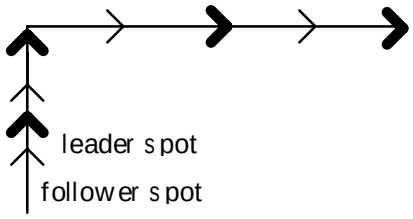
The leader function need not be used throughout the show. It can be disabled at any time.

1. Press **[LEADER]**	The Leader display is shown.
2. Press **[—]**	The leader information on the Stage display is shown in gray.

Relative Leader Motion

In the basic leader function both the leader and the followers move along the same path. The relative leader motion function allows the leader and followers' paths to run parallel. When used in conjunction with the effect function, some truly impressive stage pictures can be created.

Normal leader function:



Relative leader function:

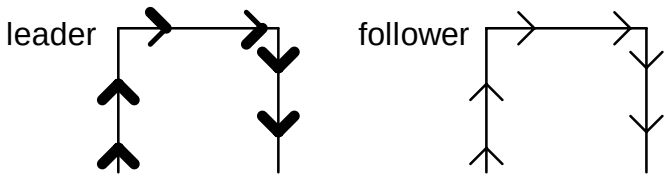


Figure 1 Normal and Relative Leader motion

Programming a relative motion leader

Example: Spot 10 will be the relative motion leader; spots 1 - 8 are the follower spots.

Keypresses	**Results/Comments**
1. Select spots 1 - 8.	
2. Press **[LEADER]**	The Leader display is on view. The prompt: *lead by* appears in the command line.
3. Select spot 10.	
4. Press **[DELTA]**	This designates the relative motion function.
5. Press **[STORE]**	In the leader display an asterisk is displayed alongside the follower spots to denote the relative motion leader function.

Canceling the relative motion leader

Cancel the relative motion leader by erasing and reassigning the leader.

Change Venue

The change venue function uses the leader set up as a database for modifying position libraries and memories. This is predicated on the fact that you have redefined the leader set up.

When you have finished set up and focusing in a new venue, redefine the leader set up of the show. This set up can then be saved to diskette. You can create a library of leader set ups, which is useful if your show often returns to the same venue. A library of leader set ups allows you to load a show recorded in another venue, load the leader set up of the current venue and apply the change venue function.

Change venue is only applicable to spots that have been re-initialized in the leader set up. If one or more of the spots included in the selected position library or memory has not been initialized in the leader set up, the change venue will not affect this spot and the message *WARNING: INIT ERROR* is displayed.

IMPORTANT! The Change Venue function is operable only after the following steps have been done:

1. **Cold Start.**
2. **Loading the show.**
3. **Redefining the Leader set up in the Leader menu.**

Updating a Library

After the leader set up has been redefined in the Leader menu, you can proceed to update the position libraries to suit the new venue.

Example: update all of the spots in position library 12.

Keypresses	**Results/Comments**
1. Press **[POS]**	Select the library for modification.
2. Press NSK **12**	
3. Press **[SPOT] [→]**	Will apply the change venue function to all of the spots in the selected library, provided, of course, that the spots have been initialized in the leader set up.
4. Press **[LEADER]**	
5. Press **[STORE]**	Record the modified library position. This modification, of course, tracks through all the memories utilizing this library.

Updating selected spots in Library

You may chose to update only selected spots from a library.

Example: update the information for spots 3 - 6 in Position library 12.

Keypresses	**Results/Comments**
1. Press **[POSITION]**	Skip this step if the NSK mode is Position.
2. Press NSK **12**	
3. Select spots 3 - 6.	
4. Press **[LEADER]**	
5. Press **[STORE]**	Record the modified position library.

Fine tuning spot positions

Before storing the updated Position Library you can fine tune positions for one spot, a group of spots, or a range of spots.

Example: Fine-tune the position of spot 3 in Position library 12.

Keypresses

1. Follow steps 1 - 4 as described above (*Updating a library)*
2. Press **[LEADER]**
3. Select spot 3
4. Assign dimmer intensity
5. Use the trackball to re-position the spot.
6. Press **[STORE]**

Updating memories

Change venue may be applied to individual memories that do not contain position libraries.

Keypresses	**Results/Comments**
1. Select the memory for modification.	
2. Press **[SPOT] [→]**	The update will apply to all of the spots in the memory.
3. Press **[LEADER]**	Updates the position values using the change venue function to all of the spots in the selected memory provided, of course, that the spots have been initialized in the Leader set up.
4. Press **[STORE]**	The new position values are stored.

Updating selected spots in a memory

Keypresses	Results/Comments
1. Select the library for modification.	
2. Select the spot.	The update will only apply to the selected spot/s. More than one spot may be selected at this time.
3. Press **[LEADER]**	Applies the change venue function to the selected spots provided, of course, that the spots have been initialized in the leader set up
4. Press **[STORE]**	Record the new position values.

CHAPTER 26
SYSTEM CONFIGURATION

Included in this chapter are:

Configuring the System in Service Tools

- Toggling the CRT number
- Configuring the number of spots
- Special Functions
- Special Numbers

The System Parameters Menu

- User Definable Options

The Default Device List for moving lights

Overview

General basic system configuration is carried out in the Service Tools program. In Service Tools you define the number of channels, scrollers, spots, and dimmers in the Config System option. The Special Functions and Special Numbers are used for further general system configuration. The Service Tools configuration is saved in non-volatile memory. (Service Tools also provides other functions such as formatting diskettes, upgrading software, and diagnostic programs– see Appendix A Service Tools.)

Other operator definable parameters are found in the System Parameters menu. These parameters are saved with the show file.

Accessing Service Tools

Keypresses	Results/Comments
1. Turn off the power.	
2. Press and hold down **[CE]** and **[CLEAR]**	
3. Turn the power back on.	
4. After a few seconds, release the keys.	After running some self-tests, the system boots to Service Tools. The lower area of the screen shows the current F key functions.
5. Press **F3 Config System**	The different components of the system configuration are displayed.
6. Choose any of the different configuration options	Each category opens a pull down list.

Configuring in Service Tools

The items in this section of the Service Tools that appear in red are protected by a password. This is to ensure that unauthorized personnel do not have access to the system configuration. The system default is: Password needed access to Special Functions and Special Numbers. The channel, dimmer, spot, scroller configuration can also be protected by toggling bit W – Protect All (in Special Functions) to yes. The password can be obtained from your Compulite distributor.

Use the console arrow keys to move the cursor

F4 Enter & Next Saves changes and go to the next option. Example: If you are working in **F4 Special Functions**, pressing this key opens **F5 Special Numbers**.

F5 Enter & Previous Saves the change and goes to the previous option. Example: If you are working in **F4 Special Functions**, pressing this key opens **F3 Channels**.

F6 Enter & Exit Exit to the main screen of the Config Sys menu and requests confirmation of the store. Press **F6** again to confirm and store.

Important! After any change in configuration you must COLD START the system.

Communication params

Communication Parameters (**F1**) identifies different consoles that are linked in an Ethernet network configuration. Enter the IP address for the console here.

The Communication Parameters information is stored in non-volatile memory and is retained in the console until modified.

Use the arrow keys on the console or the alphanumeric keyboard to move from field to field. You can also use **F2 Next**.

Keypresses	Results/Comments
1. Turn off the power.	
2. Press and hold down **[CE]** and **[CLEAR]**	
3. Turn the power back on.	
4. After a few seconds, release the keys.	After running some self-tests, the Service Tools main menu is displayed.
5. Press **F3 Config System**	The different components of the system configuration are displayed.
6. Enter the password.	
7. Press **F1 Communication Params**	A window opens showing the I.P. address, textual description, and console's ID number.
8. Enter the I.P. number.	
9. Enter a text label for the console.	
10. Enter the console's ID number	
11. Press **F6 Enter & Exit**	Return to the main System Configuration menu. Sabre prompts for a confirmation.
12. Press **F6 Store**	All information entered under Communication parameters is stored.

Toggling CRT number

You can configure the console for 1, 2, or 3 monitors.

Keypresses	Results/Comments
1. Go to Service Tools.	
2. Press **F2 Toggle CRT** until the desired number of monitors is displayed.	The system prompts to store.
3. Press **F6 Enter & Exit**	

Configuring for channels, spots, dimmers

The configuration limits are:

- 1024 channels (including scrollers) – The number of channels must be divisible by 8. The number of scrollers must be divisible by 4.
- 1024 dimmers – The number of dimmers must be divisible by 8.
- 192 spots
- DMX Input is from 0 – 512 (see Chapter 31- DMX Input)

The General master maximum level can be set to 100% or 200%.

Keypresses	Results/Comments
1. Press **F3 Config System**	The configuration options are displayed.
2. Press **F3**	A pull down list is displayed.
3. Use the arrow keys to select an item.	
4. Enter the number of channels, scrollers, etc.	
5. Repeat steps 3 and 4 to complete the configuration.	
6. Press **F6 Enter & Exit**.	Confirmation is requested. If you have made a configuration error, the system beeps and an error message is displayed. Correct the error and store again.
7. Press **F6 Store Configuration** to confirm.	

Big spots

If you are controlling spots with a very large number of parameters, such as the Martin PAL 1200, a special set up is necessary.

The system considers these devices as two spots and they appear as two spots in the spot definition. This need not concern the operator, once the system is correctly configured, because the spot assignments and editing are the same as regular sized spots.

Keypresses	**Results/Comments**
1. Calculate the total number of spots	Calculate the system configuration using this equation: S # (number of spots) + B # (number of big spots) $\leq$ 196.
2. Enter the total number of spots for the item *Number of Spots*	
3. Enter the total number of "big" spots for *no. of big spots*	
4. Enter the first spot number that will be assigned to a big spot. This must be an odd number.	

Example: You are controlling 12 Martin PAL 1200 and 4 Superscan Zooms. The Martin PAL 1200 units will be assigned spot numbers 1 - 12.
The set up will look like this:
Number of Spots: 16
Big among them: 12
First big spot: 1

Special Functions

Special Functions is selection F4. This area is used to define general parameters of the system. See below for a list of the NOVRAM toggles. Spares are reserved for future use.

Use the arrows for selection and **F1** to toggle the assignment.

Bit	Function	Toggles	Description
A	MIDI	0 - Disable 1 - Enable	Toggle to 1 when you are using MIDI.
B	Printer Time-out	0 - Long 1 - Short	It is recommended to use the *Long* setting, as many printers do not respond properly when set to *shot*. If your printer is not responding correctly, try toggling to *Short*.
C	B/D Faders	0 – Disable 1 – Enable	Toggle to 0 to disable the B and D faders. Toggle to 1 to enable the B and D faders. When enabled you must choose their function as defined in bit D.
D	B/D faders usage	0 – Rate 1 - Xfader	Toggle to 0 to use the B and D faders as Rate faders.

Bit	Function	Toggles	Description
			Toggle to 1 to use the B and D faders as crossfaders, thus making A/B and C/D split crossfaders.
E	Printer Type	0 - Alphanumeric 1 - Graphics	Use the setting that suits your printer.
F	System console	0 – Main 1 – Backup	
G	VC Compression	0 – Disable 1 - Enable	Toggle to 0 if you are using Ethernet and a CAD program, such as WYSIWYG, that is not CompuCAD. Toggle to 1 if you are using the Ethernet and CompuCAD.
H	Multi cues	0 - Disable 1 - Enable	This permits or disallows assignment of a single memory to more than one playback source at a time.
I	USA system	0 - No 1 - Yes	USA system “no“ requires these key sequences: **CHAN # @ 7** **CHAN # @ 8•5 = # STORE** - a decimal point is required for the intensity assignment. USA system “yes” permits these key sequences: **CHAN # @ 70** **CHAN # @ 85 MEM # STORE** - no decimal point is required for the intensity assignment. = is dropped from the memory recording sequence.
J	Spare		
K	Internal MIDI	0 - No 1 - Yes	Bits A and K must be toggled to 1 to enable using MIDI.
L	Compact backup	0 - Yes 1 - No	Set to 1 if the system is being used as a back up console.
M	URC Layout	0 – Old 1 - New	The Old panel layout refers to the panel layout of the original Remote Control Unit that worked with Animator. New refers to the new product Universal Remote Control.
N	Spare		
O	SMPTE	0 - No 1 - Yes	Toggle to 0 when not using SMPTE. Toggle to 1 to enable SMPTE. Sabre cannot be configured for SMPTE using an outboard generator and DMX Input at the same time.

Bit	Function	Toggles	Description
P	Internal SMPTE	0 - No 1 - Yes	Toggle to 0 when using an outboard SMPTE generator. Toggle to 1 when using the internal SMPTE generator.
Q	Spare		
R	Fade from empty	0 - No 1 - Yes	Toggle to 0 for parameters jump in the crossfade. Toggle to 1 for parameters fade in the crossfade.
S	Spare		
T	Enhanced velocity	0 - No 1 - Yes	When toggled to 1 yes: 1. When the velocity value assigned to a parameter is not the same as the cue speed, the system ignores the cue speed (for this parameter) and the parameter crossfades according to the velocity value. 2. When editing spot parameters all velocity values are forced to the fastest, if the velocity value has not been selected and is not present in the editor. When toggled to no, the mirror response to trackball movement is always determined by the velocity setting.
U	Spare		
V	Spare		
W	Spare		
X	Spare		

Special Numbers

This area of the system configuration contains the following data:

Item	
A Panel layout version	The panel layout is 0.
C Max. number scroller frames	Sabre supports up to 32 frames per scroller.
D SMPTE frames/ second	The default is 30 frames per second. The legal entries are 12 - 50 frames per second.
E DMX input	The number entered here is the total DMX input divided by 4. To control channels enter a number less than 129. Example: If the DMX input source is a 40-fader manual board, enter 10. When 129 is entered for special number E the DMX input is used to control DMX protocol moving devices. This is applicable to moving

	lights from DMX connector 1 only. Example: Assume that the DMX input is controlling moving lights using 12 channels each. DMX input channel 1 operates channel 1 of spot 1, DMX input channel 2 operates channel 2 of spot 1, and so on. DMX input channel 13 operates channel 1 of spot 2, DMX input channel 14 operates channel 2 of spot 2, and so on.
F Keyboard language	0 – English 3 - French 4 – German
G Special # 7	Not used.
H Chann on connector (0 - 6)	If you need 2 connectors for channels make sure that bit H is 1, 2, 3, 4, or 5. The system automatically recognizes the next connector as a channel connector also.

System Parameters

The System Parameters menu (menu number 8) displays all pertinent general system information and contains many definable parameters that allow you to customize the system.

The upper display shows the system configuration, which includes:

- The current show file (if any). The display includes the show file number, text, date and time of recording.
- The current software version
- Current remaining memory in %
- Number of spots controlled
- Number of big spots controlled included in the total number of spots
- The first spot number for big spots
- Number of channels and dimmers controlled
- Number of scrollers controlled
- DMX input configuration

Definable parameters

The lower part of the display shows parameters whose default may be operator defined.

Parameter	What it does
Default memory time	The fade time that is assigned as default time-in to memories. This requires a numeric entry.
Default fade time	The time it takes dimmers to fade out when **[RESET** is pressed. This requires a numeric entry.
Beeper	Controls whether the console will beep when errors are encountered. This is a toggle.
Flash rate	The rate at which the **[FLASH]** key flashes operates. This is a numeric assignment, ranging from 1(fast) to 40 (slow).
Submaster #1 control	Determine whether the Submaster controls A/B, C/D, or faders and controllers. This is a toggle.
Submaster #2 control	Determine whether the Submaster controls A/B, C/D, or faders and controllers. This is a toggle.
TB and wheels resolution	Determines the amount of trackball movement required to affect a response. Three settings are available. Setting 1 (coarse resolution) moves the mirror a large amount in response to very little trackball movement. Setting 3 (fine resolution) will move the spot a small distance with much trackball movement.
MIDI I/O channel	Define the channel on which MIDI signals are transmitted/received. Requires a numeric entry from 1 - 16. This is displayed only if the system is configured for MIDI control. Configure for MIDI control in Service Tools/Config Sys/special Functions.
MIDI sync out channel	The channel for the MIDI synchronization function operates. Requires a numeric entry from 1 – 16.
G. M. Blackout	Toggle to enable or disable the G.M. BO key.

Parameter	What it does
WYSIWYG device #	If you are using WYSIWYG, set the device number and toggle to active. This requires a numeric entry and a toggle.
Serial COM 1|COM 2	Define COM 1 and COM 2 for the Touch or the PC Serial Interface.
Latest Takes Precedence	Toggle to enable or disable the LTP control priority.
Time of day	Sets the system's real time clock. Requires a numeric entry.
Date	Set the date. Requires a numeric entry.
Store tracking if dim on	When toggled to Yes: If the dimmer is more than 0% all of the spot parameters are recorded to memory even though some of the parameters have not been selected. When toggled to No: Only the parameters present in the editor are recorded to memory. There is a dedicated key on the console to enable or disable this function, regardless of the setting in this menu.
Scrollers jump on fade	Determine the behavior of scrollers during a crossfade. They can jump or fade. This is a toggle.
Mix editing of spots	Determines whether spots of different types are included when selecting a range of spots or if only one type of spot in the selected range is entered to the editor. This is a toggle.
Auto assignment on GO	Determines the behavior of assignments through Events. Example: the Event in memory 20 is; assign memories 5 - 8 to C/D auto start. When set to No, the assignment to C/D occurs when the crossfade to memory 19 is complete. When set to Yes, the assignment occurs when **[GO]** is pressed, initiating the crossfade to the memory 20. This is a toggle.
Compress disks	Determines whether show data is automatically compressed when recording show files. If set to yes, this allows recording 2Mb of show data to a 1.44 Mb diskette. This is a toggle.
A/B in snap	Determines whether the snap affects A/B assignments. This is a toggle.
Autosave # of generations	Activates the Autosave and determines how many generations of files generated by the Autosave function are retained in the system. Number entries 1 - 8. Disables the Autosave function.
Store increment	Change the automatic increment when **+STORE** is pressed. Enter any number. Example: if you have changed the increment to 5, pressing **+STORE**, when the last memory stored was 100, stores the current editor group as memory 105
Jump display	When toggled to “no jump”, the spot display behaves as usual. When toggled to “auto jump” the spot display automatically jumps to the page with the selected spot. If more than one spot is selected the display jumps to the page where the highest selected spot is displayed. The auto jump option can be set for either CRT 1 or CRT 2.

To redefine these parameters:

Keypresses	Results/Comments
1. Use the arrow keys to move the cursor and select the item.	
2. Press **F1 ENTER**	A prompt, such as Set *Parameter To:* is displayed.

Exit to service tools

This function provides a back door escape to Service Tools. Remember that changes in the system configuration necessitate cold starting the system. If there is data stored in the memory that you wish to retain, record to diskette before exiting to Service Tools.

Keypresses	Results/Comments
1. Press **F5 Exit To Service Tools**	A window opens, warning the operator to record data.
2. Press **F1 Exit To Service Tools**	Confirm the exit command.

Print menu screen

The print option (**F6**) operates as print screen. This is useful for documentation, as it contains important information such as the system configuration.

Default Device List

Pre-selected device pool assignments determine which devices will appear in the default device list. This information is stored in the system and retained even after cold start.

Defining the default device list

The default device list can be customized, including only the devices that you generally use.

A yellow square appears next to the devices that are selected from the system pool at cold start. These devices are included in the default Device List.

One of the devices must be designated as the “default device”. This is the device that appears at the head of the device list and is the default assignment to the spot numbers. Press + to designate the device which is to appear first in the Device List.

Keypresses	Results/Comments
1. Press **F5 Default Dev List**	The System Device Pool is displayed in red, indicating that the cursor is active in the Pool.
2. use the arrow keys to select device	Select the device that you wish to appear on the default device list.
3. Press **F5 Select Toggle**	A yellow square appears next to the selected device.
4. Repeat steps 2 and 3 until you have chosen all of the devices that are to appear in the Default Device List.	**Do not forget to designate the device that is to appear at the head of the list. Mark the device with a Plus (+) sign.**
5. Press **F1 STORE**	Store the new data before exiting this function.
6. Turn off the power	In order to "teach" the system the new default device list, the system must be cold started.
7. Cold start Sabre.	
8. Press **F1 Cold Start**	If you check the device list, you will find your customized list.

CHAPTER 27
SPOT MANAGEMENT AND PATCHING

This chapter includes:

The Mix Output menu

- Mix Output menu display
- Patching spot numbers
- Assigning output addresses
- Device definitions
- The Device Pools
- Default Device List

The Patch menu

- Assigning a new patch position
- Returning to the default position

Mix Output Menu

Menu number 19.

The functions in the Mix Output menu are responsible for moving light management.

Included in this menu are:

- Spot type selection and assignment to control numbers. Spot numbers are used to access spots during editing.
- Connector definition.
- Configuring connectors for Ethernet communication.
- Setting up output addresses. Each spot is given a unique address. The local address on each spot must be identical to the address assigned in the Mix Output menu.
- Defining devices, including parameter wheel set up.
- Editing spot definitions
- Device Pools - The System Device Pool contains 32 pre-defined moving lights. You can store your own moving light definitions in the User Device Pool

Mix Output menu display

The elements in the Mix Output menu display are the assignment table, the device list, the device definition table, connector set up, and the parameter library reference.

The assignment table

The assignment table consists of 3 rows:

- *Dev* stands for device. The two letter short name of the assigned device appears here.
- *Spt is* the spot number by which a particular instrument is accessed.
- *Out* is the DMX address or High End/S-Mix address output of that particular instrument.

The Device List

The Device List is a list of devices that can be assigned to spot numbers. The Device List contains 16 devices. The default Device List that can be customized to suit your equipment (see Chapter 26 System Configuration).

The Device List has two columns.

- The first column is the name of the device.
- The second column is its label.

Sabre's default Device List is divided into three types of devices:

- DMX - DMX devices are operator programmable. DMX devices appear in the upper section of the Device List. You can define devices in the Define Device option in this menu.
- L-MIX devices are Coemar and Fly. These moving lights work under DMX protocol. Access to the device definition is limited to Invert, Jump on x-fade, include/exclude from libraries, all Edit Init options, and wheel set-ups. L-Mix devices appear in the middle section of the Device List.
- High End/ S-Mix are devices that use proprietary protocols. Access to the device definition is limited to Invert, Jump on x-fade, include/exclude from libraries, all Edit Init options, and wheel set-ups. These devices appear in the lower section of the Device List.

When customizing the Device List, you can structure a Device List with up to 16 DMX spots.

The Definition Table

The device's full name and short name, its ID number, and output length head the Definition Table.

The device's parameter names, parameter channel, and other parameter configurations are displayed in the Definition Table.

Patching spot numbers

Spot numbers are the numbers by which the editor accesses moving lights. Device types must be patched to spot numbers.

One spot or a range of spots may be patched at the same time.

Keypresses	Results/Comments
1. Press **F2 Select Device**	
2. Use the arrow keys to select the device	
3. Press **F4 Select Spot #**	The prompt line shows the selected device type and requests the spot number assignment.
4. Enter the spot number on the numeric keypad.	
5. Press **F2 Thru Spot #** or press **[→]** and enter the last spot number of the range.	If more than one unit is to be patched, select the last number of the range of spots.
6. Press **F1 Store**	Store the patch. The device's label appears above the spot number in the assignment table.

Assigning output addresses

After assigning devices to their spot numbers, it is necessary to set up the output addresses.

The local DMX address on each moving light must correspond to the number that appears in the OUT row in the assignment table. Plan ahead and set the local DMX addresses on the devices before they are hung in an inaccessible location!

The Set Address function offers these options:

- Assign spots to connectors.
- Auto set up - where the system accesses the definition data and sets up accordingly.
- Specify the number of DMX channels to be used as a default assignment.
- Enable or disable spot output.

Connector definitions

Connectors transmit DMX512 protocol, High End protocol, or S-Mix.

The default connector definitions are determined by the number of spots in the System Configuration and by which connector is defined for channels. The channel connector is defined in Service Tools/config system/special numbers/H. Define the connector dedicated to channels before defining connectors in this menu.

The Connector Definition reference shows the 6 connectors:

- The channel connector is displayed as *Chan* and the DMX spot connectors show *DMX*; they are displayed in green.
- The connector transmitting S-Mix shows *SMIX* and is displayed in yellow.
- The connector transmitting High End protocol shows *HE* and is displayed in blue.

When you use the Auto Setup option to set up the output addresses, Sabre defines the connectors for DMX spots, S-Mix, and High End as it sees fit.

When using the Select Spots option to set up the output addresses, you can assign the connectors for your convenience.

DMX devices

The number of DMX channels occupied by each device varies according to the type of device. The number of DMX channels (output length) used by the device appears, in the definition table, under the device name. This number is used to calculate the DMX output address that appears in the row labeled "out" in the assignment table.

Assume that the selected device is *Superscan Zoom E,* which uses 16 DMX channels. This means that if the device has been assigned to spots 1→ 12, the output number appearing under spot 1 will be 1, under spot 2 the output number will be 17, and so on.

If the selected device uses only 8 channels, the output number appearing under spot 1 will be 1, under spot 2 it will be 9, and so forth.

Of course, you may be using a variety of devices that use a different number of channels, so you must set the **DMX** addresses appropriately.

If you assign overlapping addresses an error message (CONFLICT *WITH SPOT #*) is generated. The address of the spot causing the conflict is displayed in red and the address of the overlapped spot is displayed on a blue field. You must correct conflicting addresses. If you do not correct overlaps some of the spot parameters are inaccessible. Remember that each connector transmits 512 DMX channels.

Proprietary protocols devices- High End & S-Mix

When Intellabeam or Cyberlights are assigned, the connector transmits High End protocol.

All other proprietary protocols work with an S-Mix converter. Their connector is defined as S-Mix.

The output addresses for High End and S-Mix spots do not take into account the number of DMX channels occupied by the device. The output addresses are consecutive numbers that increment by 1.

The maximum number S-Mix spots per connector are 120 devices using up to 12 parameter channels or 60 devices using 13 or more parameter channels. A typical configuration is 40 devices using up to 12 parameter channels and 40 devices using 13 or more parameter channels.

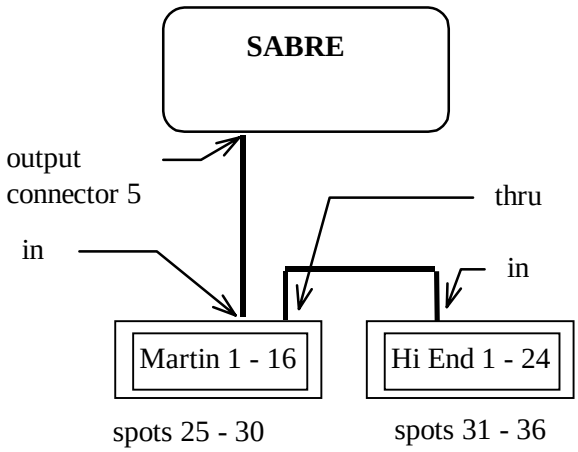
The maximum number of High End spots is 24 per connector.

S-Mix is transmitted on connectors 4 - 6 only.

If your set up includes S-Mix and High End devices, you can assign both of them to the S-Mix connector. In this case, you must have 2 S-Mix Converters. Example: Martin CYMR is assigned to spots 25 - 30. Intellabeam is assigned to spots 31 - 36. There is one S-Mix

converter for the Martin devices and a second S-Mix converter for the Intellabeam devices. The output addresses for the Martins and Intellabeams are determined by the addresses set on the S-Mix converters, so spot 25 can have output address 1 and so can spot 31.

The set up looks like this:



Assigning addresses to selected spots

When choosing to assign addresses to selected spots, you are prompted to specify the connector assignment for each spot.

Keypresses	Actions/Comments
1. Press **F1 Set Address**	
2. Press **F1 Select Spot(s)**	
3. Select spots using the numeric keypad.	A range of spots can be selected using the key sequence # → #.
4. Press **F1 Start At Con**	The default is connector 1. Change this if necessary. Note that the connector assignment for S-Mix spots is always connectors 4 - 6.
5. Press **F1 Set Address**	The default is address 1. Change this if necessary.
6. Press **F1 Store**	After pressing store, Sabre automatically advances to the next spot keeping the same connector assignment.
7. Repeat from step 5.	When you press **F1 Set Address** the DMX or S-Mix address is entered according to the output length of the spot.
8. Exit by pressing **F6 Restart**	

Using the auto set up option

When the selected spots are High End or S-Mix devices, Sabre distributes the assignments to connectors. Remember! High End devices are limited to 24 per connector.

Keypresses	**Results/Comments**
1. Press **F1 Set Address**	
2. Press **F5 Auto Setup**	
3. Press **F1 Best Fit**	A warning message is displayed: *All Output Setup Will Be Changed!*
4. Press **F1 Store**	The DMX or S-Mix/High End addresses are now displayed in the output row of the assignment table. The updated connector assignments are also displayed.

Assigning a default space

Keypresses	**Results/Comments**
1. Press **F1 Set Address**	
2. Press **F5 Auto Setup**	
3. Press **F2 Default Space**	You are prompted to enter the default output length that will be assigned to all spots.
4. Select the number of DMX channels that will be apportioned to all of the spots.	
5. Press **F1 Store**	The message: *All Output Setup Will Be Changed!* is displayed.
6. Press **F1 Store**	The DMX addresses are now displayed in the output row of the assignment table.

Enabling/disabling spot output

You can disable a spot's output from the console. This is useful in case a spot is malfunctioning, avoiding physically disconnecting the psychotic device. Any spot disabled via the console can be enabled again.

Keypresses	**Results/Comments**
1. Press **F1 Set Address**	
2. Press **F1 Select Spot(s)**	A range of spots can be selected using the key sequence **[# → #]**.
3. Press **F2 Disable**	The output address of a disabled spot appears on a gray field.
or	
Press **F3 Enable**	

Device definitions

The Define Device option allows you to define DMX512 devices that are not included in the Default Device List or the System Pool. You can change the definition of an existing definition. There is also access to certain parameters of the L-Mix and S-Mix/High End devices.

A definition contains:

- The device's full name (up to 10 characters).
- 2 characters for the device's short name. This is the label that appears in the Assignment Table and the Stage Display.
- The ID number identifies the spot type for use in Palettes and when working with CAD programs.
- The output length is the number of DMX channels used by the device.
- The parameter names represented as 2 characters.
- The parameter control channels.
- The Parameter type. Parameters can be defined as continuous, discrete step, or mixed step parameters.
- Other options available in the device definition are: *I* invert parameter, *X* jump or fade in the crossfade, *L* include or exclude from the library.
- A further device definition option is the Edit Init option: include parameters in *Clear 1* or *Clear 2*, define a parameter's *Home* value.
- Parameter to wheel assignments. This is a separate option in the Mix Output menu.

The parameter names and their DMX control channels are found in the manufacturers' specifications.

Enter all information using an alphanumeric keyboard.

The definition table consists of the following columns:

- *P#* is the parameter number.
- *Nm* is the name of the parameter.
- *Hi* is the DMX offset for the most significant bit. For 8-bit and 16-bit parameters.
- *Lo* is the DMX offset for the least significant bit. For 16-bit parameters only.
- *N* is "nibble". This applies only to high-resolution pan and tilt (X1 and Y1).
- *LDR* stands for leader. This defines the beam angle.
- *Stp* defines the parameter as a discrete or mixed step parameter.
- *I* stands for invert.
- *X* stands for crossfade.
- *L* is for library.

Erasing devices from the device list

When you define a new device, you must make room for it in the device list. Select a device that you are not using at the moment and erase it from the device list. Use the Device Pool function to erase the device.

If the device you are intending to erase is one that you defined, you should store it in the User Pool before erasing it. (See Copying to the User Pool page 27-20)

Keypresses	Results/Comments
1. Press **F4 Device Pool**	
2. Use the arrow keys and select a device.	The selected device is highlighted in light red.
3. Press **F5 Erase Device**	"Spare" replaces the erased device.

Defining a device

After storing a new device definition, you should also store it in the User's Device Pool.

Keypresses	Results/Comments
1. Press **F2 Select Device**	
2. Use the arrow keys to select "spare".	You can also position the cursor on a device that will be *replaced* by the device you are about to define.
3. Press **F5 Define Device**	The field of the definition table turns red, showing that it is now active.
4. Using the alphanumeric keyboard, type in the full name of the device and a two-letter label (short name).	Use the arrow keys on the alphanumeric keyboard or on the console to position the cursor in the appropriate space.
5. Use ↓ to move the cursor to the Nm column	The Name Pool window is displayed. Assign the channel number specified for the X parameter of the device.
6. Type the parameter name (X) or select the parameter name from the Name Pool	
7. Repeat the procedure for Y**.**	
8. If pan and tilt resolution is 16-bit, assign DMX channels to x1 and y1. Then define a "high" nibble or "low" nibble.	
9. Continue to name parameters, and assign DMX channels: Hi – for 8 & 16-bit parameters. Lo – for 16-bit parameters.	Define the device according to the information provided in the manufacturers' specifications. See below for details on parameter definition.
10. When the definition is completed, press **F1 Store**	The device now appears in the device list and can be assigned spot numbers. It is expedient to save the device in the Users Device Pool.

Defining parameters

The parameters may be assigned in any numerical order desired. To take advantage of the powerful library function, assign gobos to parameter numbers p6, p7, p13, p15 and color parameters to p2, p3, p4, and p14 as indicated in the libraries' reference display, located below the device list.

Instead of typing the parameter names you can use the Name Pool.

You can assign parameters to wheels while defining each parameter or when you have completed the device definition.

Using the parameter names pool

When the cursor is position in the Nm column of the definition table, the Name Pool window opens. You can select the parameter name from the Name Pool.

The list of parameter names is arranged alphabetically. Pressing a letter on the alphanumeric keyboard jumps the cursor to the first entry of the selected letter. Example: when the Parameter Names Pool is active, press G on the alphanumeric keyboard. The cursor jumps to "GoboWheel".

Keypresses	Results/Comments
1. Position the cursor in the Nm column.	
2. Press Enter	The list of parameter names is now active; the short names appear on a red field.
3. Use the arrow keys to select the parameter name.	
4. Press Enter	The selected name appears next to the parameter number in the definition table. The active cursor is returned to the definition table.

Types of parameters

Each parameter is either continuous, discrete steps (D) or mixed steps (M).

1. An example of a continuous parameter is the x/y parameter. Continuous control is from 0 -- Full.
2. Discrete steps increment the parameters by one step. An example of discrete step is the gobo parameter, where each increment will move to the next gobo.
3. Mixed steps are also incremented by one step, however within each step there is continuous control. This occurs in the case of certain devices where two or more parameters share a common DMX channel. Use of mixed step insures against accidentally moving into parameter that shares a DMX channel with another parameter, while allowing continuous control within each step.
   Example: Channel 1 from 0% - 50% controls the iris and from 50% - 100% strobes and controls the strobe rate. Therefore, step 1 provides control of the iris from open to closed and step 2 provides control of the strobe function.

Defining discrete step parameters

Keypresses	Results/Comments
1. Follow steps 1 - 5 from the instructions above.	
2. Enter the parameter name and channel under Hi/Lo.	
3. Use the arrow keys and position the cursor under Stp.	A window containing the Step Definition is displayed in gray.
4. Enter the number of steps	Consult the manufacturer's specifications to determine how many steps to assign. The number appears in the Stp column
5. Press +	
6. Press ↵	The number of steps followed by a “d” is displayed in the Stp column. The Step Definition Window is now active and displayed in red.
7. Enter the value of each step in a range of 1-255 or percentage	Step values may be entered in bits or percentage. Use the spacebar on the alphanumeric keyboard or the **decimal point** or **F5** on the console to toggle between absolute and percentage definition.
8. Press **F1 Store**	Clear the window by moving the cursor to another parameter.

This procedure may be modified at every level without repeating the entire procedure. Simply place the cursor at the required step and modify.

To convert a discrete or mixed step to continuous, type 0 (zero) in Stp column.

Defining mixed step parameters

Keypresses	Results/Comments
1. Follow steps 1 - 5 from the instructions above.	
2. Enter the parameter name and channel under Hi/Lo.	
3. Use the arrow keys and position the cursor under Stp.	A window containing the Step Definition is displayed in gray.
4. Enter the number of steps	Consult the manufacturer's specifications to determine how many steps to assign.
5. Press ↵	The number of steps followed by a “m” is displayed in the Stp column. The Step Definition Window is now red and active.
6. Enter the value of each step in a range of 1-255 or percentage	Step values may be entered in bits or percentage. The spacebar on the alphanumeric, the **decimal point**, or **F5** toggle between absolute and percentage.
7. Press **F1 Store**	Clear the window by moving the cursor to another parameter.

Defining other parameter attributes

Attribute	What it does
I (invert)	This provides the option of inverting a parameter. Example: When the parameter value for the iris is at 0% the iris is fully open. When the parameter value is FL the iris is closed. Defining the parameter as inverted results in the iris being open when the parameter value is FL and closed when the parameter value is 0.
X (crossfade)	Choose between the parameter jumping in the crossfade or fading in the crossfade.
L (library)	Parameters that are normally included (see the library reference display) in libraries may be excluded.

Keypresses	Results/Comments
1. Move the cursor to one of the columns described above.	A window opens with instructions for determining the attribute setting.
2. Use **[+]** or **[—]** according to instructions.	

Ignition

Many moving lights have a control channel to strike the lamp, extinguish the lamp, reset the device, and control the fans. This control channel is the channel addressed when selecting the ignite function.

The Ignite parameter is definable for DMX512 controlled spots only. The Ignition definitions for L-Mix or S-Mix devices are not programmable.

As with all device definitions, consult the manufacturers' specifications.

See Chapter 5 Selecting and Editing Spots for instructions on igniting spots.

Continuous ignition definitions for DMX spots

If the ignite channel is continuous, there are 3 possibilities:

1. DMX is set at 99
2. DMX is set to control channel according to specifications and time is set to 99.
3. DMX is set to control channel according to specifications and time is set to any value except 99.

Example 1: DMX set at 99. Superscan Zoom uses the ignition definition.

Contr	DMX	Time	Value
ignite	99	6	0

Example 2: DMX is set according to manufacturer's specifications and the time is set to 99. In this case the default value or a selected value is sent indefinitely until a new ignition command is transmitted.

Contr	DMX	Time	Value
ignite	12	99	0

Example 3: DMX is set according to manufacturer's specifications and time is set from 1 up to and including 14. Setting the time to more than 14 results in an *illegal number* message. The default or selected value is transmitted; the duration of the transmission is determined by the time value. It is illegal to assign 99 to both DMX and time.

Contr	DMX	Time	Value
ignite	6	6	0

Discrete step ignition

The Ignition parameter may also be defined as having discrete steps. Consult the manufacture's specifications for the details step divisions. An example of a moving light having discrete step ignition is MAC 1200.

Each step is given a unique time. A step whose time is 99 continues transmitting until a new ignite command is entered.

Shared Ignition channels

Some devices, especially Martin devices, are designed so that the DMX offset for the ignition channel is shared with another parameter. An example of this is MAC 500 where Ignition and Shutter share a DMX offset. You can assign the specified DMX offset to Ignition and define the shutter parameter with the same DMX offset.

Example: DMX 1 controls the shutter for strobing, the strobe rate, and ignition. The ignition function uses bits 225 – 255. The strobe and strobe rate use from 1 – 224. Define the Strobe parameter as having 3 steps. Step 1 for the shutter open, step 2 for shutter closed, and step 3 for strobe rate. In the step window assign the End as 224. Now you can control the strobe parameters usual and the ignition sequences also function as usual.

Edit init

Another option available under the Define Device function is Edit Init. Clear 1 (CL1), Clear 2 (CL2), and Home values are determined by the assignments in Edit Init.

The values for CL1, CL2, and Home are entered in percentage, using the numeric keypad. The value may be viewed in either the Numeric (percentage) display or Symbolic display. The Symbolic display shows the discrete and mixed step values as they actually appear in the editor and spot display.

Press **F5** to toggle between the Numeric and Symbolic displays.

Home

The home definition determines the parameter values to which the spot returns when **[HOME]**, **[CL1]**, or **[CL2]** is pressed.

Spot Patch menu and Leader menus also access the home definition. For example, the iris is set at full in the home definition and the dimmer is set at FL; when converting a

position in the Spot Patch menu the iris of the selected spot will be fully opened and the dimmer on at 100%.

Clear 1/Clear 2

Color parameters are usually assigned to Clear 1. Gobo parameters are usually assigned to Clear 2.

Assigning parameters to wheels

When defining a new device, you can assign parameters to the wheels during the definition process.

4 parameters can be assigned to each wheel. When assigning parameters to wheels, you should plan the wheel bank assignments (see below). Parameter to wheel bank assignments should be done when all of the parameters to wheels assignments are complete.

A parameter can be assigned to more than 1 parameter key. The procedure described below can be carried out before going on to the next parameter or when you have finished defining all of the parameters.

To assign a parameter to a wheel, the cursor must be on the parameter name.

Dimmer and x are automatically assigned to the dimmer wheel. P1 and y are automatically assigned to the iris wheel.

Keypresses	Results/Comments
1. After completing the definition of a parameter, return the cursor to the parameter name.	
2. Press the parameter key associated with the wheel you want to use.	The parameter name appears on the LED display.
3. Press **F1 Store**	

Cancelling a wheel assignment

Example: Cancel the wheel assignment for the gb parameter.

Keypresses	Results/Comments
1. Go to the Mix Output menu.	
2. Press **F2 Select Device**	
3. Press **F5 Define Device**	
4. Place the cursor on the gb	
5. Press **ERASE**	
6. Press the parameter key for gb	
7. Press **F1 Store**	The parameter disappears from the LCD display.

Assigning parameters to wheel banks

The parameters are further organized into wheel banks.

Wheel Banks	Examples of Parameter Assignments
I - Intensity	Dimmer, Iris, Frost
F - Focus	Pan, Tilt
C - Color	All color parameters, such as magenta, cyan, yellow, and color wheels. Also related parameters, such as color spin.
B - Beam	All gobo parameters, prisms, and related parameters, such as gobo spin, and rotation rates.
1 & 2	Sabre contains 2 extra wheel banks for your convenience.

It is not allowed to assign more than 1 parameter per wheel to the same wheel bank. Example: If the group of parameters assigned to wheel 1 are magenta, cyan yellow, and the color wheel, only 1 of these parameters can be assigned to bank C (color). To assign all of these parameters to wheel bank C, they must be assigned to different parameter wheels.

Example: Assign parameters yl, cy, mg to wheel bank C. Assign parameters gb and fc to wheel bank B.

Keypresses	Results/Comments
1. Press **F1 Bank Set Up**	The Wheel Banks set up is displayed.
2. Press **[C]**	If there are assignments to bank C, the bank you are now editing is displayed in yellow on a red field.
3. Press the parameter keys for yl, cy, mg	The wheel bank assignment is displayed in white.
4. Press **[B]**	If there are assignments to bank B, the bank you are now editing is displayed in yellow on a red field.
5. Press the parameter keys for gb and fc.	The wheel bank assignment is displayed in white.
6. When you have completed all the parameter to bank assignments, press **F1 Store**	When a wheel bank is selected during editing, the parameters assigned to that wheel bank are immediately selected.

Removing a wheel bank assignment

Keypresses	Results/Comments
1. Press **F1 Bank Set Up**	The Wheel Banks set up is displayed.
2. Select one of the banks, using the bank keys on the console.	
3. Press the key for the parameter you want to remove from the assigned wheel bank.	The wheel bank assignment cleared from the display.
4. Press **F1 Store**	You are returned to the main display of the Mix Output menu.

Defining an external dimmer

The definition function contains another useful item: the External Dimmer assignment.

The purpose of this function is to allow the dimmer of a lamp controlled through a conventional dimmer frame, but fitted with moving accessories, to become one of the moving light parameters.

Some examples of this type of devices are VL5, VL6, and conventional projectors mounted on yokes. The default definitions of Varilite 5 and Varilite 6 include external dimmers.

Example: A Profile Zoom is mounted on a yoke. A conventional dimmer controls the lamp, while the yoke is associated with the X/Y and focus parameters of a moving light.

Assume that this Profile Zoom is circuited to dimmer 100 and controlled by channel 100 is mounted on a yoke with DMX address set at 1. An identical unit is circuited to dimmer 101, controlled by channel 101 and the yoke DMX address is set at 7. To set up the external dimmer function for this configuration, it is necessary to define the yoke as a device in the definition table (if it is not already defined) and patch the unit as a spot number.

There are 4 steps when defining an External Dimmer:

1. Define the device as having an External Dimmer.
2. Patch the device to a spot number.
3. Assign the Out address.
4. Patch the spot number to the dimmer, in the Channel Patch menu.

The steps below assign yokes, whose external dimmers are dimmers 100 and 101, to spots 5 and 6.

Step 1 - Defining a yoke

Keypresses	Results/Comments
1. Press **F2 Select Device**	
2. Place the cursor on the space you have reserved for the yoke definition.	
3. Press **F5 Define Device**	The definition table field turns red.
4. Type: Yoke, Yo,	Identify yoke as a new device. The label is **yo**.
5. Use the procedure described above to define the x and y parameters.	
6. Move the cursor to parameter *DM*.	
7. Type: 99	Identifies this parameter as an *external dimmer.*
8. Define the rest of the parameters	
9. Press **F1 Store**	At this point you may want to also store the device in the User's device pool. (See **Error! Reference source not found.**, page **Error! Bookmark not defined.**)

Step 2 -Assigning spot numbers

The next step is to patch the unit to a spot number.

Keypresses	Results/Comments
1. Press **F2 Select Device**	
2. Press the arrow keys and Select "yoke".	
3. Press **F4 Select Spot #**	
4. Using the example above, enter **5** on the keypad.	
5. Press **F2 Thru Spot #**	
6. Using the example above, enter **6** on the keypad.	
7. Press **F1 Store**	Spot numbers 5 and 6 control yokes.

Step 3 - Setting up the output address

To complete this operation it is now necessary to assign the DMX address.

Assuming that the yoke has parameters: x and y with high-resolution movement, focus, zoom it requires 6 DMX channels. Since the local DMX address, for the first yoke, has been set at 1, the output address under spot 5 must be 1. The DMX address of the second yoke, assigned to spot 6, is 7. The output address under spot 6 must be 7. (The DMX outputs assignments procedure is described above.)

Step 4 -Soft patching in the Channel Patch

The last phase of patching when using external dimmer is done in the Channel Patch menu.

Patch the spot number associated with the unit to its hard patch dimmer number. In this case, dimmers 100 and 101.

Keypresses	**Results/Comments**
1. Go to the Channel Patch menu.	
2. Press **F1 Assign Dimmer**	
3. Enter **100** on the keypad.	
4. Press **F3 To Channel**	Sabre prompts for the spot number of the first yoke.
5. Enter **5** on the keypad.	
6. Press **F2 Thru Channel**	Sabre prompts for the spot number of the last yoke.
7. Enter **6** on the keypad.	
8. Press **F1 Store**	Dimmers 100 and 101 are assigned channels 5 and 6 respectively. The channels are marked with an **E**, signifying that they are actually spot numbers associated with an external dimmer.

IMPORTANT:

Channels representing spot numbers in the channel patch table are no longer available as conventional channel numbers. To avoid confusion, clear their default assignments from the channel patch table. If the dimmers associated with those channel numbers are used, they must be assigned other channel numbers.

Example (using the configuration described above):
Patch dimmer 100 to channel 5. An E appears alongside 5 in the channel row, identifying this as an external dimmer associated with moving lights. After having done this, channel 5 still is associated with dimmer 5 unless the 1 to 1 default patch assignment has been cleared. Since channel 5 has become part of the moving spots, its original default assignment must be cleared. In order to use dimmer 5, simply assign a channel number other than 5.

If a range of channels is selected in the editor, the channels that are identified as external dimmers are ignored.

Example: Select channels 1 → 20 and Sabre skips over channels 5 and 6 since they are now considered part of moving lights and are accessed through spot numbers.

The Device Pools

A device pool is a database containing definitions for types of moving lights.

The system contains 2 device pools: the System Pool and the User Pool.

The System Pool contains 32 pre-defined devices. These represent all the devices defined, at present, for the Sabre lighting console. There is room for 36 devices. Any device can be selected from the System Pool and added to the Device List.

The User Pool provides a reservoir for user defined devices that do not necessarily appear in the System Pool.

Example: A new DMX protocol device that has just been acquired, and does not appear in the system device pool, can be defined and stored in the User Pool.

Another use of the User Pool is to store any system-defined devices that you have modified. For instance, if you cancel an inversion of a parameter, this modified definition can be stored in the User Pool. In this case, it is recommended to store the definition under a different name to avoid confusion.

All data stored in the User Pool is stored to the hard or floppy disk when recording show data. Alternately, a special disk can be created specifically for these definitions. This information is lost after cold starting the system and must be reloaded.

[UP 1] and **[DOWN 1]** toggles between system pool and user pool.

The System Device Pool

Devices in the system pool can be assigned to the device list or added to the user pool.

Assigning a device to the device list

Keypresses	Results/Comments
1. Press **F4 Device Pool**	If the system pool is not displayed, press **[UP 1]** or **[DOWN 1]**.
2. Use the arrow keys to position the cursor - Highlight the device, in the device list, that is to be replaced by the device selected in the system pool.	
3. Press **F1 Get From System Pool**	The device pool is active (red field).
4. Use the arrow keys to select device	
5. Press **F1 Put In Device List**	The device highlighted in the System Pool is added to the device list.

Copying to the User Pool

Keypresses	Results/Comments
1. Press **F4 Device Pool**	If the system pool is not displayed, press **[UP 1]** or **[DOWN 1]**.
2. Press **F1 Get From System Pool**	The device pool is active (red field).
3. use the arrow keys to select device	
4. Press **F5 Put In User Pool**	The device highlighted in the System Pool is added to the user pool.

The User Device Pool

Copying a device from the device list to the User Pool

If you have defined a new device or modified the default definition of a device, you should store the new definition in the User Pool.

Device definitions stored in the User Pool are still available after warm start. If you do not store new or modified definitions in the User Pool, this information is not recorded with the show file and is, therefore lost after cold start.

Keypresses	Results/Comments
1. Press **F4 Device Pool**	If the system pool is not displayed, press **[UP 1]** or **[DOWN 1]**.
2. Use the arrow keys to select a device	From the Device List, select the device that you want to store in the User Pool.
3. Press **F4 Put In User Pool**	The device is added to the User Pool. Record to diskette to store the user pool for future use.

Copying a device from the User Pool to the device list

Keypresses	Results/Comments
1. Press **F4 Device Pool**	If the system pool is not displayed, press **[UP 1]** or **[DOWN 1]**.
2. Use the arrow keys to select device from the device list.	The device from the User Pool replaces the selected device. If there are ‘Spares’ in the Device List the User Pool device will occupy the first spare space.
3. Press **F1 Get From User Pool**	The User Pool is now active, displayed on a red field.
4. Use the arrow keys to select the desired device, from the User Pool.	
5. Press **F1 Put In Device List**	The device from the User Pool will replace the highlighted device in the Device List.

Erasing a device

Devices can be erased from the User Pool. To erase devices from the device list, see page 27-14

Keypresses	Results/Comments
1. Press **F4 Device Pool**	If the system pool is not displayed, press **[UP 1]** or **[DOWN 1]**.
2. Press **F1 Get From User's Pool**	
3. Use the arrow keys to highlight a device.	
4. Press **F5 Erase Device**	The selected device is deleted.

Adding a new device to a show

Example: You are working on show 2. There is a device that appears in the Device List for show 1 that you want to add to the Device List in show 2.

Keypresses	Results/Comments
1. Make sure you show (show 2 as per the example) is recorded.	
2. Load Mix Device Only from show 1.	The current Device List is changed according to the Device List just loaded from show 1.
3. Go to Mix Output menu.	
4. Put the new device in the User's Pool (see above).	
5. Load Mix Device only from show 2.	The original Device List for show 2 is restored.
6. Add the new device in the User's pool to the Device List.	

The Patch menu

This is menu number. The Patch menu configures the trackball for logical beam movement, regardless of the physical orientation of the spots.

If you have a number of spots in different positions- one with its head pointed stage right, on facing stage left, another lying upstage on its back, Patch Position allows the trackball to address each spot logically. If you move the trackball left, all the spots will move to your left; if you push the trackball up, all the spots will move upstage.

There are 8 different positions. Positions 1 - 4 simply invert one or both of the axes. Positions 5 - 8 swap the x and y axes.

Assigning a new patch position

If you have selected a range of spots, Sabre turns on one lamp at a time. So, if the range of spots is spots 1 - 6, first spot 1 is turned on.

Keypresses	Results/Comments
1. Press **F1 Patch Position**	The prompt: *Patch position x/y of spot #:* graphic displays of the 8 positions are displayed.
2. Select a spot.	A range or a group of spots can be selected.
3. Press **F1 Convert To**	The dimmer is turned on. A small window showing the x/y co-ordinates of the spot is displayed.
4. Enter a position number on the numeric keypad.	
5. Use the trackball and move the spot to see if you chose the correct position.	If you want to try another position, just enter a new position number through the keypad.
6. Press **F1 Store Convert**	
7. If you have selected a range of spots, press **F3 Advance**	The dimmer is on for the next spot.
8. Repeat steps 3 – 6.	

Returning to the default position

Restore all the assigned patch positions to their default position (position 1):

Keypresses	Results/Comments
1. Press **F3 Default Position**	The prompt asks *Are You Sure?*
2. Press **F1 Store**	All of the spots are assigned position 1.

CHAPTER 28
CHANNEL AND SCROLLER PATCHING

This chapter includes:

Channel Patch

- Connector information
- Soft patching dimmers to channels
- Clearing patch assignments
- Restoring the default patch
- Exchanging dimmers
- Assigning dimmer curves
- Disabling General Master control
- Enabling General master control
- Viewing free dimmers
- Testing channels and dimmers

Scroller Patch

- Selecting a scroller
- Patching a scroller to a control channel
- Defining a dark gel frame
- Canceling a dark gel assignment
- Changing the number of frames
- Setting up frames
- Copying the scroller setup
- Back door to channel patch
- Print the Scroller Patch

Channel Patch

The Channel Patch menu, offering many options for dimmer and channel definition, is menu number 7.

Sabre controls up to 1,024 channels, which may be soft-patched.

The patch table consists of 3 lines per row:

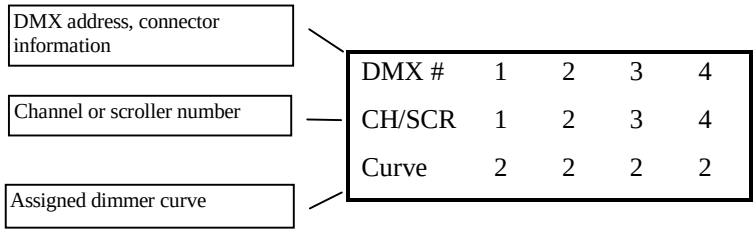


Figure 1 Channel Patch

The Default Patch is 1 to 1. If you are using 2 channel connectors, the DMX address for the second connector begins at 1. Its channel, however, is 513.

The default dimmer curve is Curve 2

Connector Information

Sabre can be configured to use 1 or 2 output connectors for DMX channels. When the console is configured for up to 512 dimmers, 1 output connector is reserved for channels. If the system is configured for 513 – 1024 dimmers, 2 output connectors are reserved for channels.

The channel connector is defined in the Service Tools/Config System/Special Numbers/bit H. If you need 2 connectors for channels make sure that bit H is 1, 2, 3, 4, or 5. If the console is configured for up to 512 dimmers, you can assign output connector 6 as the channel connector.

The connector number appears at the head of the DMX row in the Channel Patch table. It also appears above the F keys' display, so you know which connector you are patching or examining.

The color key for the Channel Patch is:

Color	**What it represents**
Black	DMX address (dimmer) under G.M. control
Yellow	DMX address (dimmer) not under G.M. control
Blue	Default channel
Red on a white field	Soft patch channel
▪ 1st row –yellow – GM control disabled. ▪ 2nd row – the scroller number appears in a different font in red on a white field. ▪ 3rd row – control channel number.	Scroller assignment - DMX address to scroller
An *s*, red on a white field, appears next to the curve number.	2 Parameter control channel (dimmer and scroller)
curve 1 S-curve: red curve 2 linear: brown (default curve) curve 3 non-dim: violet curve 4 park: white	Curves
A yellow capital E appears on a black field.	DMX addresses (dimmers) operating as external dimmers. (See Chapter 27)

Soft patching dimmers to channels

A single dimmer or a range of dimmers can be patched to a single control channel.

Keypresses	**Results/Comments**
1. Go to the Channel Patch menu.	The Patch Table is displayed. The current connector is also displayed.
2. If necessary, press **[@]** to toggle the connector.	
3. Press **F1 Assign Dimmer**	
4. Select dimmer number.	
5. Press **F1 Thru Dimmer**	Press **F2 & Dimmer** to select non-sequential dimmers.
6. Enter the final dimmer number in the range.	
7. Press **F3 To Channel**	Sabre prompts for a channel number.
8. Enter the channel number	
9. Press **F1 Store**	The soft patch channel number appears in red on a white background.

Assigning sequential channels to dimmers

You can assign sequential channels to sequential dimmers.

Example: assign channels 101 - 121 to dimmers 1 - 21.

Keypresses	Results/Comments
1. If necessary, press **[@]** to toggle the connector.	
2. Press **F1 Assign Dimmer**	Sabre prompts for a dimmer number.
3. Select dimmer 1.	
4. Press **F3 To Channel**	Sabre prompts for a channel number.
5. Enter the channel 101 on the numeric keypad.	
6. Press **F2 Thru Channel**	Sabre prompts for a channel number
7. Enter the channel 121 on the numeric keypad.	
8. Press **F1 Store**	Channel 101 is assigned to dimmer 1, channel 102 to dimmer 2, channel 103 to dimmer 3, etc.

Assigning dimmers to scrollers

To have communication with the scrollers, you must assign them dimmer addresses in the Channel patch menu. The assignments must be identical with the local address on the scroller. The number of scrollers defined in the System Configuration determines the number of scrollers in the system.

Default DMX addresses for scrollers are the last dimmers in the system. Example: the system configuration is 512 dimmers, 480 channels, and 20 scrollers. The default assignments in the Channel Patch menu are:

DIM	493	494	495	496	497	498	499	500	501	502
CH/SCR	1	2	3	4	5	6	7	8	9	10
CURVE	scr	scr	scr	scr	scr	scr	scr	scr	scr	scr

Figure 2 Scroller assignments in the Channel Patch

The dimmer numbers appear in yellow, signifying that they are not under General Master control. Scroller assignments are automatically removed from General Master control to avoid mishaps.

Keypresses	Results/Comments
1. If necessary, press **[@]** to toggle the connector.	
2. Press **F1 Assign Dimmer**	Sabre prompts for a dimmer number.
3. Enter a dimmer number.	
4. Press **F1 Thru Dimmer**	This allows selecting a range of dimmers. Use **F2 & Dimmer** to select non-sequential dimmers.
5. Select the final dimmer number in the range.	
6. Press **F4 To Scroller**	The dimmer/s selected must correspond to the scroller's local address.
7. Enter the scroller number on the numeric keypad.	
8. Press **F1 Store**	The Dim to scroller assignments are stored and displayed in the patch table in the Channel Patch menu and the Scroller menu.

More than one dimmer number can be assigned to a scroller number, thus 1 control channel can access more than 1 scroller.

Example: Scrollers, with dimmer addresses 201 - 204 are mounted on 4 PAR cans. The PAR cans are patched to control channel 56. Assign Dim 201 -204 to scroller 1 and then patch scroller 1 to control channel 56. Channel 56 now controls the dimmers of the 4 PAR cans and their scrollers. In this set up, the scrollers are always at the same frame.

For convenience, **F5** (on the second page of options) toggles between the Channel Patch menu to the Scroller menu.

Clearing patch assignments

Channel or dimmer patch assignments can be cleared.

Dim numbers for cleared assignments appear in yellow.

Keypresses	Results/Comments
1. If necessary, press **[@]** to toggle the connector.	
2. Press **F2 Clear Assign**	
3. Press **F1 Channel**	Select channel to clear.
4. Press **F3 Store**	Now the channel is "unpatched". The dimmers appear in yellow. Restore assignments by using the previously described patch dimmer to channel function.

Restoring the default patch

The system boots up with a 1 to 1 default in the Channel Patch.

If soft patching has been done and you wish to restore the Default patch, use this function.

The entire patch table, single dimmers, or a range of dimmers may be restored to the default patch. The example below demonstrates restoration of the entire patch table.

Keypresses	Results/Comments
1. Press **F3 Default**	
2. Press **F1 All Patches**	The system asks *Are You Sure?*
3. Press **F1 Yes**	Confirm the command. The entire patch table will revert to 1 to 1 patch assignments.

Exchanging dimmers

Exchanging dimmers swaps the dimmers' channel assignments.

Example: Dimmer 89 is patched to channel 89 and dimmer 90 is patched to channel 56. Exchanging the dimmers assigns channel 89 to dimmer 90 and channel 56 to dimmer 89.

Keypresses	Results/Comments
1. If necessary, press **[@]** to toggle the connector.	
2. Press **F4 Exchange Dimmers**	Sabre prompts: *Exchange Dimmer #:*
3. Enter the dimmer number in response to the prompt	
4. Press **F1 With Dimmer**	
5. Enter the number on the numeric keypad.	
6. Press **F1 Store**	Complete the dimmer exchange. The result is displayed like all other soft patches.

Assigning dimmer curves

There are 4 standard dimmer curves available:

1. Linear
2. S curve
3. Non-Dim - a dimmer set for non-dim jumps to full when the dimmer level reaches 50%. There is no dimmer response between 0% and 49%. This is useful for motors and strobes.
4. Park - is used for instruments that are always on, such as work lights or smoke machines. Park is always at 100%.

Keypresses	**Results/Comments**
1. If necessary, press **[@]** to toggle the connector.	
2. Press **F5 Curve & G.M.**	The system prompts you to enter the dimmer number for new curve assignment.
3. Enter the dimmer number on the numeric keypad.	A range of dimmers or a group of non-sequential dimmers can be selected.
4. Press **F3 Select Curve**	The F keys display the curve options.
5. Select the desired curve.	The selected curve appears in the last row of the Channel Patch table.

Disabling General Master control

Dimmers can be removed for General master control. This is useful in the case of scrollers, motors, smoke machines, and other special effects.

Keypresses	**Results/Comments**
1. If necessary, press **[@]** to toggle the connector.	
2. Press **F5 Curve & G.M.**	The system prompts you to enter the dimmer number.
3. Enter the dimmer number on the numeric keypad.	A range of dimmers or a group of non-sequential dimmers can be selected.
4. Press **F5 Disable G.M.**	The selected dimmer/s are displayed in yellow. They do not respond to changes in the General Master level.

Enabling General Master control

Dimmers that were removed from General master control can be re-instated.

Keypresses	Results/Comments
1. If necessary, press **[@]** to toggle the connector.	
2. Press **F5 Curve & G.M.**	The system prompts for the dimmer number.
3. Enter the dimmer number	More than one dimmer can be selected at this time.
4. Press **F4 Enable G.M.**	The selected dimmer/s are displayed in black.

Viewing free dimmers

This function displays the free or unused dimmers.

The color code key for this display is:

Color	Status
Blue on a gray field	Cleared dimmer assignments
Black on a white field	Dimmers assigned to scrollers and channels that are used in memories
Black on a yellow field	Free (unused dimmers)

Testing channels and dimmers

You can test channels or individual dimmers. When testing dimmers any channel patching is ignored. .

Keypresses	Results/Comments
1. Press **F6 More** and then **F3 Test**	
2. If necessary, press **[@]** to toggle the connector.	
3. Press F1 Channel to test channels. Press F2 Dimmers to test dimmers.	The channels/dimmers are displayed. You are prompted for a channel or dimmer number.
4. Enter the channel or dimmer number and press **[FULL]** or assign intensity using the dimmer wheel.	
5. Go to the next or previous channel or dimmer by pressing **F1 Previous** or **[-]** and **F2 Next** or **[+]**.	The previously selected intensity is assigned to the new channel/dimmer selection.

Scroller Patch

Through the Scroller Patch menu, Sabre controls DMX 512 color scrollers in a unique way. This is menu number 13

The luminaire mounted with a scroller is considered a two parameter device, the dimmer of the fixture being one parameter and the scroller the second parameter. To take advantage of the unique scroller functions, scrollers must be patched to control channels in the Scroller menu.

There are various functions available for scroller management:

- Scrollers are patched to the control channels that control the dimmer of a fixture, thus designating the luminaire as a two parameter fixture: dimmer parameter and color parameter.
- A frame may be designated as a "dark gel", keeping this gel in constant movement to reduce gel burn in dark filters.
- The number of frames can be customized.
- Scroller set up can be copied.
- Fine adjustment of the frame position.

The Scroller Patch Table displays all the information pertinent to scrollers.

CHN	SCL	DMX	# F	1	2	3	4
Control number	The scroller number	The scrollers' DMX addresses*	The number of frames in this scroller	Frame value**	Frame value	Frame value	Frame value

Figure 3 Scroller Patch Table

* Scrollers are assigned DMX addresses in the Channel Patch menu, Assign Dimmer option. If more than one dimmer is assigned to a scroller the assignment is represented by a plus sign (+) that appears in the DMX address column of the Scroller Table. This option is also available in the Scroller Patch. If selected you are immediately bumped to the Channel Patch.
If the system is configured for 2 channel connectors, scroller DMX addresses are color coded; the low connector addresses are displayed in gray, the high connector addresses are displayed in green.

** The number of frames defined in Service Tools/Sys Config/Special Numbers determines the number of frames default. The number of frames can be modified per scroller in the Scroller Patch menu. The frame values default to a 0 - 100 scale based on the number of frames.
The monitor displays up to 20 frames on page 1. If the system is configured for more than 20 frames page the Scroller menu display by pressing
F5 Display →. .

Selecting a scroller

Enter the scroller number on the numeric keypad. It is displayed in yellow after the prompt *Scroller #:*

Or

Pressing **[+]** or **[-]** moves the highlight through the Scroller Patch Table. As soon as you select one of the options the number of the highlighted scroller is displayed next to the prompt.

Patching a scroller to a control channel

Patch a scroller to the channel number of its corresponding lighting unit, thus creating a two parameter channel: dimmer and scroller.

The scroller list arranges itself in numerical order by control channels.

Example: Scroller 1 is mounted on a 5 kW lighting unit controlled by channel 100. Patching scroller 1 to control channel 100 allows you to access the dimmer of the fixture and the scroller using only one channel selection.

Keypresses	Results/Comments
1. Select scroller 1	
2. Press **F2 Assign to Chan**	The scroller number is highlighted in the patch table. The system prompts: *Assign to channel #.*
3. Enter 100 using the numeric keypad.	
4. Press **F1 Store**	The channel number is displayed in the far left column of the scroller patch display.

Defining a dark gel frame

The dark gel function keeps two consecutive color frames in motion as long as the dimmer of the lighting unit is working at more than 10% intensity.

This saves on gel burn when using very dark colors, as no single area of the gel is constantly exposed to the heat of the lamp. When assembling the gel ribbon cut a double length of dark colors.

Keypresses	Results/Comments
1. Enter the scroller number.	
2. Press **F4 Dark Gel**	Prompt line: *Set Dark Gel From Frame #*
3. Select the first frame of the dark gel	The system automatically recognizes the next gel frame as the continuation of the dark gel.
4. Press **F1 On**	A small, red 'd' appears between the two frame numbers in the frame table.

Canceling a dark gel assignment

To cancel a dark gel assignment, follow the same procedure described above; press **F2 Off** instead of F1 **On**.

The little 'd' denoting dark gel disappears from the frame table.

Changing the number of frames

Sabre offers the option of changing the number of frames for individual scrollers.

The default is the maximum number of frames as defined in Service Tools, system configuration, special numbers. Only a smaller number of frames can be defined in the Scroller menu.

Keypresses	**Results/Comments**
1. Select scroller the scroller	
2. Press **F3 No. of Frames**	The system prompts for the number of frames.
3. Enter the number of frames on the numeric keypad	
4. Press **F1 Store**	The system automatically adjusts the frame increments to correspond with the number of frames.

Setting up frames

It may be necessary to fine-tune the frame increments. This is easily done via the Set Up Frames function. When entering this function, the unit's dimmer is automatically turned on to 80%.

Keypresses	**Results/Comments**
1. Select the scroller	
2. Press **F1 Setup Frame**	The prompt *setup frame #:* appears. Select the frame number.
3. Press **F1 Enter**	The lamp comes on at 80%. The *prompt @ % (use wheel or numeric pad)* instructs you how to adjust the frame.
4. Press **F1 Store Frame**	

If the offset of the gel ribbon is the same for all of the frames, you can store the adjustment with an identical offset for all of the gel frames.
Press **F2 Store Fr w/offset**. This selection stores the identical compensation to all of the subsequent frames.

Copying the scroller setup

After setting up a scroller to your specifications, the information may be copied to another scroller.

Keypresses	Results/Comments
1. Select the scroller you want to copy	
2. Press **F1 Copy to Scroller**	Sabre prompts for the scroller number you are copying to.
3. Enter the scroller number on the numeric keypad	
4. Press **F1 Store**	Number of frames, frame value modification, and dark gel assignments are copied to the selected scroller.

Back door to Channel Patch

Since the Scroller menu and the Channel Patch menu are so interdependent there is a "back door" that facilitates moving between the two menus.

While in the Scroller menu, press **F4 Channel Patch** (on the second page of options) and you will find yourself immediately transported to the Channel Patch menu.

In the Channel Patch menu press **F5 Scroller** and you are transported immediately to the Scroller menu.

CHAPTER 29
MIDI

This chapter includes:

Configuring the System for MIDI

To configure Sabre for MIDI communication, you must enable the bits A and K in the Special Functions configuration under Config Sys in Service Tools. You must also define the MIDI communication channel in the System Parameters menu.

Keypresses	Results/Comments
1. Go to Service Tools.	
2. Press **F3 Config Sys**.	
3. Enter the password.	
4. Press **F4 Special Functions**	The cursor should be on Bit A MIDI.
5. Press **F1 Toggle**	Bit A is now toggled to *Enable*.
6. Press **F2 Down** until the cursor is on Bit K Internal MIDI	
7. Press **F1 Toggle**	Bit K is now toggled to *Yes*
8. Press **F6 Enter & exit**	The main Config Sys menu is displayed. A confirmation request is displayed.
9. Press **F6 Store**	
10. Turn off Sabre and switch it back on.	Sabre now boots up. After major changes in the system configuration it is necessary to power down and power up again.
11. Press **F1 Cold Start**	The system exits Service Tools and comes up in editor mode.
12. Press **[MENU]**	The menu list is displayed.
13. Press **8 [ENTER]**	You are now in the System Parameters menu.
14. Use the arrow keys on the Sabre and move the cursor to **MIDI i/o channel**.	
15. Press **F1 Enter**	Enter the MIDI communication channel (channels 1 - 16).

Enabling/Disabling MIDI

When MIDI is enabled, Sabre either transmits or receives MIDI commands. When MIDI is disabled, Sabre ignores all MIDI communication.

You can easily turn on or turn off the MIDI function from the console panel.

Turn MIDI on or off when the editor is in idle. A flag at the top center of the display shows the MIDI status.

Turning MIDI on

Keypresses	Results/Comments
1. Press **[MIDI]**	*MIDI* appears in the command line.
2. Press **[FULL]**	The MIDI flag, appearing at the top of the display reads: *I/O ON*.

Turning MIDI off

Keypresses	Results/Comments
1. Press **[MIDI]**	*MIDI* appears in the command line.
2. Press **[ZERO]**	The MIDI flag, appearing at the top of the display reads: *I/O OFF*.

The MIDI Menu

The MIDI menu, menu 17, offers the options of enabling or disabling all or part of the input keys, output keys, input controllers, and output controllers. All the keys and controllers can be defined as note off, note on, or control change responsive.

When receiving MIDI commands, an exterior instrument sending MIDI signals initiates console operations. The exterior instrument can be a synthesizer or a PC with a music program or any other instrument that communicates via MIDI.

For instance, a synthesizer is connected to the lighting console and a specific note is programmed to activate a pre-determined light cue.

Specific notes can also be programmed to flash the contents of a controller, thus allowing the musician to "play" the lights as s/he plays the instrument.

MIDI transmission is often used to control other lighting consoles.

The MIDI menu offers the options of enabling, disabling, and editing all or some of the input keys, output keys, input controllers, and output controllers. All the keys and controllers can be defined as note off, note on, or control change responsive.

Enabling keys and controllers

An asterisk next to a key denotes that it is enabled and responsive to MIDI commands.

It is recommended to enable only those keys that you will actually use.

Keypresses	Results/Comments
1. Press **F1 Input Keys/ F2 Output Keys** or	Select input keys. A list of all of the keys in the system and their MIDI command codes is displayed. There are 6 pages of MIDI codes.
F3 Input Cntrlrs/F4 Output Cntrlrs	Select input controllers. A list of playback devices and their MIDI command codes are displayed.
2. Use the arrow keys on the console to highlight the required key	
3. Press **F1 Enter**	The key name is highlighted in red.
4. Press **F2 Toggle**	Inserts an asterisk (*) in front of the key name, denotes that this key is enabled and will respond when an appropriate MIDI command is received.
5. Press **F1 Store**	

To disable keys follow the same procedure. When disabled there is no asterisk in front of the key name.

The keys that are enabled as default are:

- **GO A/B**
- **HOLD A/B**
- **BACKFADE (A/B)**
- **GO TO A/B**
- **SEQ A/B**
- **AUTO ON**
- **GO C/D**
- **HOLD C/D**
- **SEQ C/D**
- **<-> on C/D**
- **GO TO C/D**

Editing MIDI data for keys and controllers

In addition to enabling keys and controllers, the message and data assignments can be edited.

The Input and Output keys' display has 3 columns:

1. Key
2. Message - the message information can be *note on*, *N/A* (not active) *note off*, or *control change*.
3. Data - the MIDI code in the data column can be changed.

The input and output controllers' display has only 2 columns:

1. Sys - indicating the playback device.
2. MIDI - the MIDI code assigned to the playback device.

The message for input/output controllers is **always** Control Change.

If control change is assigned to the input/output keys, care must be taken to assure that there is no duplication of the MIDI code.

Example: If input/output controller A/B is programmed as MIDI 20, do not program input/output key Hold A/B as control change, data 20.

The example below will use the input keys. The procedure is the same for all of the options.

Keypresses	**Results/Comments**
1. Press **F1 Input Keys**	Select the input keys.
2. use the arrow keys	Move the cursor to highlight the required key.
3. Press **F1 Enter**	You now have access to the selected entry.
4. Use the → key on the console to select the column.	
5. Press **F2 Toggle** or If you are editing the data column, enter a number on the numeric keypad.	Use this key to toggle to the required selection: *note on*, *note off*, *control channel change, N/A*.
6. Press **F1 Store**	The new data is stored.

MIDI Macro

This allows creating a macro using MIDI transmission input. The macro collects the MIDI codes received from a MIDI transmitting source.

Keypresses	**Results/Comments**
1. Press **F5 MIDI Macro**	This selection transports you to the macro menu.
2. Press **F1 Create Macro**	Select the Create Macro function. The system will prompt for a macro number
3. Transmit MIDI commands to console	This transmission should contain no more than 16 commands.
4. Press **F1 Store**	Store the macro. The macro appears in blue and is a collection of MIDI codes.

MIDI Sync

MIDI sync is an additional MIDI function that serves to synchronize 2 consoles, one console being the master and the other the slave.

The synchronization works via playback commands to the A/B crossfader.

The synchronization is carried out by a MIDI transmission for the keys **[MEMORY #] [TIME] [GOTO]** whenever a Go command occurs on the A/B crossfader; the # being the number of the incoming memory.

Go commands include:

- Pressing **[GO]**
- Pressing **[GOTO]**
- Manually moving the fader.

If the receiving console is not a Compulite console, the following keys on the receiving console must be programmed with the identical MIDI codes as in the MIDI menu of Sabre:

- **[MEMORY]**
- digits 0 - 9
- Decimal point (for numbers like 2.8, etc.)
- **[TIME]**
- **[GO]** (A/B)
- **[GOTO]** (A/B).

Enabling or disabling MIDI synch is found in the MIDI menu.

Enabling/disabling MIDI Sync

The MIDI sync function can be enabled or disabled at anytime. This is done in the MIDI menu.

Press **F3 MIDI sync on** to enable MIDI sync.

Press **F4 MIDI sync off** TO disable MIDI sync.

The MIDI synch status is displayed in the center at the top of the CRT 1.

Setting up the master console

Keypresses

1. Configure the system for MIDI as described above.
2. Go to the System Parameters menu.
3. Set a channel for *MIDI sync out*.

The MIDI sync function and the regular MIDI transmission can operate simultaneously. If in addition to MIDI synch you are also using MIDI I/O, a unique channel must be set for MIDI I/O.

Setting up the slave console

Keypresses

1. Configure the system for MIDI as described above.
2. Go to the System Parameters menu.
3. Set a channel for *MIDI I/O*.
4. If the receiving console is a Compulite console, enable the input keys mentioned above.

Standard MIDI Codes

MIDI code chart for decimal to hexadecimal equivalents

Decimal	Hex	Decimal	Hex	Decimal	Hex	Decimal	Hex
0	00	16	10	32	20	48	30
1	01	17	11	33	21	49	31
2	02	18	12	34	22	50	32
3	03	19	13	35	23	51	33
4	04	20	14	36	24	52	34
5	05	21	15	37	25	53	35
6	06	22	16	38	26	54	36
7	07	23	17	39	27	55	37
8	08	24	18	40	28	56	38
9	09	25	19	41	29	57	39
10	0A	26	1A	42	2A	58	3A
11	0B	27	1B	43	2B	59	3B
12	0C	28	1C	44	2C	60	3C
13	0D	29	1D	45	2D	61	3D
14	0E	30	1E	46	2E	62	3E
15	0F	31	1F	47	2F	63	3F
Decimal	**Hex**	**Decimal**	**Hex**	**Decimal**	**Hex**	**Decimal**	**Hex**
64	40	80	50	96	60	112	70
65	41	81	51	97	61	113	71
66	42	82	52	98	62	114	72
67	43	83	53	99	63	115	73
68	44	84	54	100	64	116	74
69	45	85	55	101	65	117	75
70	46	86	56	102	66	118	76
71	47	87	57	103	67	119	77
72	48	88	58	104	68	120	78
73	49	89	59	105	69	121	79
74	4A	90	5A	106	6A	122	7A
75	4B	91	5B	107	6B	123	7B
76	4C	92	5C	108	6C	124	7C
77	4D	93	5D	109	6D	125	7D
78	4E	94	5E	110	6E	126	7E
79	4F	95	5F	111	6F	127	7F

MIDI codes are organized according to the 12 octaves on the piano.

Note	Name	Note	Name	Note	Name	Note	Name
C-2	:00	C-1	:36	C-4	:72	C-7	:108
Db-2	:01	Db-1	:37	Db-4	:73	Db-7	:109
D-2	:02	D-1	:38	D-4	:74	D-7	:110
Eb-2	:03	Eb-1	:39	Eb-4	:75	Eb-7	:111
E-2	:04	E-1	:40	E-4	:76	E-7	:112
F-2	:05	F-1	:41	F-4	:77	F-7	:113
Gb-2	:06	Gb-1	:42	Gb-4	:78	Gb-7	:114
G-2	:07	G-1	:43	G-4	:79	G-7	:115
Ab-2	:08	Ab-1	:44	Ab-4	:80	Ab-7	:116
A-2	:09	A-1	:45	A-4	:81	A-7	:117
Bb-2	:10	Bb-1	:46	Bb-4	:82	Bb-7	:118
B-2	:11	B-1	:47	B-4	:83	B-7	:119
C-1	:12	C-2	:48	C-5	:84	C-8	:120
Db-1	:13	Db-2	:49	Db-5	:85	Db-8	:121
D-1	:14	D-2	:50	D-5	:86	D-8	:122
Eb-1	:15	Eb-2	:51	Eb-5	:87	Eb-8	:123
E-1	:16	E-2	:52	E-5	:88	E-8	:124
F-1	:17	F-2	:53	F-5	:89	F-8	:125
Gb-1	:18	Gb-2	:54	Gb-5	:80	Gb-8	:126
G-1	:19	G-2	:55	G-5	:91	G-8	:127
Ab-1	:20	Ab-2	:56	Ab-5	:92		
A-1	:21	A-2	:57	A-5	:93		
Bb-1	:22	Bb-2	:58	Bb-5	:94		
B-1	:23	B-2	:59	B-5	:95		
C-0	:24	C-3	:60	C-6	:96		
Db-0	:25	Db-3	:61	Db-6	:97		
D-0	:26	D-3	:62	D-6	:98		
Eb-0	:27	Eb-3	:63	Eb-6	:99		
E-0	:28	E-3	:64	E-6	:100		
F-0	:29	F-3	:65	F-6	:101		
Gb-0	:30	Gb-3	:66	Gb-6	:102		
G-0	:31	G-3	:67	G-6	:103		
Ab-0	:32	Ab-3	:68	Ab-6	:104		
A-0	:33	A-3	:69	A-6	:105		
Bb-0	:34	Bb-3	:70	Bb-6	:106		
B-0	:35	B-3	:71	B-6	:107		

CHAPTER 30
SMPTE

Overview

SMPTE time codes can be assigned to memories and Events.

Events with SMPTE assignments operate in response to the time code trigger. The trigger originates from an external SMPTE generator or the internal SMPTE clock.

Memories with SMPTE assignments operate when they are assigned to a playback device (A/B, C/D, or controllers). The trigger originates from an external SMPTE generator or the internal SMPTE clock.

When SMPTE is active the clock is displayed at the right of the command line above the console clock. The SMPTE clock digits are displayed in different colors and different colored fields according to the clock's status; the clock can be running, the clock can be accessed for resetting, the clock can be stopped.

There are three basic SMPTE functions.
1. SMPTE on - Playback
2. SMPTE off
3. Teach SMPTE – a convenient method for assigning time codes to Events and memories.

Configuring Sabre for SMPTE operation

NOVRAM bit O - SMPTE must be toggled to 1 (Yes) for Sabre to recognize SMPTE communication.

NOVRAM Bit P- SMPTE Interface- lets Sabre know whether an external SMPTE generator or Sabre's internal SMPTE clock is being used.
When toggled to 0 – External, the console recognizes an outboard SMPTE generator. In this case, DMX Input cannot be used.
When toggled to 1 –Internal, the console recognizes the internal SMPTE clock and does NOT recognize an external SMPTE converter. In this case, DMX Input can be used.

If bit P is toggled to 0 – External, you must disable DMX Input. To disable DMX Input, go to Special Numbers and enter 0 (zero) for DMX Input.

Keypresses	Results/Comments
1. Go to Service Tools.	
2. Press **F3 Config Sys**.	
3. Enter the password.	
4. Press **F4 Special Functions**	The Special Functions toggles are displayed.
5. Move cursor to O SMPTE.	
6. Press **F1 Toggle**	Bit O is toggled to Yes.
7. Move cursor to P – SMPTE Interface. Toggle to setting.	
8. Press **F6 Enter & Exit**	The main Config Sys menu is displayed.
9. Press **F6 Store Configuration** twice.	

Configuring for the number of frames

It is recommended to configure Sabre for the number of SMPTE frames per second. If you do not configure the system for the number of frames, Sabre defaults to 30 frames per second.

Keypresses	**Results/Comments**
1. Go to Service Tools.	
2. Press **F3 Config Sys**.	
3. Enter the password.	
4. Press **F5 Special Numbers**.	The Special Numbers are displayed.
5. Move the cursor to D - SMPTE frames per sec.	
6. Enter the number of the frames.	
7. Press **F6 Enter & Exit**	The main Config Sys menu is displayed.
8. Press **F6 Store Configuration**	The message *Press F6 to Store Changes* is displayed.
9. Press **F6 Store Configuration**	
10. Turn off Sabre and switch back on.	Sabre now boots up. After major changes in the system configuration it is recommended to restart the system.
11. Press **F1 Cold Start**	The system exits Service Tools and comes up in editor mode.

Using the Internal SMPTE Clock

The internal SMPTE clock is used in conjunction with the Teach function to assign SMPTE time codes and for playback.

When the bit controlling SMPTE (bit O in Service Tools/Config system/Special Functions) is toggled to Yes, the SMPTE clock is displayed above the system at the right of the command line.

To use the internal SMPTE clock to teach memories and Events time codes and for playback the SMPTE function must be turned on. If it is not turned on the system ignores the SMPTE time clock even though it is running.

When you turn on SMPTE and there are no upcoming SMPTE assignments the message *SMPTE Over* is displayed.

➢Tip

For operational ease make Macros for turning on SMPTE, turning off SMPTE, starting the clock, stopping the clock, and resetting the clock.

Color key for the SMPTE clock

Color	What it means
Red on a yellow field	Clock running
Yellow on a red field	
Gray on a yellow field	Clock is stopped

Turning on the SMPTE function

Keypresses	Results/Comments
1. Press **[SMPTE]**	
2. Press **[FULL]**	The system is now listening to the SMPTE generator. The message *SMPTE Over* is displayed.

Turning off the SMPTE function

When the SMPTE function is turned off the system ignores any SMPTE assignments even though the internal SMPTE clock is running.

Keypresses	Results/Comments
1. Press **[SMPTE]**	
2. Press **[ZERO]**	The system ignores SMPTE.

Starting the SMPTE clock

Keypresses	Results/Comments
1. Press **[SMPTE]**	
2. Press **[TIME]**	The clock is displayed at its last setting.
3. Press **[ENTER]**	The SMPTE clock is displayed in red on a yellow field. The clock starts running.

Stopping the SMPTE clock

Keypresses	Results/Comments
1. Press **[SMPTE]**	The clock is displayed in yellow on a red field.
2. Press **[WAIT]**	The clock stops. The clock is now displayed in gray on a yellow field.

Resetting the SMPTE clock to 0

Keypresses	Results/Comments
1. Press **[SMPTE]**	
2. Press **[TIME]**	If the clock is running it now appears on a red field.
3. Press **[0]**	
4. Press **[WAIT]**	The clock stops and is reset to 00:00:00:00.

Resetting and starting the clock

Keypresses	Results/Comments
1. Press **[SMPTE]**	
2. Press **[TIME]**	The SMPTE clock is displayed in the command line.
3. Press **[0]**	
4. Press **[ENTER]**	The clock starts running from 00:00:00:00. The clock is displayed in red.

Setting the SMPTE clock to a selected time

There are 3 methods to set the SMPTE clock for a time other than 0.

Keypresses	Results/Comments
1. Press **[SMPTE]**	
2. Press **[TIME]**	The SMPTE clock is displayed in the command line.
3. Enter the time on the keypad.	Enter the time in the following format, using 2 digits for each unit: **hour.minutes.seconds.frames**.
4. Press **[WAIT]**	The clock shows the selected time.

Setting the clock to a selected time and starting

Keypresses	Results/Comments
1. Press **[SMPTE]**	
2. Press **[TIME]**	The SMPTE clock is displayed in the command line.
3. Enter the time on the keypad.	Enter the time in the following format, using 2 digits for each unit: **hour.minutes.seconds.frames**
4. Press **[ENTER]**	The clock starts running from the selected time. The time is displayed in red.

Setting the clock using the A/B Rate wheel

You can use the A/B rate wheel to change the clock's setting.

The clock must be running to use the rate wheel.

Keypresses	Results/Comments
1. Press **[SMPTE]**	
2. Use the A/B Rate wheel to assign time.	The SMPTE clock is displayed in red. The wheel sensitivity is fine.
3. Press **[WAIT]** to stop the clock. Press **[RESET]** or **[CLEAR]** to continue running from new time setting.	

Or

Keypresses	Results/Comments
1. Press **[SMPTE]**	
2. Press and hold **[SHIFT]** and move the A/B Rate wheel.	The SMPTE clock is displayed in red. The wheel movement is coarse; very little wheel movement is needed to increment or decrement the time.
3. Press **[WAIT]** to stop the clock. Press **[RESET]** or **[CLEAR]** to continue running from new time setting.	

Assigning Time Codes Using Teach

The Teach function can be used to assign SMPTE time codes to memories and Events. The Teach function uses Sabre's internal SMPTE clock.

Each time the time code is stored to an Event or a memory the result is live on stage.

The Teach option is used only when the memory or Event has no previous SMPTE assignment. It is not allowed to overwrite a time assignment using Teach. To modify assignments use the manual assignment.

Assigning time codes to Events

When assigning time codes to Events *Teach E# N_ _* is displayed in the upper right of the monitor.

E# is the upcoming Event. When displayed in green the upcoming Event does not have a SMPTE assignment. The keypresses described below assign a time code to the Event. The Event number in red means that the Event has a time assignment larger than the present time on the SMPTE clock. In this case, the assignment can be overwritten.

N stands for Next, showing the next Event with a SMPTE assignment. In this case, the countdown to the SMPTE assignment that triggers the Next Event is displayed.

Keypresses	**Results/Comments**
1. Press **[SMPTE]**	
2. Press **[TEACH MACRO]**	
3. Press **[SMPTE]**	
4. Set the time on the clock and press **[ENTER]**	The SMPTE clock begins running. The clock is displayed on a yellow field. The upcoming Event number is displayed at the top of the screen.
5. Press **[EVENT]** to store the time code to an Event.	The message *Event # Stored* is displayed. When the time code is stored to an Event, the system automatically advances to the next Event number.

Assigning time codes to memories

Keypresses	Results/Comments
1. Assign memories or Q-Lists to the crossfaders or Q-Lists to the controllers.	
2. Press **[SMPTE]**	
3. Press **[TEACH MACRO]**	
4. Press **[SMPTE]**.	
5. If necessary set the time on the clock.	
6. Press **[ENTER]**	The SMPTE clock begins running. The clock is displayed on a yellow field above the system clock. The next memory number is displayed at the top of the screen.
7. Press **[GO]** or **[GO TO]** for A/B, C/D, or **[GO]**	The time code is stored to incoming memory. *Memory # Stored* is displayed.

Exiting the Teach function

Keypresses	Results/Comments
1. Press **[SMPTE]**	
2. Press **[TEACH MACRO]**	The Teach display at the top of the screen disappears.

Manually Assigning SMPTE Time

You can manually enter SMPTE time codes for memories and Events. A combination of numerical selections and **[•]** are used for time codes.

Time assignments greater than 59 are not accepted.

Units of time format

Format	Unit of Time
••#	Frames
• #	Seconds
#	Minutes
#••	Hours
•#•#	Seconds•Frames
#•#•	Hours•Minutes
#•#•#	Hours•Minutes •Seconds
#•#•#•#	Hours•Minutes •Seconds•Frames

Assigning SMPTE code to memories

You can assign time codes to single memories or a range of memories. In the examples below the time assignment is an absolute value.

When assigning a value to a range of memories Sabre takes into consideration memory fade times when calculating the SMPTE assignments.

Example 1: Assign an absolute value of 1 minute and 55 seconds to memory 10.

Keypresses	**Results/Comments**
1. Select memory 10.	
2. Press **[SMPTE]**	The current time assignment is displayed in the command line.
3. Press **[1] [•] [55]**	
4. Press **[STORE]**	The time code assignment is displayed under the memory number in the Memory List.

Example: Assign an absolute value of 4 seconds to memories 1 → 5. All the time-in assignments for memories in the selected range are 4 seconds. ALL memories in the range are assigned time codes.

When an absolute value is entered the first memory is assigned the time entered.

All subsequent memories are assigned times calculated from the first assignment plus the difference between each memory and the first memory.

Keypresses	**Results/Comments**
1. Select memories 1→ 5.	
2. Press **[SMPTE]**	The current time assignment is displayed in the command line.
3. Press **[•] [4]**	
4. Press **[STORE]**	Memory 1 is executed at 4 seconds. Memory 2 at 8 seconds. Memory 3 at 12 seconds. Memory 4 at 16 seconds. Memory 5 at 20 seconds.

Delay assignments are also taken into consideration. The table below shows an example of SMPTE code assignments when some of the memories have delay or wait times. 4 is assigned as an absolute value to the memory range.

Memory	**Time In**	**Delay**	**Wait In**	**SMPTE assignment**
1	4	---	---	00:00:04:00
2	4	10	---	00:00:18:00
3	4	---	---	00:00:22:00
4	4	---	16	00:00:26:00
5	4	---	---	00:00:46:00

Modifying assignments for memories

You have the option of modifying the SMPTE assignments with absolute or relative values.

The tables below show the keypresses and the results.

In all of the operations described below, only memories that already have SMPTE assignments are modified. SMPTE codes are not assigned to memories within the selected range that do not already have SMPTE assignments.

➢Tip

When modifying the SMPTE time assignments for memories it is convenient to have the Memory List displayed on one of the monitors.

Relative modification

Example 1: Modify the time codes for memories 1 – 5 by adding 40 seconds to the time assignments.

Keypresses	**Results/Comments**
1. Select the memory range - **[MEMORY 1 → 5]**	
2. Press **[SMPTE]**	The time assignment for the first memory in the range is displayed in the command line.
3. Press **[+]**	
4. Press **[•] [40]**	
5. Press **[STORE]**	

Example 2: Modify the time codes for memories 1 – 5 by adding 1 hour to the time codes for each memory.

Keypresses	**Results/Comments**
1. Select the memory range - **[MEMORY 1 → 5]**	
2. Press **[SMPTE]**	The time assignment for the first memory in the range is displayed in the command line.
3. Press **[+]**	
4. Press **[1] [•] [•]**	*1::* is displayed in the command line.
5. Press **[STORE]**	The SMPTE assignments are updated relatively.

The results of the examples above are illustrated in the following table.

Memory	**Time In**	**Original SMPTE assignment**	**Modified SMPTE assignment**	
			Example 1	Example 2
1	4	01:00:04.00	00:00:44.00	02:00:04.00
2	4	01:00:08.00	00:00:48.00	02:00:08.00
3	4	01:00:12.00	00:00:52.00	02:00:12.00
4	4	01:00:16.00	00:00:56.00	02:00:16.00
5	4	01:00:20.00	00:01:00.00	02:00:20.00

Example: Modify the time codes for memories 1 – 5 with a relative value of -4 seconds.

Keypresses	Results/Comments
1. Select the memory range - **[MEMORY 1 → 5]**	
2. Press **[SMPTE]**	The time assignment for the first memory in the range is displayed in the command line.
3. Press **[-]**	
4. Press **[•] [40]**	
5. Press **[STORE]**	The SMPTE assignments are updated relatively.

The result of the example above is illustrated in the following table.

Memory	Time In	Previous SMPTE assignment	Modified SMPTE assignment
1	4	01:00:04.00	00:59:24.00
2	4	01:00:08.00	00:59:28.00
3	4	01:00:12.00	00:59:32.00
4	4	01:00:16.00	00:59:36.00
5	4	01:00:20.00	00:59:40.00

Absolute modification

The first memory in the selection must have a time code assignment before using this function.

The selected time is assigned to the first memory in the range. All of the memories in the selected range that have SMPTE assignments are updated, calculated according to the assignment to the first memory.

Example: Change the absolute assignment to the first memory to 30 seconds. Memories with time code assignments are updated automatically. Memories without previous assignments are ignored.

Keypresses	Results/Comments
1. Select the memory range - **[MEMORY 1 → 5]**	
2. Press **[SMPTE]**	The time assignment for the first memory in the range is displayed in the command line.
3. Press **[@]**	
4. Press **[•] [30]**	
5. Press **[STORE]**	The SMPTE assignments for memories that already have SMPTE assignments are updated.

The result of the example above is illustrated in the following table.

Memory	Time In	Previous SMPTE assignment	modified SMPTE assignment
1	4	00:00:04.00	00:00:30.00
2	4	00:00:08.00	00:00:34.00
3	4		
4	4		
5	4	00:00:20.00	00:00:46.00

➢Note

In the preceding example, not all of the memories in the range have a SMPTE assignment. Note that only memories with a SMPTE assignment are modified.

Using an increasing delta

Example: Apply an increasing delta of 4 seconds.

Keypresses	Results/Comments
1. Select the memory range - **[MEMORY 1 → 5]**	
2. Press **[SMPTE]**	The time assignment for the first memory in the range is displayed in the command line.
3. Press **[+] [+]**	
4. Press **[•] [4]**	
5. Press **[STORE]**	The SMPTE assignments are updated.

The result of the example above is illustrated in the following table.

Memory	Time In	Original SMPTE assignment	Modified SMPTE assignment	Modified by
1	4	00:00:04.00	00:00:04.00	+0
2	4	00:00:08.00	00:00:12.00	+4
3	4	00:00:12.00	00:00:20.00	+8
4	4	00:00:16.00	00:00:28.00	+12
5	4	00:00:20.00	00:00:36.00	+16

Using a decreasing delta

Example: Apply a decreasing delta of 2 seconds.

Keypresses	Results/Comments
6. Select the memory range - **[MEMORY 1 → 5]**	
7. Press **[SMPTE]**	The time assignment for the first memory in the range is displayed in the command line.
8. Press **[-] [-]**	
9. Press **[•] [2]**	
10. Press **[STORE]**	The SMPTE assignments are updated.

The result of the example above is illustrated in the following table.

Memory	Time In	Original SMPTE assignment	Modified SMPTE assignment	Modified by
1	4	00:00:04.00	00:00:04.00	-0
2	4	00:00:08.00	00:00:06.00	-2
3	4	00:00:12.00	00:00:08.00	-4
4	4	00:00:16.00	00:00:10.00	-6
5	4	00:00:20.00	00:00:12.00	-8

Assigning SMPTE codes to Events

The procedures for assigning SMPTE time to Events are identical to that of memories. Use the sequences described above, substituting **[EVENT]** for **[MEMORY]**.

There is one exception. When assigning an absolute time, all of the Events receive the same time assignment. Example: Assign SMPTE time 1 hour and 35 minutes.

Keypresses	Results/Comments
1. Select Events 1→ 5.	
2. Press **[SMPTE]**	
3. Enter **[1] [•] [35] [•] [0]** on the keypad.	
4. Press **[STORE]**	The SMPTE time for Events 1 → 5 is 01:35:00:00.

Quick Reference for assignment & modification

Assign or Modify SMPTE code	**Keypresses**
For 1 memory or Event	**[MEMORY #] [SMPTE] [time value] [STORE]**
	[EVENT #] [SMPTE] [time value] [STORE]
Range assignment or modification	**[MEMORY] [# → #] [SMPTE] [time value] [STORE]**
	[EVENT] [# →#] [SMPTE] [time value] [STORE]
Relative modification	**[MEMORY] [# → #] [SMPTE] [+] [time value] [STORE]**
	[MEMORY] [# → #] [SMPTE] [-] [time value] [STORE]
	[EVENT] [# →#] [SMPTE] [+] [time value] [STORE]
	[EVENT] [# →#] [SMPTE] [-] [time value] [STORE]
Absolute modification	**[MEMORY] [# → #] [SMPTE] [@] [time value] [STORE]**
	[EVENT] [# →#] [SMPTE] [@] [time value] [STORE]
Modify with increasing delta	**[MEMORY] [# → #] [SMPTE] [+][+] [time value] [STORE]**
	[EVENT] [# →#] [SMPTE] [+] [+ [time value] [STORE]
Modify with decreasing delta	**[MEMORY] [# → #] [SMPTE] [-][-] [time value] [STORE]**
	[EVENT] [# →#] [SMPTE] [-] [-] [time value] [STORE]

Erasing SMPTE assignments

Keypresses	**Results/Comments**
1. Select memories or Events.	One or a range of memories and Events can be selected.
2. Press **[SMPTE]**	
3. Press **[ERASE]**	The time code assignments are erased.

Playing back Events and memories

The playback begins from the first Event or memory with a time code assignment greater than the SMPTE clock time.

When you enable the SMPTE function and start the clock at 00:00:00:00, the first Event or memory with a time assignment is triggered at the appropriate time.

If you enable the SMPTE function and start the clock from, for example, 02:30:00:00 Events and memories with assignments prior to 2 and a half-hours are ignored.

The upcoming SMPTE event is displayed in red and the following Event is displayed in yellow.

The countdown clock shows how much time will elapse until the upcoming Event is triggered. When the countdown clock is flagged as *Go*, the clock is showing the count down to the next Event. A *GT* flag on the countdown clock means that there is a fade in progress on A/B.

Enabling the console for playback

Keypresses	Results/Comments
1. Press **[SMPTE]**	
2. Press **[FULL]**	The system is now listening to the SMPTE generator. The message *SMPTE Over* is displayed.
3. Press **[SMPTE]**	
4. Press **[TIME]**	The SMPTE clock is displayed. The clock is at its last setting.
5. If necessary reset the clock.	
6. Press **[ENTER]**	The SMPTE clock is displayed in red on a yellow field. The clock starts running.

➢Note

If you are using an external SMPTE generator execute steps 1 and 2 only. The SMPTE counter (clock) is displayed as soon you complete step 2, if the SMPTE generator is already running. If the SMPTE generator is not active, turn it on after step 2.

CHAPTER 31
DMX INPUT

This chapter includes:

Overview

A DMX source, such as a second lighting computer or a manual desk can be connected to the Sabre.

DMX input controls conventional channels, spots, operates Macros, and submasters playback devices.

DMX input for channels and spots is integrated into the main console output. This is a useful tool when plotting.

Two Macros with different execution thresholds can be assigned to each DMX input channel.

Configuring the System for DMX Input

To use DMX input you must configure the system to recognize DMX.

You are required to enter the number of DMX input channels to Special Numbers, E. The number is the total DMX input divided by 4. Example: if the DMX input source is a 40 fader manual board, enter the number 10 .DMX input controls channels when the number entered for special Number E is less than 129. DMX input controls DMX protocol moving devices when 129 is entered. This is applicable to moving lights from DMX connector 1 only.

Example: Assume that the DMX input is being used to control moving lights that employ 12 DMX channels each. DMX input channel 1 controls channel 1 of spot 1, DMX input channel 2 controls operate channels 2 of spot 1, and so on. DMX input channel 13 controls channel 1 of spot 2, DMX input channel 14 controls channel 2 of spot 2, and so on.

Keypresses	Results/Comments
1. Go to Service Tools.	
2. Press **F3 Config Sys**.	
3. Enter the password.	
4. Press **F5 Special Numbers**.	The Special Numbers are displayed.
5. Move the cursor to E -DMX Input.	
6. Enter the number of the DMX input.	Consult the explanation above.
7. Press **F6 Enter & Exit**	The main Config Sys menu is displayed.
8. Turn off Sabre and switch back on.	Sabre now boots up. After major changes in the system configuration it is recommended to restart the system.
9. Press **F1 Cold Start**	The system exits Service Tools and comes up in editor mode.

Patching DMX Input

There is a special Input Patch Table located in the Channel Patch menu. The extent of the patch table depends on the DMX input configuration.

Each row of the Input Patch Table contains 4 lines.

CHAN Sabre's DMX channels.

INPUT The input channel controlling the DMX channel.

MACRO If there are Macros assigned to the DMX input channels, the Macro number appears.

% The execution threshold for Macros.

Color key for input assignments:

What	Color
DMX input channel patch assignments	red on a white field
Macro assignments	Blue or yellow, depending on execution assignments.
Macro operation on the down fade	Yellow denotes the intensity trigger level. The blue asterisk signals a second Macro assignment.
Macro operation on the up fade	Blue denotes the intensity trigger level. The yellow asterisk signals a second Macro assignment.

There is a special display for DMX input channels that submaster playback devices located on the lower area of the screen. 27 DMX input channels are used to Submaster the playback devices.

Patching input channels

DMX input channels are assigned for channel control.

Example: DMX input channel 10 is patched to control channels 1 through 10, and 15.

Keypresses	Results/comments
1. Press **f1 assign input**	Select the assign function.
2. Select **10**	Enter the input number in answer to the menu prompt. More than one or a range of input numbers may be assigned.
3. Press **f2 to channel**	The prompt ***to channel #:*** appears.
4. Select channel **1**	Enter the number in response to the prompt.
5. Press **f1 thru channel**	Allows range selection.
6. Select channel **10**	Enter the last channel of the range.
7. Press **F2 & Channel**	Include another channel in the input patching.
8. Select channel **15**	Select a channel number in response to the prompt.
9. Press **F3 Store**	Store the input patch assignments. The input assignment appears in red on a white field below the channel number.

Assigning DMX input as playback submasters

DMX input channels can be used as playback device submasters.

The first 27 channels are delegated to control playback devices (see chart).

F5 Subs Toggle enables or disables the submaster function.

CHAN	PLAYBACK DEVICE	CHAN	PLAYBACK DEVICE	CHAN	PLAYBACK DEVICE
1	submaster 1	10	controller 8	19	controller 17
2	submaster 2	11	controller 9	20	controller 18
3	controller 1	12	controller 10	21	controller 19
4	controller 2	13	controller 11	22	controller 20
5	controller 3	14	controller 12	23	controller 21
6	controller 4	15	controller 13	24	controller 22
7	controller 5	16	controller 14	25	controller 23
8	controller 6	17	controller 15	26	controller 24
9	controller 7	18	controller 16	27	Q keys submaster

Clearing input patch assignments

You have the option of clearing the Inputs or the system Channels. The example below shows how to clear Input assignments.

Keypresses	Results/Comments
1. Press **F2 Clear Input**	
2. Press **F1 Inputs**	
3. Enter a number in answer to the prompt.	More than 1 input channel may be selected at this time.
4. Press **F2 Store**	The assignment is cleared.

Returning the default patch

This option returns the default input patch to all patches or selected channels.

Keypresses	Results/Comments
1. Press **F3 Default (1 to1)**	
2. Press **F1 All Patches**	Sabre asks for a confirmation command.
3. Press **F1 Yes**	All assignments are returned to default.

Examining DMX input assignments

Isolate selected inputs for examination.

Keypresses	Results/Comments
1. Press **F4 Exam**	Sabre prompts: *Exam assignment of input #:*
2. Select the input number on the numeric keypad.	
3. Press **F1 Enter**	The patch assignments for the selected input channel are displayed.
4. To continue press **[+]** pt **[—]** or **F1 Previous** and **F2 NEXT**	

Assigning Macros to DMX input

When using DMX input, 1 or 2 Macros can be assigned to an input controller.

When 1 Macro is assigned, raising the intensity level of the input channel operates the assigned Macro. The default execution threshold is 50%.

When 2 Macros are assigned to a single input channel, an asterisk (*) appears next to the % number on the input patch table. Each Macro can have a unique execution threshold.

One Macro operates on the upfade and is displayed in blue. The second Macro operates on the downfade and is displayed in yellow.

Toggle the display between the ascending and descending assignments using **[+]** and **[—]**.

Keypresses	**Results/Comments**
1. Go to the Macro menu.	
2. Press **F6 ASSIGN INPUT**	The input patch table is displayed.
3. Select a Macro number.	In answer to the prompt, enter the Macro number for assignment.
4. Select an input channel.	Enter the input channel number, in answer to the prompt.
5. Press **F4 AT LEVEL %**	The default level assignment is 50%. If you are assigning 2 Macros to the same input channel it, is wise to assign them at different intensities for better control.
6. Press **F1 STORE UP** or **F2 STORE DOWN**	This selection determines whether the assigned Macro operates on the up fade or the down fade of the input channel.

CHAPTER 32
ETHERNET

This chapter includes:

Ethernet

Sabre is equipped with standard on-board Ethernet interfaces.

The console generates up to 6 DMX strings and is capable of transmitting the data on standard DMX, as well as on Ethernet. The console accepts up to 1 DMX input string in standard DMX.

Sabre fully supports all Compulite Ethernet related peripheral equipment, as well as remote file server access.

The Ethernet peripheral equipment includes:

VideoLINK The VideoLINK is a workstation with a remote VGA display and text keyboard. You can view Exams independent of the main console, attach text labels, or master the main console using the local text keyboard.

Up to 4 VideoLINK peripherals can be logged on to Sabre.

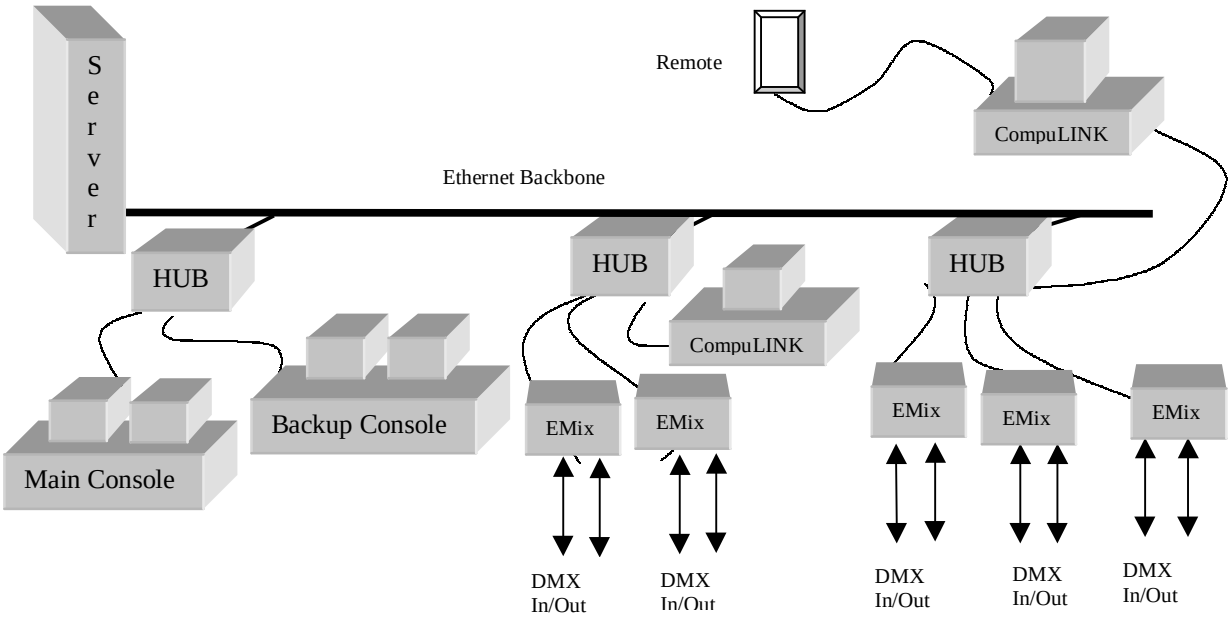
CompuLINK The CompuLINK workstation supports all the VideoLINK functions. In addition, CompuLINK has connectors for DMX input and output, MIDI, SMPTE, Remote bus, Panel bus, and a floppy disk drive.

Up to 4 CompuLINK peripherals can be logged on to Sabre.

A Remote Control Unit, Macro Extension Keyboard, or Submaster Wing can be remotely connected to the console via CompuLINK. When CompuLINK is logged on to the console, the remote bus peripherals behave as if they are connected directly to the console.

E-Mix node The E-Mix node is an Ethernet/DMX (CMX) router.

A Typical Ethernet Configuration



Network Settings

Menu 26 Network Settings is used to:

- Map network drives to a Server.
- Disable output from the console
- Assign ID numbers when the console is connected to an Ethernet Network.
- Define virtual connectors associated with the console.

The System Name and the console's IP address are displayed at the top of the menu. These 2 items can be changed in Service Tools/Config System/Communication Params only.

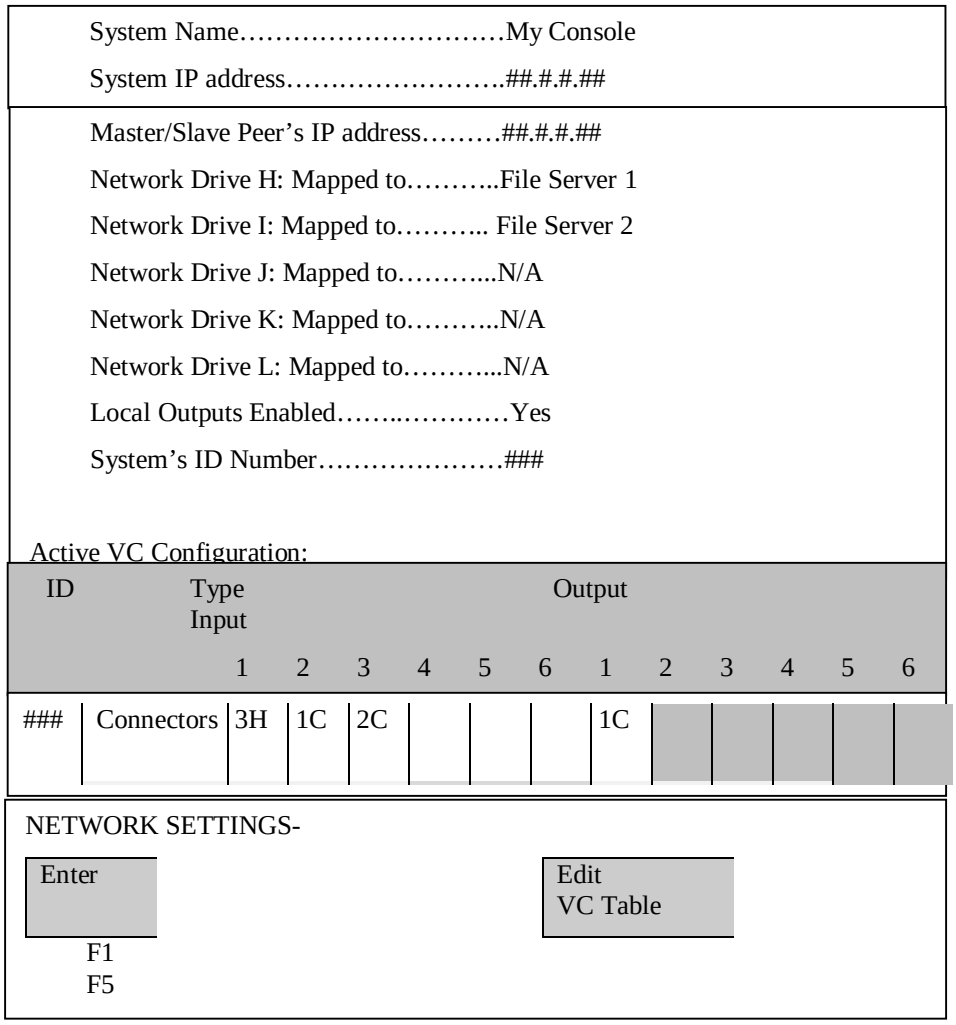


Figure 1 Network Settings menu

Mapping the Network Drives

The lighting console can be part of a network containing one or more WIN95/NT File Servers.

Example: The console can request loading show files stored on the File Server. Show files from the console can be stored on the File Server. The console can be mapped to any or all of the PCs that serve the network.

The Compulite File Server Application program must be open (on the Server) to map successfully. If the application is not open the message *Connection Failed* is displayed.

After mapping, you can change the default drive to one of the mapped drives. You can then load and record show files or device files to that drive. This configuration can be used for file sharing among several consoles.

Keypresses	Results/Comments
1. Go to menu 26.	
2. Use the arrow keys to highlight a drive.	
3. Enter the IP address	
4. Press **F1 Map It**	The message *Trying to Establish Connection* is displayed. When the connection is successful the Server name is displayed.

Disabling/Enabling local output

You can disable and reinstate the output from the console.

Disable local output from the console's connectors if you are working Ethernet only.

Keypresses	Results/Comments
1. Go to menu 26.	
2. Use the arrow keys to place the cursor on *Local Outputs Enabled*.	
3. Press F1 to toggle the assignment.	When the local output connectors are disabled *No* is displayed. When the local output connectors are enabled *Yes* is displayed.

Assigning an ID number

The ID number is referenced by the console and serves as the index number in the system wide Connector Patch Table.

ID numbers are burned to non-volatile memory.

Keypresses	**Results/Comments**
1. Go to menu 26.	
2. Use the arrow keys to place the cursor on the System ID number.	The console prompts for a number.
3. Enter the ID number.	The range is 0 –255.
4. Press **F1 Store**	The message *Burning New System ID*.

Virtual Connector Editing

When the System ID is set to 0, you can define the virtual connectors associated with the console.

The Virtual Connector Table is divided into 2 parts:

Slots ⇒ VC – Define the Virtual Connectors on which the console transmits its output on the Ethernet.

VC ⇒ Slots – Define the Virtual Connectors received as DMX input from the Ethernet.

Keypresses	**Results/Comments**
1. Go to menu 26.	
2. Press **F5 Edit VC Table**	The VC Table is displayed.
3. Use the arrow keys to move the cursor.	
4. Assign the Communication type for each entry using the F Keys. You can also clear the assignment by pressing **F5 Clear**	
5. When the VC editing is complete press **F1 OK**	The console now operates according to the modified VC Table.

Assigning IP addresses

In an Ethernet environment, based on the TCP/IP protocol, every system on the network must be assigned a unique IP address. IP addresses are built upon a 2 level hierarchy: <netid> and <hostid>. The <netid> is the number of the network and the <hostid> is the number of system connection in that network. In this context 'system' refers to consoles and Ethernet units in the network. In any given network all hosts (systems) share the same <netid>. The <hostid> must be unique for each system. Systems communicate on the network, using the TCP/IP protocol, by sending digital messages to recipient systems by specifying the receiving system's IP address.

When planning the assignment of IP addresses to Compulite peripheral equipment in a theatrical environment involving Ethernet-distributed DMX, remote video, remote file serving, full hardware tracking backup, remote console operation, Networked CAD etc., you should into consideration the following:

1. Does the theatre environment have an existing TCP/IP network, to which these peripherals are to be added?

   If such an environment exists, Compulite peripherals should be assigned IP address containing the existing <netid> and allocated unique <hostid> numbers.

2. Is the planned TCP/IP network a Compulite only network? In other words, will it support only Compulite equipment?

   In this case, any IP address can be used, so long as all the equipment shares the same <netid>. It is recommended to select from the class C IP address range, as this is most appropriate for a theatrical environment. See next paragraph for a short description of the different IP address classes.

3. Does the theatre environment contain an Ethernet network, which is **not** TCP/IP based?

   This case is actually similar to (2). The TCP/IP protocol can coexist on the same Ethernet cable with other protocols, such as Novel IPX ODI, IPX/SPX, NetBEUI etc. Again, if this is the case any IP address range can be selected.

4. If the theatre has, or is planning to install, a direct feed to the Internet, a <netid> must be allocated to the theatre by the INTERNIC association, which is the worldwide Internet addressing authority.

   In this case the Compulite peripherals should be assigned IP addresses in this range, only if it is desired to make them part of the general theatre network, which is on the Internet. If it is preferred to isolate the Compulite peripherals they must either comprise a completely separate network or be connected to the general theatrical net via a routing hub.

The IP address is a 32 bit number, and is written as 4 decimal values separated by dots. For example: 192.16.110.45

Each decimal value is in the range 0 to 255, although not all combinations are allowed. Generally, keep away from all 0's and all 255's for <netid> or <hostid>.

The IP address range is subdivided into 4 classes; class A, B, C and D. The subdivision is a bit complex, but the difference between them is the relative range of the <netid> and <hostid>.

In a class A IP address each <netid> can contain roughly 16 million different <hostid>'s, but there are only 126 possible <netid>'s. On the other hand a class C network can accommodate up to 254 different <hostid>'s but roughly 2 million different <netid>'s exist.

A Class C IP address:

ddd . ddd . ddd .	ddd
⟵ netid ⟶	← hostid>

Example: A theatrical network contains
2 Sabre Consoles
10 E-MIX units for Ethernet distributed DMX
2 CompuLINK units for remote video and remote control
A WIN95 File server PC

We select a class C network address, where <netid> = 198.16.114

Hence we number our systems in an ascending order, leaving gaps for future expansion:

Sabre Console 1	198.16.114.1
Sabre Console 2	198.16.114.2
10 E-MIX units	198.16.114.10 → 198.16.114.19
2 CompuLINK units	198.16.114.20, 198.16.114.21
A WIN95 File server PC	198.16.114.30

What Are Virtual Connectors?

Most theatrical lighting desks relay control information to peripherals, such as dimmer racks, scrollers, and end equipment using the DMX512 protocol. Ethernet technology, which has been successfully implemented and used for local-area and wide-area communications for quite a while, has only recently started to infiltrate the lighting control industry, It has since been considered as a replacement for DMX, in the desk to lighting-peripheral communication environment.

Existing lighting control desks contain several output connectors each transmitting control data using the DMX protocol. The idea is to replace these connectors with a single Ethernet hookup, but to continue sending data packaged and organized as DMX transmissions on the Ethernet. To fulfill this aim we use Virtual Connectors.

A Virtual Connector is a canal that transmits DMX control data, throughout the lighting network, on Ethernet. The DMX control data is translated to Ethernet protocol and on reaching its destination is transmuted back to DMX and physically transmitted to the end equipment. All Virtual Connectors share the same physical cabling.

In order to understand the concept of Virtual Connectors, it is necessary to understand how the console and the Ethernet network distribute the output generated by the console.

The information generated by the lighting console is output in DMX512 protocol and transmitted through the DMX connectors located on the back panel of the board. Each connector on the console is connected to dimmer racks, scrollers, or moving lights by a cable. The Channel Patch and the Mix Output menu determine how the output is organized on the physical connectors.

In an Ethernet environment, the lighting console still generates its data in DMX512 protocol and the Channel Patch and the Mix Output menu still determine how the output is organized. The generated output, however, can be routed via ‘slots’ to the Ethernet with DMX data encapsulated in Ethernet protocol or to the physical DMX connectors.

Slots are an internal mechanism analogous to the physical connectors where the number of slots is equal to the number of connectors. The default assignment of slots and physical

connectors is 1 to 1. If you attach an output cable to connector 1, you find that the DMX information output of connector 1 and slot 1 are identical. The output from slots can be further organized into Virtual Connectors in the Ethernet domain which allows transmitting data to more than 1 receiver, whereas the output from physical connectors could be transmitted to only 1 receiver such as dimmer racks, daisy chained moving lights, or splitter boxes.

The data generated by the lighting console and distributed over the Ethernet is received and retransmitted by a peripheral device that routes DMX and Ethernet. This device can be another lighting console, an E-Mix box, or CompuLINK. The E-Mix, for instance, receives data from the Virtual Connectors on the network and routes the data to the end equipment in DMX protocol.

In principle, the VCs can transmit protocols other than DMX512, such as CMX bi-directional, MIDI, High End protocol, and SMPTE.

The numbering of Virtual Connectors is not dependent on the number of existing physical connectors, so unique information can be sent to many peripherals. The Virtual Connector space is global to the network.

For further information about Ethernet, consult the documentation supplied with the Ethernet peripherals: VideoLINK, CompuLINK, and E-Mix.

APPENDIX A
SERVICE TOOLS

This chapter includes:

Accessing Service Tools

Service Tools is a special part of the Sabre where you configure the system, format disks, carry out hardware tests, and upgrade Sabre's software.

The System Configuration function appears in Chapter 26 - System Configuration.

1. Turn off the power.
2. Press and hold down **[CE] [CLEAR]**
3. Turn the power back on.
4. After a few seconds, release the keys. After running some self-tests, the Service Tools main menu is displayed. The information on the upper part of the screen shows the different sections of the program and EPROM. The lower area of the screen shows the current F key functions.

Main Menu

F1 Cold Start	Clears the system of all show memory data. The system should be 'cold started' occasionally.
F2 Warm Start	Retains all the current memories.
F3 Config. System	Access the different system definition options. See Chapter 26 - System Configuration
F4 Diagnostic	Access various diagnostic functions that aid in isolating hardware and keyboard malfunctions.
F5 Software Upgrade	Used to replace software versions.
F6 Disk Operations	Tools for diskette formatting and software upgrades. Record and Load system configuration. Boot floppy, boots the system to DOS.
0 Print Configuration	Print the entire system configuration, including current software version, current hardware configuration, system configuration (number of spots, channels, etc.), NOVRAM set up, etc. If this print is included in the file you keep on the show, there will be no guessing as to which system configuration was used.

Diagnostics

The diagnostic function (**F4**) provides 3 tests for hardware, each for a separate part of the system.

1. **F3 CRT's & PANEL** - This tests the panel by flashing all the LEDs on keys, checks the LED displays, and shows a color chart on CRT 1 and all the colors on CRT 2.
2. **F4 KEYBOARD TEST -** displays a map of all the wheels, controllers, the trackballs, and the joystick, which are tested by moving them. The lower right corner of the display has a small window for checking the keystrokes of the main console keys, Submaster Wing, Macro Wing, remote control, and the alphanumeric keyboard.

3. **F5 MEMORY TEST provides** two different memory tests. Pattern (**F1**), which will check the memory while retaining all the current show data and Warm (**F2**), which loses all the current show data.

Upgrading Software

Please read this thoroughly before attempting to upgrade the software.

There are two software Upgrade functions. **F5 Software Upgrade** is used when upgrading the Image files (imf) and Text files (tim). Service Tool software and OSi upgrades are carried out in the Disk Operations (**F6**) option.

Using the Software Upgrade option

This is option **F5 Software Upgrade**.

DO NOT attempt to upgrade the Service Tools software here. **Upgrades for Service Tools are executed under F6 Disk Operations only.**

You can abort the upgrade at any point by pressing **[MENU]**.

Keypresses	**Results/Comments**
1. Press **F5 Software Upgrade**	Select the software upgrade function. The system loads the present software version from the flash EPROM. The system generates the message: *Old software has been loaded from flash. Please insert EMPTY formatted disk*.
2. Insert empty formatted disk.	
3. Press **F1 Continue**	The old software will be written to the disk you have just inserted. When the old software has finished copying to disk, the system prompts: *Please insert the NEW software disk*.
4. Insert the diskette containing the new software	
5. Press **F1 Continue**	The new software is loaded. When the load is complete, the system will prompt: *Do you really want to program the flash?*
6. Press **F1 Continue**	Now the old software is erased from the flash. The new s/w is flashed and the system verifies that the procedure was successful. When the writing of the new software to the flash is complete, the system generates the message: *Press any key*, which returns you to the main Service Tools menu.
7. Press any key.	The first page of Service Tools is now displayed.
8. Press **F1 Cold Start**	**It is imperative to cold start the system after flashing new software.**

Upgrading software under Disk Operations

Upgrade Service Tools and OSi files here.

You can also upgrade the image and time files here, however it is not recommended. Use the Software Upgrade option available on the first page of Service Tools for upgrading image and text files.

Keypresses	Results/Comments
1. Go to Service Tools	
2. Press **F6 Disk Operations**	
3. Insert the disk containing the new software	
4. Press **F2 Load Image**	The system reads the diskette and displays the files on the disk. Enter a number on the numeric keypad to select/deselect files.
5. Select the OSi file.	
6. Press **F1 Load Files**	The OSi is loaded.
7. Press **F6 Program Flash**	The old software is erased from the flash and the new software is written to the flash. When the writing of the new software to the flash is complete, the system generates the message: *Press Any Key*.
8. Select SBRD**.imf.	The file is loaded.
9. Press **F6 Program Flash**	The old software is erased from the flash and the new software is written to the flash. When the writing of the new software to the flash is complete, the system generates the message: *Press Any Key*.
10. Press F1 Cold Start.	The message: *You are in Kickstart Menu* is displayed.
11. Press **F6 Disk Operations**	
12. Press **F2 Load Image**	The system reads the diskette.
13. Select DRSA**.imf	
14. Press **F1 Load Files**	The Service Tools file is loaded.
15. Press **F6 Program Flash**	
16. Press **F1 Load Files**	The OSi is loaded.
17. Select SBRD**.tim	
18. Press **F6 Program Flash**	
19. Turn the power off.	
20. Turn the power on.	
21. Press **F1 Cold Start**	**It is imperative to cold start after flashing new software.**

Disk Operations

The functions found under Disk Operations are:
Formatting Disks
Upgrading Software
Recording Configuration files to floppy diskettes or to the Hard Disk
Loading Configuration files from floppy diskettes or the Hard Disk
Recording Image files to the Hard Disk.
Loading Image files (upgrading software) from the Hard Disk.

The Filer provides disk management for the Hard Disk. Use Filer to select directories.

To boot up the console in DOS, press Alt B on the alphanumeric keyboard.

Formatting diskettes

Keypresses	Results/Comments
1. Press **F1 Format Disk**	Reads and displays the files recorded on the disk.
2. Press **F3 Format 1.44 Mb.** or **F4 Quick Format**	Use this option is formatting a new 1.44 m. diskette. Use this option to format a diskette that has already been formatted. Reformatting a diskette will erase all the information previously recorded.

Filer

Filer, in Disk Operations, provides access to the Hard Disk.

Filer allows you to:
1. Load and Record image files from and to the Hard Disk.
2. Move image files between the Floppy disk and the Hard Disk.
3. Load and Record configuration files (*.cfg and *.nov) from and to the Hard Disk.
4. Upgrade software using the hard Disk.

Filer displays all *.imf, *.tim, *.cfg, and *.nov files and subdirectories in the current directory. The working directory path is displayed in the upper left corner. The system defaults to drive C.

Navigating in the Filer

Use the arrow keys on the console panel or the alphanumeric keyboard to navigate the Filer display.

↑ and ↓ moves among files and directories.

→ or Page **Up** goes to the next page.

← or Page **Down** goes to the previous page.

[SHIFT] F6 Change Drv toggles between the Floppy Drive and the hard Drive.

F2 Sel/Desel selects or deselects the files subdirectories, and directories.

➢Note
Before entering Filer you should, if necessary, change drives.

Recording the system configuration

This function records the system configuration which includes the number of channels, scrollers, dimmers, amount and type of moving devices, as well as the special function and special number data.

It is important to record the system configuration to eliminate guesswork when reconstructing a show. Each configuration recording is given a file name and text. Load the configuration for your show if the current system configuration differs from the system configuration on which the show data was recorded.

Configuration files are accessible only in Service Tools and do not appear when examine the diskette in the Load menu.

Recording to a floppy diskette

Keypresses	Results/Comments
1. Press **F4 Record Config**	The system prompts you to enter a file name. Enter a file name (number) on the numeric keypad
2. Press **F4 Record S.T. File**	A text window opens. You may enter a textual description for the configuration file on the alphanumeric keyboard.
3. Press **F1 Enter**	Records file to the diskette.

Recording to the hard disk

To record a Config to the main directory on drive C, use the usual procedure: Service Tools/Disk Oper/Load or Record Config.

Configuration files that are automatically saved in the show file have the extension *.nov.

Configuration files saved in Service Tools in the Disk Operations menu have the extension *.cfg.

Keypresses	Results/Comments
1. Go to Service Tools.	
2. Press **F6 Disk Operations**	
3. Press **F6 Filer**	
4. Select a directory and press **F2 Enter Dir**.	The files in the directory are displayed.
5. Press **[RESET] – Exit**	
6. Press **F6 Disk Operations**	
7. Press **F4 Record Config**	
8. Enter the file name (3 digits) at the prompt.	
9. Press **F4 Record S.T. Config**	The system prompts for a text label.
10. Optional - Enter text	
11. Press **F1 Enter**	The new Config file is displayed in the file lost of the current directory.

Loading the system configuration

When show data is recorded to a diskette, configuration files are automatically recorded. The config files have the same play number and text name as the show data. The configuration files are available in the Disk Operations section of Service Tools. They are the files libeled *sys*.

Config files recorded in Service Tools are labeled *S.T*

Loading config files from the floppy

Keypresses	Results/Comments
1. Press **F5 Load Config**	
2. Enter the file number on the numeric keypad or use **F2** and **F3** to select the file or select file with the cursor.	If you have typed in a file number and there are two files with the same number, but a different identifier (SYS and *ST*) you must make a further selection.
3. Press **F5 Load S.T. Config**	When the load is complete the display returns to the system configuration screen and beeps if the configuration has been changed. The prompt, *Press F6 To Store Changes !!!!* is displayed.
4. Press **F6 Store Configuration**	Store the configuration that you have just loaded. This is not always necessary. The system prompts you to store configuration if it is needed.

Loading config files from the hard disk

Keypresses	Results/Comments
1. Go to Service Tools.	
2. Press **F6 Disk Operations**	
3. Press **F6 Filer**	
4. Select a directory and press **F2 Enter Dir**.	
5. Press **[RESET] – Exit**	The main Disk Operations menu is displayed.
6. Press **F5 Load Config**	The files in the selected directory are displayed.
7. Enter the file name (3 digits) at the prompt.	
8. Press **F5 Load File**	

Recording image files to the Hard Disk

Keypresses	Results/Comments
1. Insert the floppy disk with the image file to the disk drive.	
2. Go to Service Tools.	
3. Press **F6 Disk Operations**	The system reads the files on drive A.
4. If necessary, change drives.	
5. Press **F2 Load Imf**	
6. Press **F1 Load Files**	
7. Press **F1 Filer**	
8. Change to drive C:\	The directories on C are displayed.
9. Select a directory and press **F2 Enter Dir**	
10. Press **[RESET] – Exit**	
11. Press **F4 Write New Imf**	When complete the file is displayed in the selected directory.

Loading image files from the Hard Disk

Keypresses	Results/Comments
1. Go to Service Tools.	
2. Press **F6 Disk Operations**	
3. If necessary change drives to drive C:\	
4. Press **F2 Load Imf**	The Hard Disk files are displayed.
5. Select a directory and press **F2 Select**.	
6. Press **F1 Load Files**	
7. Press **F6 Program Flash**	

Back Door to Service Tools

There is a "back door" exit to Service Tools, via the System Parameters menu.

Keypresses	**Results/Comments**
1. Go to the System Parameters menu.	
2. Press **F5 Exit to S. Tools**	A warning message is displayed, reminding you save your current information. Any change in the system configuration in Service Tools necessitates "cold starting" the system, therefore it is prudent to record any show data contained in the memory.
3. Press **F1 Exit to Service Tools**	You are now in Service Tools
4. Use any of the functions in Service Tools and return to the system either via warm start, if no configuration changes have been made, or via cold start, if configuration changes have been made.	

APPENDIX B
CONSOLE KEY INDEX

This appendix contains a short description of the keys and other console features on Sabre.

The appendix is arranged alphabetically.

Key	What it does
[→]	Functions as a "through" key for range selections. There are two identical keys on the panel; one located in the editor section and, for convenience, one located near the Numeric Soft Keys.
[↔]	Reverse the direction of the sequence running on the C/D faders.
[+]	Increments selected channel and/or spots, frames, memory, or library by one. Advances to the next selection in Exam mode.
[+STORE]	Store the group in the editor as a memory, incrementing the previously stored memory number by a predetermined increment. The increment is adjustable in the System Parameters menu.
[—]	Decrements selected channel, spot, frame, memory, or library by one. Goes to the previous selection in Exam mode.
[=]	Put system in memory record mode. (If the system is defined as USA (set NOVRAM bit I to 1) it is unnecessary to use this key for memory recording.) Used when renaming or exchanging memories.
[•]	Use for time assignments, memory numbers, and show file numbers that are not whole numbers. View the system status. When the editor is in idle press this key to view the status of outboard devices such as remote control, Submaster Wing, Macro Extension Keyboard.
[@]	Set the numeric keypad for intensity or parameter value assignment.
[1]	An additional wheel bank for custom configuration. Parameters are assigned to wheel banks in the Mix Output menu/Define device option.
[2]	An additional wheel bank for custom configuration. Parameters are assigned to wheel banks in the Mix Output menu/Define device option.
[51 – 100]	Toggle the page of the Numeric Soft Keys. Use with **[EXAM]** to display NSK status and contents.
[A]	Assignment key for crossfader A. Assign memories, loops, or groups of spots/channels. Free assignment on A.
[ALL]	Enters all parameters of the selected spot/s to the editor.

Key	What it does
[ALL IF DIM]	When active (LED on) all parameters of the selected spots are included when storing memories if the dimmer is on. When inactive (LED off) only the selected parameters will be recorded. The default (on or off) for this key is determined in the System Parameters menu.
[ALL OFF]	Blackout the output from all controllers. Access this key with **[SHIFT]**
[ALPHA]	In Alpha mode the Numeric Soft Keys simulate a text keyboard.
[ASSIGN]	Assign memories, chasers, Effects, groups, and spot parameters, to controllers. Store Libraries, Snaps, Groups, Palettes, Effect Palettes, and Display Macros using the Numeric Soft Keys.
[ASSIGN J.S.]	Assign pan and tilt control to Joystick control.
[AUTO ASSIGN]	When active (LED on) allows operation of Events assigned to memories. When this key is disabled (LED off), Event assignments are ignored.
[B]	Assignment key for crossfader B. Assign memories, loops, or groups of spots/channels. Free assignment on B.
[B]	Switch to wheel bank B (Beam). Wheel bank B usually contains gobo, zoom, and focus parameters.
[BACK]	On the A/B crossfader, fade back to the previous memory. The fade takes 1 second.
[BACK]	Go to the previous memory in the chaser or Q-List assigned to controllers. Access this key with **[SHIFT]**.
[BEAT]	Teach chase rate through manual stepping. The playback for the chaser is according to the learned time. This is always a hard chaser.
[BIG]	Toggle to second parameter page for spots containing more than 22 parameters. When viewing the first parameter page, the spot label is displayed on light green field. On second parameter page, the spot label is displayed on a dark green field.
[BLIND]	Go to the blind editor. In blind mode you can program or modify memories without disturbing the output on stage. Press a second time to exit Blind mode.
[B.O.]	The General Master blackout button blacks out the dimmer output of the entire board. When active the LED is on.

Key	What it does
Bump Buttons	Flashes the contents of the controller from its current level the to the maximum level of the contents controller.
[C]	Assignment key for crossfader C. Assign memories, loops, or groups of spots/channels. Free assignment on C.
[C]	Switch to wheel bank C (Color). Wheel bank C usually contains Color parameters.
[CALL]	Call the entire output of the board, including all playback assignments and active controllers, to editor control for editing and memory programming.
[CE]	Clear the last numeric entry.
[CHANNEL]	Set the keypad for channel selection. This key also acts as an "and" key when used between channel selections. Press twice to set the keypad to default to channel selection. *Channel* appears in the command line on a gray field. The system recognizes the first number selection as a channel without needing to press this key.
[CL1]	Assign Home values to parameters included in CL1. The home values are set in the Edit Init function under Define Device in the Mix Output menu. Any parameters may be included in this Clear, however it is most convenient to divide CL1 and CL2 between colors and gobos. The default assignments for **[CL1]** are color parameters.
[CL2]	Assign Home values to parameters included in CL2. The home values are set in the Edit Init function under Define Device in the Mix Output menu. The default assignments for **[CL2]** are gobo parameters.
[CLEAR]	A regressive clear function, clearing the command line of the last entry displayed and finally clearing the select spots and channels from the editor.
[COLOR]	Program, access, and erase Color Libraries on the Numeric Soft Keys.
[COPY]	Copy parameter values from one spot to another using values deriving from the editor, memories, or libraries. Copy scroller frame assignments. Copy channel intensity assignments.
[D]	Assignment key for crossfader D. Assign memories, loops, or groups of spots/channels. Free assignment on D.
[DELTA]	A memory modification tracking function.

Key	What it does
[DESKLIGHT]	When active (LED on) the Rate Wheel can be used to dim the desk light.
[DIMMER]	Select spots' dimmer parameters. Assign intensity on the numeric keypad, with **[FULL]** and **[ZERO]**, or use the Dimmer wheel. When selected (LED on) the wheel addresses the dimmer.
[DISPLAY]	Program, access, and erase Display Macros on the Numeric Soft Keys.
[DISPLAY CUE]	Display control for the controllers' LED display.
[DISPLAY TEXT]	Display control for the controllers' LED display.
[DOWN]	Page the Numeric Soft Keys.
[DOWN 1]	Page from page 2 to page 1, etc. on monitor 1. Use with **[SHIFT]** to page on monitor 3.
[DOWN 2 ↓]	Page from page 2 to page 1, etc. on monitor 2. Use as an arrow key to move the cursor down in menus.
[EFFECT]	Open the Effects editor.
[EFFECT]	Program and access Effect Palettes on the Numeric Soft Keys.
[ENTER]	Convert a selected memory to a group of channels and/or spots in the editor, preserving the channels' associated levels and the spot parameters of the original memory. End the copy sequence.
[ERASE]	Erase memories, Loop assignments, Links, Delta, Libraries, Snaps, Groups, text, and Leader assignments.
[EVENT]	Select Events. Events can be operated in the editor, assigned to memories, and examined. Select Events and edit SMPTE code assignments.
[EXAM 1 ←]	Display Exams on monitor 1. In menus use as an arrow key to move the cursor left.
[EXAM 2 →]	Display Exams on monitor 2. In menus use as an arrow key to move the cursor left.
[EXAM 3 ←]	Display Exams on monitor 2. In menus use as an arrow key to move the cursor left.
[EXCEPT]	Exclude channels, spots, Groups from a selected range.

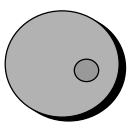
Key	What it does
[F]	Switch to wheel bank F (Focus).
F keys	Function keys. In Menu mode these keys change their function in accordance with the current menu. In editor mode these are direct Macro keys. These keys are also used in Delta memory.
[F6]	Press to display the Macro list.
[FILTER]	Program Filters containing channels, scrollers, spots, and spot parameters. Select Filters for assignment to playback devices and the editor.
[FILTER-]	Assign Invert Filters to playback devices and the editor. Access this key with **[SHIFT]**.
[FINE TUNING]	Toggle between the resolution selected in the System Parameters menu and extremely fine resolution. When enabled (Led on) the wheels and trackballs controlling pan and tilt increment the mirror position bit by bit.
[FLASH]	Flash the dimmer for selected spots or channels. Flashing can be overridden with the dimmer wheel for intensity assignment. The flash rate is adjustable in the System Parameters menu.
[FRAME]	Access scroller frame for value assignments using the numeric keypad.
[FREE]	Free an assignment on controllers. Free Q-Key assignments. A double hit locks Free allowing you to free multiple assignments.
[FULL]	Assign 100% intensity to selected channels. Assign FL to spot parameters.
[GO] (A/B)	Initiate a crossfade on the A/B fader. When a crossfade is in progress the LED is on. When the crossfade completes the LED is extinguished. Pressing this key during a crossfade initiates a crossfade to the next memory.
GO (C/D)	Initiate a crossfade on the C/D fader. When a crossfade is in progress the LED is on. When the crossfade completes the LED is extinguished Pressing this key during a crossfade initiates a crossfade to the next memory.
[GO DIM]	The controller assignment Dim mode captures all parameters of the assigned spots. Raising or lowering the fader affects the dimmer level only. To temporarily blackout the output from the controller, press this key. To return the output, press again. Also functions as a Go key for chaser and Q-List assignments.

Key	What it does
[GO TO] (A/B)	Interrupt a crossfade in progress on the A/B crossfader and immediately initiate a fade to the next memory in the sequence or to a memory selected in the editor.
[GO TO] (C/D)	Interrupt a crossfade in progress on the C/D crossfader and immediately initiate a fade to the next memory in the sequence or to a memory selected in the editor.
[GOBO]	Program, access, and erase Gobo Libraries on the Numeric Soft Keys.
[GROUP]	Program, access, and erase Groups on the Numeric Soft Keys.
[HARD]	Assign chasers and Q-Lists to run in Hard run mode on the controllers.
[HELP]	Open the on-line Help window. After opening the Help window press any key that you need information on. Press again to exit.
[HOLD] (A/B)	Halt the crossfade in progress on the A/B crossfader.
[HOLD] (C/D)	Halt the crossfade in progress on the C/D crossfader.
[HOLD XF]	The XF controller assignment mode crossfades between current stage output and the parameter values of the controller assignment. If there is an assignment on the controller the LED is on. To temporarily blackout the output from the controller, press this key. To return the output, press again. Hold chasers and Q-Lists running on controllers.
[HOME]	Assign Home values to all parameters in the selected spots. Home values can be edited in the Mix Output menu/Define Device/Edit Init. **[CL1]** and **[CL2]** reference the Home values.
[I]	Switch to the I (Intensity) wheel bank.
[IGNITE]	Send ignition codes for devices that require it to turn the lamp on, turn the lamp off, reset the device, and for fan control.
[IRIS]	Select spots' Iris parameter. Assign intensity on the numeric keypad or use the Iris wheel. When selected (LED on) the wheel addresses the Iris.
[JOIN]	Link chasers to respond simultaneously to a single Go or Hold command.
[LATCH]	Change the Bump Buttons to on/off buttons.
[LEADER]	Designate one spot as Leader and the other spots as followers. The Leader 'masters' the x/y parameters of all the follower spots. Enable/disable the Leader function. View the Leader assignment display.

Key	What it does
LEADER FOLLOW	Switch the Numeric Soft Key to Leader/Follower mode. Use to assign a Leader spot and Follower spots. Access **[LEADER]** using **[SHIFT]**.
[LINK]	Program a non-sequential playback sequence. Example: When memory 10 is linked to memory 22, memory 22 follows memory 10 when sequencing the memories on a crossfader.
[LOOP]	Connect a range of memories in a loop. The types of loops are: automatic (infinite) loops, manual loops, follow on cues, finite loops, and auto follow loops.
[MACRO]	Switch the Numeric Soft key mode to Macro for Macro operation.
MACRO 101 - 108	Direct operation of macros 101 –108.
[MASK]	Select the channels/spots from a memory as a group of channels and/or spots in the editor.
[MEMORY]	Select, store, modify, and erase memories. Press twice to name Memory as number default selection. *Memory* appears in the command line on a gray field when the number default selection is Memory.
[MENU]	Enter Menu mode. The Menu List is displayed. Easy to follow selections and messages guide you through the different menus. Press Menu a second time to exit Menu mode and return to editor mode.
[MIDI]	Enable or disable MIDI communication.
Numeric keypad (0-9)	Use for numeric entries.
Numeric Soft Keys (NSK)	50 Numeric Soft Keys operate in 11 different modes; these keys are generally used for numeric selections. In the Alpha mode the keys simulate an alphanumeric keyboard. In Q-Key mode you can fade memories assigned to the Q-keys.
[PALETTE]	Program, access, and erase Palettes on the Numeric Soft Keys.
Parameter keys	Select parameters. Selected parameters appear in red on the Stage display and are bracketed on the Wheels' LED display. When bracketed the wheel accesses the parameter.
[PARAM RETURN]	When in the Effects editor, temporarily toggle the parameter keys from Effect attributes to parameter selection.

Key	What it does
[PART]	Memories may be divided into up to 9 parts. Each part can have its own fade and wait times.
[PILE ON]	Toggle the fade mode for Q-Keys. When active (LED on) the fade mode is additive - each Go adds the Q-Key assignment to the current lighting state. When inactive (LED off) each Go initiates a crossfade between the current Q-Key output and the incoming Q-Key assignment.
[POSITION]	Program, access, and erase Position Libraries on the Numeric Soft Keys.
[PRIO]	Enable or disable the LTP control priority. Change or store priority maps.
[Q-KEY]	Switch the Numeric Soft Key mode to Q-Key.
[Q-LIST]	There are 2 **[Q LIST]** keys. One is located in the editor section; it is used to preface Q-List selections. The second **[Q LIST]** key switches the NSKs to Q-List mode.
[RATE A/B]	When active (LED on), the Rate Wheel modifies the crossfade rate on the A/B crossfader.
[RATE C/D]	When active (LED on), the Rate Wheel modifies crossfade rate of the C/D crossfader.
[RATE CHASE]	When active (LED on), pressing **[GO DIM]** and **[HOLD XF]** modifies the chaser rate.
[RELEASE]	Release spots, spot parameters, channels, and scrollers from memories, the editor, Libraries, and controller assignments.
[REM DIM]	Black out all dimmer output except the selected spots or channels (displayed in red in the editor). Press a second time to return output.
[RESET]	Clear the editor of all active channels and spots that are under editor control, putting the editor in idle. Return to live mode from Menu mode.
[S1] [S2]	Inhibit submasters. Any spot, channel, or memory may be directly assigned to either Submaster. These Submasters can also submaster the A/B or C/D crossfaders. This function is assigned through the System Parameters menu.
[SEQ] (A/B)	When activated (LED on), the next memory in the numerical sequence is automatically loaded into the crossfader at its zero limit.

Key	What it does
[SEQ] (C/D)	When activated (LED on), the next memory in the numerical sequence is automatically loaded into the crossfader at its zero limit.
[SHIFT ↑]	This key accesses the secondary function of keys that contain 2 functions.
[SMPTE]	Enable or disable the SMPTE function. Start the SMPTE clock. Edit SMPTE time code assignments for Events and memories.
[SNAP]	Program, operate, and erase Snaps on the Numeric Soft Keys.
[SNAP +]	Operate Snaps in the forcing mode, selecting the Snaps on the Numeric Soft keys. Access using **[SHIFT]**.
[SOFT]	Assign a soft run mode chaser to the controllers.
[SPOT]	Switch the Numeric Soft Key mode to Spot. Spots can be selected using the NSKs.
[SPOT]	Set the numeric keypad for spot selection. This key also acts as an "and" key when used between spot selections. Press twice in order to set the number default selection as Spot. *Spot* appears in the command line on a gray field. The system recognizes the first number selection as spot selection, making it unnecessary to press this key before the number selection.
[STAGE]	Toggle between the Stage display (including spots, some channels, A/B playback, and chasers) and X-Fade exam (a graphic representation of the A/B playback, a short memory list, and an expanded controller display). This key generally returns monitor 1 to Stage display from any other display except menus. Use with **[SHIFT]** for display control on monitor 3.
[STEP DOWN]	Decrement parameter step by 1.
[STEP UP]	Increment parameter step value by 1.
[STORE]	Store memories, Libraries, text, Loop assignments, Snaps, etc.
[STORE RATE]	Store chaser rate after modification
[SWAP SCREENS]	Swap between monitor 1 and monitor 2. Helpful when using Print Screen to print the display on monitor 2..
[TEACH MACRO]	Teach Macro allows you to program a Macro live. The Teach Macro function provides a way to program Macros for menu functions (not including the Macro menu).

Key	What it does
[TEXT]	Access the alphanumeric keyboard. Text labels may be attached to Macros, memories, show files, Snaps, Libraries, Events, Groups, effect Palettes, Display Macros, and Palettes.
[TIME]	Assign time in to the selected memory or part. Press twice to access time out assignment.
[TOPO]	Create a moving light map. Used for display control on monitor 2, switching between a full screen Topo display, a full screen channel display, and a spot display with a reduced Topo map.
[TRACK LIB]	Track Library assignments in memories.
[UP]	Page the Numeric Soft Keys.
[UP 1]	Page from 1 to page 2, etc. on monitor 1. Use with **[SHIFT]** to page on monitor 3.
[UP 2 ↑]	Page from page 1 to page 2, etc. on monitor 2. Use as an arrow key to move the cursor up in menus.
[WAIT]	Assign delay time, wait-in time, and wait-out time to memories or parts.
[WINDOW]	Move the window cursor. The location of this cursor shows which window will change when using the paging keys.
[X]	Select the X parameter. When active (LED on) the left vertical wheel controls Pan.
[X LOCK]	Lock the X-axis. The trackball addresses Y only.
[Y]	Select the Y parameter. When active (LED on) the right vertical wheel controls Tilt.
[Y LOCK]	Locks the Y-axis. The trackball addresses X only.
[ZERO]	Force selected spot parameter or channel to zero.
	The Trackball controls the pan and tilt of the mirror. Trackball resolution for 16-bit pan and tilt is adjustable in the System Parameters menu or by using **[FINE TUNING]**
	There are 6 wheels for Parameter and Effect attribute control. Each wheel having 4 parameter assignments. There are 2 vertical wheels. One for dimmer and pan and one for iris and tilt.

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