BROADWAY

6 Automation
Overview

All audio parameters on Broadway, including switches, rotaries, faders and text displays, are included in the snapshot automation system.

“View” parameters, such as the current BANK, SEL settings, solo’s etc. are not stored or recalled. VCA Master Fader positions are stored on a per-cue basis, as are the assignments of faders to VCA’s.

VCA master faders are included in the automation system, but may be “scoped” out, effectively leaving them in manual mode. The idea is that the relative balance between a group of faders (perhaps a group of radio microphones) can be set up on the input faders, and these may all be “moved” together, retaining the relative balance, via a single fader - the VCA master.

The dB offset applied via the VCA master will almost certainly be different from day to day. When a scene is recalled, therefore, the input faders are returned to their stored values (as long as their "scope" is switched in), and the appropriate VCA master fader offsets are applied to the gain for each of the inputs slaved to that VCA.
Terminology

Complete console snapshots are stored as “Cues”. Cues may be named, and may have MIDI and Event data associated with them. Cues may be arranged into a list called, unsurprisingly, the “Cue List”. A complete cue list may be stored as a named Project on the internal hard disk, or onto a Floppy Disk.

The highlighted row in the cue list is marked with the cursor - an inverted bar. The cursor may be moved around the screen via the jog wheel, or, in some cases, by touching areas of the screen. The jog wheel includes a push-switch for selections and editing.

Below the touchscreen are a number of “transport” switches which are used primarily for moving between cues. Only those switches which are illuminated are available for selection.
Creating Cues

Once the console has been set up as desired, pressing **Make Cue** will bring up the cue creation window.

```
Create / Delete Cue
Cue Run: set change underscore [ADD, WAIT, MIDI]

1.0 all muted 0.00 0
2.0 opening 10.05 0
3.0 set change underscore 5.02 0
4.0 scene change 0.00 0

<table>
<thead>
<tr>
<th>UPDATE CUE</th>
<th>CREATE CUE</th>
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</thead>
<tbody>
<tr>
<td>CUE LIST</td>
<td>INSERT CUE</td>
</tr>
<tr>
<td>DELETE CUE</td>
<td>RENUMBER</td>
</tr>
</tbody>
</table>

At the top left of the screen is a selector which allows the user to select "ADD MAIN CUE" or "INSERT SUB CUE".

To **add a new cue** to the end of the list, check that ADD MAIN CUE is selected, and press [Create It].

To **insert a cue** at the current cursor position, select INSERT SUB CUE, and press [Create It]. A new cue will be inserted after the cursor position, and allocated an appropriate sequence number halfway between the two numbers either side. So, inserting a cue between cues 3.0 and 4.0 will generate a cue in between those two, numbered 3.5. Insertion of additional cues will follow the same numbering principle, as the system attempts to find a suitable half-way point to the nearest single decimal place. Once no further legal sequence numbers remain in a given space, it is advisable to renumber the list before adding more cues. See Renumbering below.

To **overwrite the highlighted cue** with the current console status, press [Update Cue].

New cues are created with a default name of “Unnamed Cue”, which may be edited by touching the name box in the top right area of the touchscreen.

At the bottom of the screen are [Renumber All Cues] and [Cue List].

[Cue List] returns the user to the Cue List screen, as would pressing the **Cue List** hard switch.
Renumbering

<table>
<thead>
<tr>
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<tr>
<td>Cue Run: set change underscore FADE WAIT MIDI</td>
</tr>
<tr>
<td>1.0 all muted 0.00.0</td>
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</tbody>
</table>

[Renumber All Cues] assigns integer sequence numbers to every cue from 1.0 to X.0, where X is the number of cues.

Once part of a cue list has reached saturation (i.e. too many inserted cues), it is advisable to renumber the list before more cues can be added. Renumber will do just this, and will ask for confirmation to avoid unfortunate mishaps.

It might also be useful to renumber a list once rehearsal or setup time is over, and the project has settled down.

The user may choose to renumber cues automatically when insertions or deletions are made. See “Auto Renumber” (5.4.3.2) above.
Replaying Cues

In normal operation, the Cursor Bar will lie on the “current”, or “last recalled”, cue. The [NEXT] and [LAST] switches will recall the next and last cues respectively, and the cursor will follow the current cue.

The jog wheel will scroll through the available cues for the current project. When any cue is highlighted, the [EXECUTE] switch will flash. This indicates that [EXECUTE] will recall the highlighted cue to the desk, and that cue will become the current cue. In this way, it is possible to recall cues out of sequence, especially useful in rehearsal or unpredictable live set environments.

<table>
<thead>
<tr>
<th>Cue List: Project &quot;Default&quot;</th>
</tr>
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<tbody>
<tr>
<td>Cue Run: set change underscore</td>
</tr>
<tr>
<td>1.0</td>
</tr>
<tr>
<td>2.0</td>
</tr>
<tr>
<td>3.0</td>
</tr>
<tr>
<td>4.0</td>
</tr>
</tbody>
</table>

Crossfades

Although cues are normally recalled to the console immediately, Broadway is also able to crossfade settings from the current desk state into the next cue. This can be useful when smooth transitions are required (for example a fadeout of a sound effect and a fade in of some live Microphones).

Crossfade will take the current position of all faders, and move them to the settings stored in the upcoming cue over the defined length of the crossfade. Since the time is defined globally for the cue, all faders will take the same time to fade. Therefore channels for which the adjustment in the new cue is greater will "move" faster than those with small adjustments.

Note that only Fader levels are crossfaded - all EQ settings, switches, filters etc. are snapshot as usual, but the POINT in the crossfade at which the various elements are switched may be reconfigured. Note also that although the audio is crossfading, the physical faders on the surfaces DO NOT move during the crossfade - they will move into position only once the crossfade is complete.

Crossfades can be achieved in one of two ways: timed crossfade, or manual crossfade.

Timed Crossfade

The user may define a crossfade time for each cue. The time is edited by pressing the area in the "Fade" column on the Cue List screen for the associated cue. Note that this time relates to the duration over which movement INTO that cue will be performed. It has no effect on the crossfade time into the next cue.

By default, Broadway will ignore the crossfade time when executing cues out of sequence with the jog wheel and EXECUTE switch (for example when programming during a break). However, the EXECUTE=FADE toggle switch on the Cue List page will result in crossfades being performed even when cues are recalled via the EXECUTE switch.

When a crossfade is underway, the XFADE switch to the left of the Touchscreen panel flashes, and the XFADE fader begins to move from 0% (the bottom of its travel) to 100% (top) to show the percentage of the crossfade completed.
At any point during the fade process, the user may interrupt the process by touching the XFADE fader. This will halt the process, and the user may then complete the fade manually by moving the fader towards the top of its travel. Of course, the fader may equally be moved downwards to reverse part of the fade, but at some point it must either be parked at the top, or the crossfade cancelled.

The user may also touch any channel fader to drop that channel out of the fade, and return it to manual operation.

When the XFADE fader reaches the top of its travel, the cue is deemed to be recalled, and the touchscreen display will be updated to show this.

To remove a FADE time from a cue, enter the edit box as usual, but type "0.00".

**Manual Crossfades**

A manual crossfade is begun simply by pressing the XFADE switch. The switch will illuminate to show that a crossfade is active.

The XFADE fader will snap to the 0% mark, and the user may then use the fader to perform the crossfade at the desired speed.

**Switch points**

The point at which switched functions (i.e. anything other than Faders) may be configured per function block, per cue. This is achieved using an extension of the REPLY SCOPE functions.

Pressing REPLY SCOPE will, as usual, bring up a list of the available scope blocks. Choosing one of these blocks will show the list of available scope choices, each of which has an associated percentage.

The percentage will show either:

- 1% Switched as soon as the crossfade starts
- 50% Switched half way through the crossfade
- 100% Switched at the end of the crossfade

To edit the percentage of a particular scope, simply turn on the EDIT PERCENT toggle switch, and press the appropriate scope to cycle that scope through the percentage options.

**WAIT**

The console will usually only recall cues when the User manually activates a recall, or the system receives a valid incoming MIDI Program Change.

However, cues may also follow on automatically from each other. This is achieved using a function called "WAIT".

The WAIT time is listed alongside the Fade time for a cue, and is edited in the same way (just press the space in the WAIT column for the appropriate cue). WAIT time is defined as the time that the associated cue will wait before automatically recalling the next cue.

So, if two cues exist - A and B, putting a wait time of 3 seconds against cue A, then recalling Cue A will result in Cue A being recalled immediately, and 3 seconds later Cue B will be automatically recalled.

Note that a wait time of "0.00" will result in the next cue being recalled IMMEDIATELY. So, to produce a fast sequence of automatic cues (for example for a series of chained sound effects cues with MIDI Note Transmission), just give all the cues WAIT values of "0.00".

To remove a wait time from a cue, enter the edit box as usual, but type "+,--". Remember that "0.00" is not "WAIT OFF", but "IMMEDIATE RECALL".
Replay Scope

Whenever a cue is created or updated, the console stores every audio parameter to the automation system. However, upon recall, the user may define which areas of the console should be recalled with each scene.

There is a useful "copying" function which can be achieved with REPLAY SCOPE (see section 7.4 "Selectively Copying Data Between Cues". Pressing [Replay Scope] will replace the touchscreen switches at the bottom of the Cue List screen with a list of areas of the console, most of which are highlighted in the default state. Each of these areas (EQ, FADERS, MUTES, etc.) is presented as a "toggle" switch - that is, pressing the switch once will deselect that area of the console, pressing it again will reselect it.

<table>
<thead>
<tr>
<th>Channel</th>
<th>graux</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>matrix</td>
<td>misc</td>
<td>cue list</td>
<td></td>
</tr>
</tbody>
</table>

When any cue is recalled, the Scope settings associated with that cue will define the areas of the console to be recalled in that scene.

By scrolling through the cue list with the jog wheel while [Replay Scope] is selected, the Replay Scope of each cue may be set individually. It might be useful, for example, to "ignore" fader positions for ten scenes in a row to allow for live adjustments, then include the faders in the eleventh cue, to reset them to a required absolute position.

The replay scope areas available for selection or deselection are:

Channel: Source A/B, Phantom Power;Gain
Faders + Mutes Fader levels and mutes
Insert + Pre/Post Insert switch and Pre/post EQ switch
Routing Main Outputs & Pan
Sends Sends to all GrAuxes
EQ EQ settings and switches, including

<table>
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<tr>
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<tbody>
<tr>
<td>Cue Run: set change underscore FADE WAIT MIDI</td>
</tr>
<tr>
<td>1.0 all muted</td>
</tr>
<tr>
<td>2.0 opening</td>
</tr>
<tr>
<td>3.0 set change underscore</td>
</tr>
</tbody>
</table>

Source 50%
Fadmute 1%
Insert 1%
Edit percent
Routing 1%
Sends 1%
EQ 1%
Back
### Filters
- **Graux:**
  - Faders + Mutes
  - Inserts
  - Routing
  - Sends
- **Fader levels and mutes**
  - GrAUX inserts
  - Main Outputs & Pan
  - Sends to all Matrices

#### GrAUX Scope
- **Cue Run:** set change underscore [FADE WAIT MIDI]
  - 1.0 all muted: 0.00.0
  - 2.0 opening: 10.05.0
  - 3.0 set change underscore: 5.02.0

#### Matrix Scope
- **Cue Run:** set change underscore [FADE WAIT MIDI]
  - 1.0 all muted: 0.00.0
  - 2.0 opening: 10.05.0
  - 3.0 set change underscore: 5.02.0

#### Miscellaneous
- **VCA Faders**
- **Fader levels**
- **VCA Mutes**
- **Mutes**
- **MIDI + Events**
- **MIDI messaging and event relays**
- **I/P Surface Assignments**
- **Assignments of inputs**

#### GrAUX Scope
- **Cue Run:** set change underscore [FADE WAIT MIDI]
  - 1.0 all muted: 0.00.0
  - 2.0 opening: 10.05.0
  - 3.0 set change underscore: 5.02.0
**Preview**

To the right of [LAST] is [VIEW]. This is a latching mode switch. When selected, pre[VIEW] mode will allow the user to recall cues to the surfaces whilst leaving the rack audio as it was when [VIEW] was first pressed.

This can be useful if the operator needs to recall upcoming cues to check their contents, whilst a fairly static scene is being performed on stage. There will be no changes to the audio, but the surfaces will reset just as they would normally.

It is also possible to edit and store data when in pre[VIEW] mode. The syntax is just as when in normal operation, except the audio will not follow the surface control movements.

Coming out of [VIEW] mode will return the surfaces to the settings of the audio racks.