



Eos Family Effects Intensive

Workbook

V3.0.1B

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Graphics courtesy of David Kane

Purpose of the Class

Eos Family Intensive Classes are not entry-level training courses. They are fast-paced, feature-focused sessions designed for users with an enhanced knowledge of the desk. Instructors will expect attendees to be competent in full system navigation, speedy keypad operation, move-fade philosophy, referenced data structures, and intermediate knowledge of the topics being covered. Unlike other classes, the class will move very quickly. Once created, your assignments will be shared with the class and assessed, in order to provide constructive feedback to grow your skills in the topics being covered.

LEARNING OBJECTIVES:

After completing the Effects class, one should be able to:

- Create any of the five Effect types and be able to modify an Effect's parameters
- Apply Effects to channels or groups and record to both subs and cues
- Build an Effects library or show file for future use
- Configure Faders to control Effects or the parameters of the Effects
- Override Effects in cues or presets at the Effect level, cue level or channel level

SYNTAX ANNOTATION

- | | |
|---------------------------------|-----------------------------|
| • Bold | Browser menus |
| • [Brackets] | Face panel buttons |
| • {Braces} | Softkeys and direct selects |
| • <Angle brackets> | Optional keys |
| • [Next] & [Last] | Press & hold simultaneously |
| • «Direct Select» | Direct Select button press |
| • [MS Object] | Object on a Magic Sheet |

HELP

Press and hold **[Help]** and press any key to see:

- the name of the key
- a description of what the key enables you to do
- syntax examples for using the key (if applicable)

*As with hard keys, the "press and hold **[Help]**" action can be also used with softkeys and clickable buttons*

THE MANUAL

The manual is available on the console, Tab #100.

Click on Add-a-Tab (the {+} sign), select Manual

Hold [Tab] & press [100]

Please note that it is not available on Windows XP devices or on Mac computers but is available as a download from the web site.

Unit 1 – Intro Test

Start with one of the following show files:

“EOS FAMILY EXPERT TOPICS – EFFECTS – REVA.ESF3D, .ESF2 OR .ESF”

INTRO TEST - GETTING FAMILIAR WITH THE FILE & RIG

Take 10 minutes to learn the venue rig and the file.

- Familiarize yourself with the magic sheet navigation.
- What building blocks already exist that we can use to build effects?
 - Color Palettes
 - Focus Palettes
 - Beam Palettes
- Take note of the effects magic sheet page. These are the types of effects we will be covering today.

INTRO TEST - BUILD AN COLOR EFFECT

You have 20 minutes to build a color effect, effect 400

- Build a color effect that fades between red, violet, and turquoise across the Cyc Top (Group 301).
- You may not use any effects that already exist in the file.
- Record the Effect in Cue 401/1.
- Stop the effect in Cue 401/2.

LET’S TALK

- How did you go about building the effect?

Did you use an absolute effect? You should.

- Did you struggle?

Let’s build **Effect 400.1** together – absolute color effect and build the three cues

- How do you stop an effect running in a cue?

[Group] [301] [Stop Effect] [Enter] or [Effect] [Enter]

[Effect] [400] [.] [1] [Stop Effect] [Enter] or {At} [Enter]

Effect 400.1 : R/V/Tq					
Action	Param	Step Time	Time	Dwell	Level
1		(1)	1	0	CP 9021 (Red)
2		(1)	1	0	CP 9034 (Violet)
3		(1)	1	0	CP 9028 (Turquoise)

Unit 2 – Step-based Effects

[Effect] [Effect]

Open the Effect Editor

[401] [Enter]

To create Effect 401

There are just three types of effects. Step-based, Absolute, and Relative. Focus, Linear, and Color are Relative effects.

{StepBased} softkey or touchscreen [Enter]

To select Step-based

WHAT IS A STEP-BASED EFFECT?

- Step-based effects are a way to build chases across specific channels
- Steps have a defined on-state and off-state which allows you to specify exactly what a channel does at every point in the effect. No other type of effect has this.
- Not transferrable to other channels.
- They are not as flexible as other effects, but their rigidity allows you be incredibly detailed
- You can specify a specific channel order as well as use the same channel multiple times
- Steps cumulatively make cycle time, which will proportionally modify the effect when edited.
- The power of a Step-based effect lives in Step Time
 - Step Time is the time from triggering the current step to triggering the next step...how long on the "go"
 - It gives you control of positive or negative space in the relationship between step time and total in/dwell/out time. Larger step time = more air between steps. Smaller step time = overlap between steps

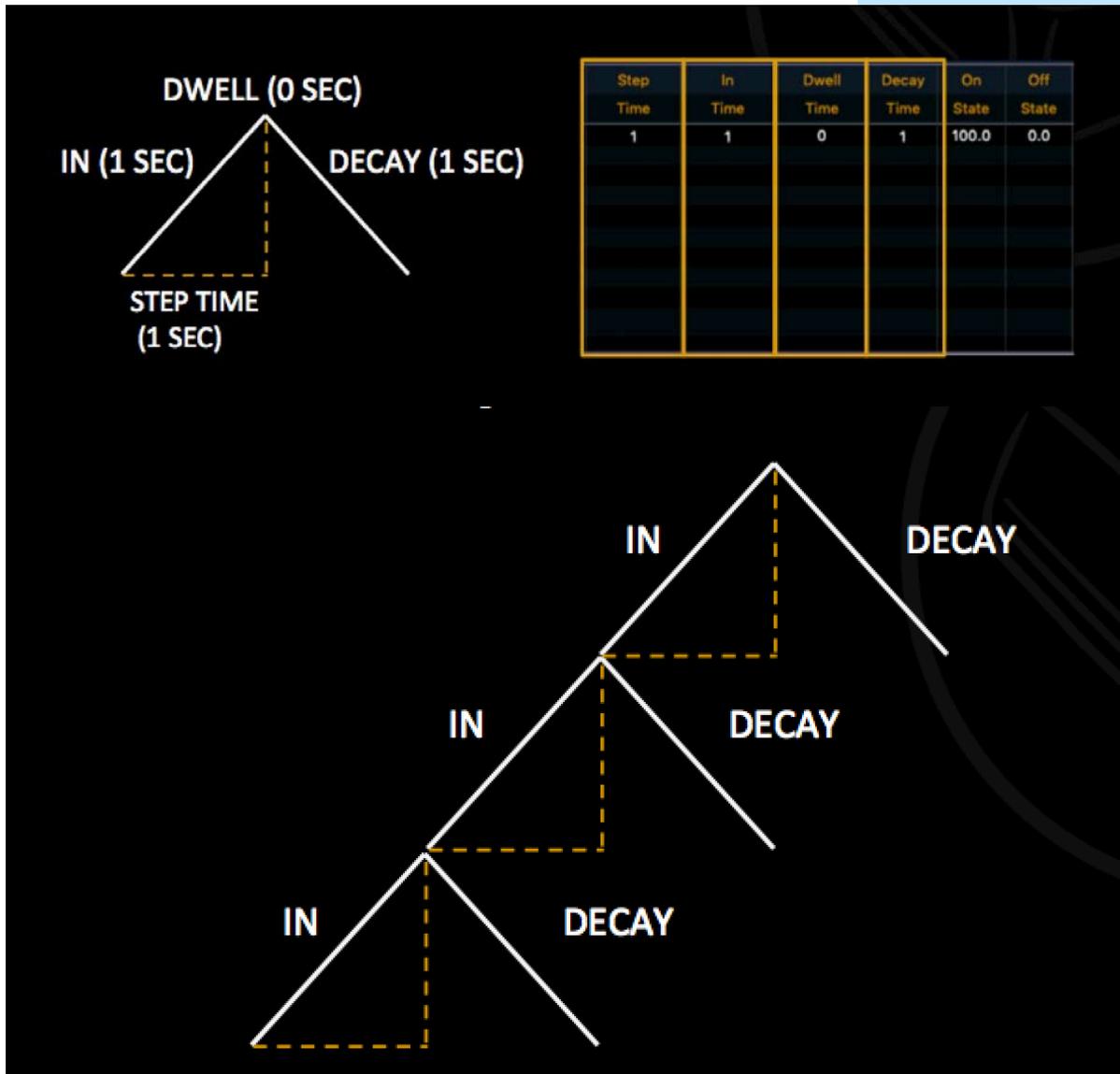
The diagram shows a table with the following structure and annotations:

Table Row ID	Step	Channels	Param	Step Time	In Time	Dwell Time	Decay Time	On State	Off State
	1			1	1	0	1	100.0	0.0

Annotations and their corresponding table cells:

- Parameters affected in this step**: Points to the **Param** column.
- How long the step remains active**: Points to the **Step Time** column.
- Level when step is active**: Points to the **On State** column.
- Level when step is inactive**: Points to the **Off State** column.
- Channel Selection for Current Row**: Points to the **Channels** column.
- Time until the NEXT step starts**: Points to the **Step Time** column.
- Step fade in time**: Points to the **In Time** column.
- Step fade out time**: Points to the **Decay Time** column.

- Default timing is Step Time 1, In Time 1, Dwell Time 0, Decay Time 1
 - This creates a rolling wave-like effect
 - When the Step Time matches the In Time, the next step goes as soon as the previous step peaks into the dwell. The first step is complete as the second step reaches its dwell
 - You can then modify each individual time for specific steps/channels from there for a unique, specific effect.



CREATE A SIMPLE STEP-BASED EFFECT

We have already created effect 401, and selected Step-based. Now we are going to edit it

[Label] Front Chase [Enter]

{Step} [1] [Thru] [5] [Enter] [Enter]

Second Enter to confirm the creation of 5 steps

With all 5 steps selected, [Page▶] to the Channels column

[1] [Thru] [5] [Enter]

Step	Channels	Param	Step Time	In Time	Dwell Time	Decay Time	On State	Off State
1	1		1	1	0	1	100.0	0.0
2	2		1	1	0	1	100.0	0.0
3	3		1	1	0	1	100.0	0.0
4	4		1	1	0	1	100.0	0.0
5	5		1	1	0	1	100.0	0.0

[Live] [Recall From] [Effect] [401] [Enter]

Notice how it goes in order through channels 1 through 5

[1] [Thru] [5] [Offset] [Random] [Effect] [401] [Enter]

to apply the effect on a random channel order

It still runs in order channels 1 thru 5 because it is following the set order in the effect.

[101] [Thru] [105] [Effect] [401] [Enter]

Error: No channels were modified. This effect only applies to channels 1 thru 5.

[Record] [401] [/] [3] [Label] Front Chase [Enter]

[Group] [301] (Cyc) [Out]

To see only channels 1 through 5

[Record] [401] [/] [4] [Label] Cyc Out [Enter]

EFFECT MODIFIERS

[Effect] [Effect]

Open the Effect Editor again

Let's look at the options on the right in the CIA

TYPE

The type of effect. Currently looking at a step-based

CYCLE TIME

The time it takes to complete all the steps in the table. If you change this time, it will proportionally change all the times in the steps.

Change the Cycle Time to 1. Change it to 3.

Watch how the changes affect the effect

DURATION

How long the effect runs until stopping.

Change the Duration to 2.

Watch how the effect runs for 2 seconds before stopping

Note that the command line says Duration 0:02. Maybe you have a flicker and you want it to run for 1.5 seconds. You would use duration.

Other options under duration include:

- **Num Cycles:** Number of completed cycles before stopping.

Change Num Cycles to 1.

Restart the effect in Live to see it run for 1 cycle before stopping

Want a one-time ripple across the stage. Do 1 cycle.

- **Infinite:** Runs infinitely until you tell it to stop. This is default.

Change Num Cycles back to Infinite

Restart the effect again in Live

PARAMETERS

Specifies the fixture parameters that will be involved in this effect such as Pan, Tilt, Cyan, Red, Zoom...

ATTRIBUTES

- **Forward:** This is the default. Steps run forward 1-5
- **Reverse:** Steps run backwards 5-1. **Set to Reverse**
Select Reverse.
- **Bounce:** Steps run forwards, then backwards: 1, 2, 3, 4, 5, 4, 3, 2, 1.
Select Bounce.
Deselect Bounce and select Forward
- **Random Group:** Step order is applied continuously randomly.
Select Random Group. Watch for a bit. Deselect Random Group
- **Random Rate:** This overrides the rate/cycle time off the effect. It is applied in a range.
Select Random Rate

Watch the effect for a bit

Watch the effect for a bit

[50] [Thru] [150] [Enter]

This randomizes the rate between steps, and is great for flickers

Select Random Rate and hit [Enter] without entering a value

To reset or remove the random rate

- **Build:** Keeps each step's value at its on state even when the step isn't active. It adds each step until it gets to the last step, and then turns all steps off and starts over.

Select Build. Watch for a bit. Deselect Build.

A perfect example: a marquee effect

- **Positive:** This is the default. The effect runs as programmed. The on state is the level when the step is active. The off state is the level when the step is inactive
- **Negative:** The effect runs inverse. The on state is the level when the step is inactive. The off state is the level when the step is active.

Select Negative. Watch for a bit. Select Positive.

A toggle between the two options

- **Continuous Run:** The effect will keep running until there is a stop effect command
- **Repeat on Go:** The effect will restart every time a new cue is fired, and the effect is still running

Change the Duration – Num Cycles to 1.

Restart the effect in Live to see it run for 1 cycle before stopping

[Go To Cue] [2] [Enter]

Hit ► (Go) into cue 3

Watch the effect start and play once

Hit ► (Go) again

The effect does not restart

In Attributes, select Repeat on Go

[Go To Cue] [3] [Enter]

Hit ► (Go) into cue 4

The effect repeats on the Go of cue 4

ENTRY

How the effect starts / how the channels enter the effect. We will talk about most of the entry & exit types when we get to other types of effects

- **Entry Time** – the length of time for the channels to enter the effect. Notice how the default is Cue/Sub. This means the effect fades in using the time of the cue/sub it is recorded into.

[Go To Cue] [2] [Enter] Hit ► (Go) into cue 3

The effect fades up in 2 seconds, the time of Cue 3

Change the Entry Time to 0

[Go To Cue] [2] [Enter] Hit ► (Go) into cue 3

The effect starts immediately following the entry time of 0

EXIT

How the effect ends/ how the channels exit the effect.

- **Exit Time** – the length of time for the channels to exit the effect.
 - **Stop and Hold:** when the effect is exited, channels will halt and stay exactly where the effect left them
 - **Stop and Fade:** when the effect is exited, channels will stop running the effect where they are and fade to their background state using the exit time.

QUESTION

We have a problem with our effect. We want a smooth exit. With 1 cycle, the effect is restarting on channel 1 before abruptly stopping. This is happening because 0.6 seconds after step 5 starts (Step Time) the effect cycles back to step 1. The effect doesn't complete until we get to the off state of step 5, which is 0.6 seconds after step 1 restarts. What is a way we could fix this?

POSSIBLE ANSWERS:

- Set the Exit to Stop & Fade. The effect will stop after step 5 and fade to background
- Or Change the step time of step 5 to 1.2. This will mean that step 1 will not start until step 5 completes if the duration is infinite. If it is set to number of cycles, step 5 will finish and the effect will stop before step 1 restarts.

QUESTION

The designer has asked to change this effect. They have said "The lights roll past the actor (who is CS), like a train passing, and when the actor is lit by the train they should stay at a glow as the train keeps going. How can we do this?"

POSSIBLE ANSWER:

- Change the off state of channel 3 to 50. Change the exit to stop and hold so channel 3 will remain at 50 and not return to the background
- Note: the effect will restart every time a cue is triggered with it applied, which means when the effect restarts in cue 4, channel 3 will turn off until step 3 of the effect happens. In this scenario, we would probably only want one cue.

CLEANUP

[1] [Thru] [5] [Stop Effect] [Enter] or [Effect] [401] [Stop Effect] [Enter]

[Record] [5] [Label] Stop Front Chase [Enter]

Notice Channel 3 is recorded at 50!

It records the state of the channels when the effect is stopped if stop & hold is selected.

Unit 3 – Absolute Effects

WHAT IS AN ABSOLUTE EFFECT?

Absolute effects are sequential actions that channels are to take. Unlike Step-based effects, they have no on/off state but rather they define progressive behavior from one action to the next. You specify exactly what actions you'd like the fixtures to take, in a specific order. Each action goes to its level in its timing and awaits further instruction.

Absolute effects can be applied to any channel (or group of channels in any order) that has the parameter specified in the effect. This is the power of the absolute effect. It is flexible and universal to any fixture in your rig that has the capability to do the effect

The diagram shows a table with the following structure and annotations:

Table Row ID	Action	Parameters affected in this step Param	Step Time	Time	How long the step remains active Dwell	Level
1			(1)	1	0	0.0
2			(1)	1	0	Bkgrd

Annotations and their corresponding table cells:

- Table Row ID:** Points to the first column (Action).
- Parameters affected in this step:** Points to the second column (Param).
- How long the step remains active:** Points to the fifth column (Dwell).
- Time until the NEXT step starts:** Points to the third column (Step Time).
- Step fade in time:** Points to the fourth column (Time).
- Level when step is active:** Points to the sixth column (Level).

CREATE A SIMPLE ABSOLUTE EFFECT

[Effect] [Effect], then [402] [Enter]

Open the Effect Editor and create effect 402

{Absolute} softkey or touchscreen [Enter]

To select Absolute

The default absolute effect has two actions. It basically goes from a level of 0 to a background level. Very usable as is. Let's go Live and apply it!

		Step			
Action	Param	Time	Time	Dwell	Level
1		(1)	1	0	0.0
2		(1)	1	0	Bkgrd

[Live] [Group] [301] [Effect] [402] [Enter]

This will start the effect on the cyc. Notice we don't see anything even though the effect has started! That's because this effect goes from 0 to background. The background is currently 0, so the lights are going from 0 to 0...not a very exciting effect

With Group 301 on the command line, run the level wheel slowly up to full

The lights fade from 0 to whatever level the channels are at as they are being rolled up. This is the beauty of an absolute effect with background as a level. It gives you the flexibility to apply the affect and have the lights go from where they currently are to a determined level

Let's look at this effect on different channels!

Using MS 301 "ML", [FOH Spots (Sola Thtr)] (G102) [Full] (IP5)

[Effect] [402] [Enter]

The effect works!

This effect has no channels specified in it, so it can work on any fixtures that have intensity

[Effect] [Effect]

Change the level of action 2 to 50 – select Bkgrd, then [50] [Enter]

Cyc now goes from 0 to 50, no matter what level they are at in the background
Effect is running across the cyc from channels 301 – 312

[Live]

[312] [Thru] [301] [Effect] [402] [Enter]

Now it runs in the opposite direction.

This is because absolute effects don't have channels embedded in the effect, so they run on the channels selected, in the order selected.

[Clear] [Sneak] [Enter]

Remove manual values

OFFSETTING

Offsetting with absolute or relative effects allows you to apply the same effect across the same channels in a different order.

Channel order matters. The actions will run across the group of channels in the order in which the channels were selected.

Offsetting macros are incredibly useful. Some common ones are:

- Reverse
- Random
- Mirror In / Mirror Out
- Num Groups / Chan Per Groups
- Interleave

Let's try some offsetting with pre-existing tools in the show file!

{Snapshot} [102] or use the Popup Snapshot directory

Look at Magic Sheet 8001 "Programmer"

These are macros for commonly used syntaxes. On the bottom left there are a lot of offsetting tools

[Group] [301] [Offset < >] (M8049)

The Offset tool opens in the CIA, with Mirror Out selected

[Effect] [402] [Enter]

Now it runs from the inside of the cyc to the outside because of the offset.

It is the exact same effect but creates a much different look with the same effect. Very powerful!

[Group] [301] [Offset Random] (M8067) [Effect] [402] [Enter]

Results in a random ordering of the cyc in the effect.

It's a good idea to create different groups of the same channel with different orders using the offset tool

{Snapshot} [104] or use the Popup Snapshot directory

Take a look at Magic Sheet 304 "Effects"

Select the Cyc Tab along the left-hand side

This Magic Sheet has many different groups with different offsets already

[Cyc Top] (G301) [Effect] [Enter]

To stop the effect on the cyc top

[↑ Cells] (G303) [Effect] [402] [Enter]

The effect is now running across the individual cells because we used the cells and not the parents. This effect has much more granularity than just using the parents. Notice this cyc magic sheet has different offset groups for both the parents and the cells.

[↑ Parents] (G302) and roll it down & up with the level wheel

These are the parents of the cells. Each parent (fixture) has 6 cells in it. We applied the effect to just the cells, so it is running on the cells and ignoring the parents. The parents must be on in order to see the effect. As you roll them down, they act as a mini grand master for their cells

When we first applied the effect to the Cyc top group (group 301) we did not specify the cells, and it ran across each fixture with their cells acting as one.

[↑ Parents] (G302) and roll it up to full

[3] [Out]

[Record] [401] [/] [6] [Time] [0] [Label] Cyc Chase [Enter]

[Go To Cue] [3] [Enter]

▶ (Go) into cue 4 and quickly ▶(Go) into cue 5

not giving the effect time to finish

Because the effect is stop and hold, channels 1,2,4, & 5 have values from the effect

▶ (Go) into cue 6

These effect values track.

So, if we want this cue to send all 5 of these lights to 0, no matter where they stopped in the effect...

[Cue] [6] [Assert] [Enter]

Puts an assert on cue 6.

[Go To Cue] [3] [Enter] and rerun the series of cues

EFFECT MODIFIERS

Let's look at some more effect modifiers!

ENTRY / EXIT

- Immediate – all channels enter the effect immediately – the Default

[Go To Cue] [5] [Enter] ▶(Go) into cue 6 ■(Stop/Back)

The effect starts immediately from the middle of the cyc

- Cascade – channels enter the effect in selection order

[Effect] [Effect] Change the entry to Cascade

▶(Go) into cue 6

The effect starts on 301.1 and cascades in across the cyc

These two modifiers work the same for Exit. When the duration is infinite, currently the only option is immediate exit. Once you have a duration or number of cycles, you can cascade the exit

RELATIVE VALUES

Absolute effects can have relative values as levels. This allows channels to change relative to their background state.

- Background – the background state
- + Relative Value
- Relative Value
- + Relative %
- Relative %

[403] [Enter] {Absolute} [Label] +30 Intensity [Enter]

create a new absolute effect

Select the level of action 1, [+] [30] [Enter]

when the channels do this action, they will go +30 from the background value

Action	Param	Step		Dwell	Level
		Time	Time		
1		(1)	1	0	30.0
2		(1)	1	0	Bkgrd

[Live] [101] [Thru] [105] [Effect] [403] [Enter]

The lights fade from their background (0) to 30 above their background (30)

[At] [50] [Enter]

The lights fade from their background (50) to 30 above their background (80)

[Effect] [Effect] Select the level of action 2, [30] [Enter]

The lights go from a level of 30 to 30 above their background (80)

Select action 2, [At] [Enter]

Change the level of action 2 back to background

We want to create an effect that sets the lights to half of where we currently are. Any guesses on how to do that?

[404] [Enter] {Absolute} [Label] Half Intensity [Enter]

create a new absolute effect

Select the level of action 1, [/] [50] [Enter]

when the channels do this action, they will go +30 from the background value

[Live] [101] [Thru] [105] [Effect] [404] [Enter]

Channels fade from their background (50) and go up half that value (75). This wasn't what we wanted!

If we look in the editor, we will see that the level for action 1 reads (+) 50 percent. We need it to be negative!

[Effect] [Effect] Select the level of action 1, [-] [/] [50] [Enter]

Display reads (+) -50 %. Channels fade from their background (50) to half their background (25)

REFERENCES IN ABSOLUTE EFFECTS

One of the powerful things about absolute effects is that the levels of the actions can be references (palettes/presets) you have already created. We are working an event for the 4th of July! So of course, we need to make a Red, White, and Blue effect.

RED, WHITE, AND BLUE EFFECT

[405] [Enter] {Absolute} [Label] R/W/B [Enter]	create a new absolute effect
On the Magic Sheet, Select the Cyc Tab along the left-hand side	
Select the Level of Action 1, [Red] (CP9021)	Action 1 is now the red color palette
[Page ▼] to the Level of Action 2	
[Open] (CP)	Action 2 is now the open state
[Page ▼] to the Level of Action 3, [Blue] (CP9033)	
[Live] [↑ Cells] (G303) [Effect] [405] [Enter]	Both the intensity effect (402) and this color effect are running.
[Group] [303] {Intensity} [Effect] [Enter]	
Or [Effect] [402] [Stop Effect] [Enter]	Stops just the intensity effect
This effect has a lot of pink in it for something that should just be red, white, and blue! Let's make it snap between our three colors instead	
[Effect] [Effect] {Action} [1] [Thru] [3] Enter]	Selects all three actions at the same time
[Page ►] to the Time column, [0] [Enter]	change the time of all three actions to 0
[Page ►] to the Dwell column, [1] [Enter]	and the dwell to 1

		Step			
Action	Param	Time	Time	Dwell	Level
1		(1)	0	1	Red
2		(1)	0	1	Open
3		(1)	0	1	Blue

The lights now snap to each color, remain there for 1 second, and then snap to the next color.

ANOTHER MODIFICATION

What if we want the lights to go to 70 while they do this? We don't know when we are going to use this effect...maybe we are going to record a cue or maybe we are doing our show live and will be manually applying it. No matter what, we want the background state of the channels to go to full.

Have Action 1 selected or highlighted

{Action} [1] {InsrtBefore} [Enter]

Inserts a new Action 1 and relabels the others 2 through 4

[Page ►] to the Time column, [0] [Enter], then Level [70] [Enter]

[Live] [↑ Cells] (G303) [Effect] [405] [Enter]

Reapply the effect

We previously had an effect that only affected the color parameters of the fixtures. We added intensity, but never applied the effect to the intensity of the lights. By reapplying, we are telling the effect to run on all applicable parameters

Action 1: The lights jump to 70, then the color is mathematically divided amongst the lights via the next actions and timing. Action 1 again: The lights stay at 70.

This may look like what we want but it isn't! We are giving more time to action 4 – blue. After the channels turn blue, they go back to action 1 which is to stay at 70. The lights stay blue...they haven't been told to change colors. 1 second after that action starts, action 2 goes and the lights snap to red. They spend 1 second in Red & Open, but 2 in Blue.

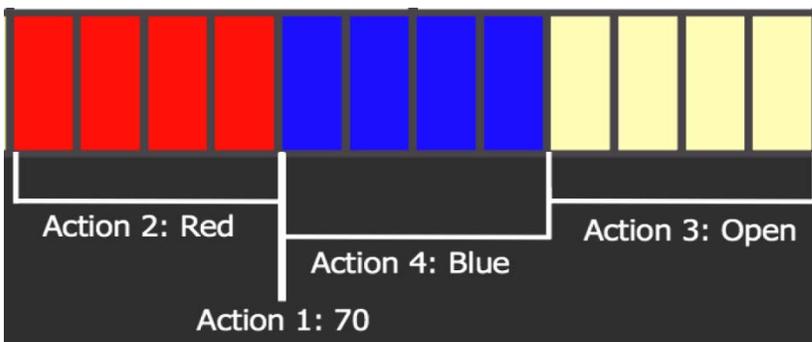


We want the lights to spend equal time in each color. How do we fix this?

[Effect] [Effect] {Action} [1] [Page ►] to the Step Time column, [0] [Enter]

Change the step time of action 1 to 0. Action 2 will start at the same time as action 1. Remember step time is the amount of time until the next action starts!

Channels will jump to 70 and Red, then Open, then Blue.



EXERCISE:

Noticed that blue looks dimmer than the other colors. When the channels are blue, the designer has asked us to make them full. The channels should remain at 70 when they are open and red.

Answer: Maybe add an action before Blue. The level should be 100. The Time and Step Time should be 0

		Step			
Action	Param	Time	Time	Dwell	Level
1		0	0	1	70.0
2		(1)	0	1	Red
3		(1)	0	1	Open
4		0	0	1	100.0
5		(1)	0	1	Blue

EXERCISE!

Let’s make another **absolute effect 406!** We are going to be busking (creating lighting live) some music and have been asked to make an effect that takes the channels in whatever color they are currently in, and snaps between red and that color. We would like it to be a little faster – an overall cycle time of 0.5 seconds. Go ahead and make that effect.

Answer: Use the magic sheets to find color palette 9021 – Red. That will be the level of action 1. Action 2 should remain as background. The time of both steps should be changed to 0. The dwell of both steps should be changed to 0.25

		Step			
Action	Param	Time	Time	Dw...	Level
1		(0.25)	0	0.25	Red
2		(0.25)	0	0.25	Bkgrd

Excellent! Let’s look at that on the cyc.

[Live] [↑ Cells] (G303) [Effect] [406] [Enter]

We want this to go from red to Green.

[↑ Cells] (G303) [Green] (CP9027)

That doesn’t look great.

[Blue] (CP9033)

This effect is great because it can be applied on top of any color, including gradients! But now the designer wants it to bounce back and forth – like a red dot

[Effect] [Effect] {Attributes} {Bounce}

Not quite right!

That’s because the effect is bouncing the actions. So now it goes action 1 – red. Action 2 – background. Action 1 – Red. And so on.

We want the effect to go across all the channels and bounce back.

Deselect {Bounce} and select {Bounce Channels}

That’s it!

[Live] [Record] [401] [/] [8] [Label] Bouncing Red [Enter]

EXERCISE!

We want a white sparkle effect (407), where the lights jump to full and white from wherever they are, linger for a second, and then jump back to what they were doing. It's a sparkle so it should have an element of random!

When done, apply it to the cyc cells. Also apply it to the D60s (Group 200) – play around with offsetting.

Set them in a color at a dim level and apply the effect. Record Q401/9 labeled white sparkle

Action	Param	Step		Dwell	Level
		Time	Time		
1		0	0	1	100.0
2		(1)	0	1	Open
3		(5)	0	5	Bkgrd

Answer: The key here is that it should have a random rate. I did 100 > 200. You could also make the choice to have a random group. I chose not to so that I can do that with my grouping...I may want to use this sparkle across a sequential selection.

CREATE A COMPLEX ABSOLUTE EFFECT

A common effect asked for is a flyout. A flyout has four elements

1. Lights turn on
2. Lights tilt up
3. Lights turn off
4. Lights reset to tilted down

FLYOUT USING PRESETS

There are two ways to make this effect. The first is using presets.

[Live] Movers Tab [FOH Spots] (G102) {Pan} [0] {Tilt} [0] [Enter] [Out]

[Group] [102] {Focus} {Intensity} [Record] [Preset] [408.1] [Label] Down/Off [Enter]

[FOH Spots] (G102) [Full] [Enter]. point them at the top of the proscenium

[Group] [102] {Focus} {Intensity} [Record] [Preset] [408.2] [Label] Up/On [Enter]

[Effect] [Effect] [408] [Enter] {Absolute} [Label] Preset Flyout [Enter]

Action 1 should be the Down/Off Preset (408.1)

Action 2 should be the Up/On Preset (408.2)

[Live] [FOH Spots] (G102) [Effect] [408] [Enter]

Both have the default time of 1 and dwell of 0

This isn't quite what we want

We can see the lights fade out as the move down to reset. They need to go out first

[Effect] [Effect] {Action} [3] [Enter] [Enter]

Time and Step Time = 0.5, Dwell = 1, Level = 0

Action	Param	Step		Dwell	Level
		Time	Time		
1		(1)	1	0	Down/Off
2		(1)	1	0	Up/On
3		0.5	0.5	1	0.0

As soon the lights finish turning off, they reset to the down position – action 1. The intensity of 0 dwells for 1 second as that reset happens in 1 second.

This is a fun effect to see with all the lights doing this together. How do we do this?

{Grouping} {1} [Enter]

[Live] [FOH Spots] (G102) [Stop Effect] [Enter] [Home] [Enter]

FLYOUT USING PARAMETERS

We can specify parameters the effect applies to. You can do that on a per effect basis in the overall params section, or on a per action basis.

The second way to make this effect is to use absolute values. The advantage is this allows any lights with Tilt & Intensity to use this effect.

[Effect] [Effect] [409] [Enter] {Absolute} [Label] Relative Flyout [Enter]

In Params on the right of the CIA, select Intens & Tilt

REMEMBER OUR 4 STEPS TO A FLYOUT!

1. Lights turn on in their current location

Action 1: Param = Intens, Level = 100

Lights on in current position.

Step Time = 0,

We want it to have its background tilt at the same time

Time = 0

We want it to snap

Dwell = 4

The overall time tilting will be 4 seconds. The lights should stay on this whole time

Action 2: Level = Bkgrd, Param = Tilt

Step Time, Time, and Dwell = 0

Ensures Tilt is at its background level

2. Lights tilt up

Action 3: Level = - 100, Param = Tilt

Time = 3.5.

A nice movement up, not too fast

Dwell = 0.5.

Let it linger at the top for a bit. Gives the effect a breath

Step Time = 2.5.

A second before it reaches the top, begin the next action and start fading out

3. Lights Turn off

Action 4: Level = 0, Param = Intens

Time = 0.5

Quick out

Dwell = 1.5

Gives the effect a breath and the lights time to reset

Step Time = 0.75

The lights are comfortably off. Start the next action and reset

4. Lights reset

Action 5: Level = Bkgrd, Param = Tilt

Time = 0

Move as fast as possible

Dwell = 0

This doesn't need a dwell. Action 2 reinforces the lights tilt at background

Step Time = 1.5

Gives the lights time to reset

[Live] [FOH Spots] (G102) [Effect] [409] [Enter]

Cyc Tab - [↑ Cells] (G303) [Stop Effect] [Out]

Sparkle effect still running from exercise

LED Fixtures Tab - [Top D60] (G200) [Stop Effect] [Out]

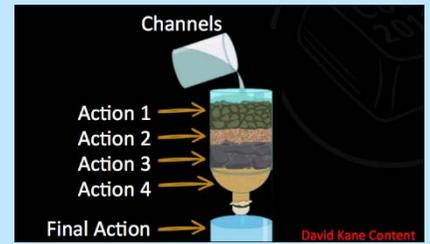
Sparkle effect still running from exercise

[Record] [401/10] [Label] Flyout [Enter]

BREAK MODE

Break Mode is an effects attribute. When the number of channels is greater than the number of steps in an effect, each channel will cycle through each step and then wait in the last action until the last channel enters the last action.

- Each channel does each action, then waits and repeats
- The last action becomes the “background” as the other actions chase over.



TRAILING STAR

Let’s say the designer wants an effect that looks like a star across a row of the back-wall pixels. They want it to snap to pink front and then fade to a longer yellow tail, before fading into the background

[Effect] [Effect] [410] [Enter] {Absolute} [Label] Trailing Star [Enter]

Action 1: Level = Pink (CP 9038). Time = 0, Dwell = 1

Action 2: Level = Yellow (CP 9025). Time = 1, Dwell = 1

Action 3: Level = Bkgrd. Time = 1, Dwell = 1

[Live], on the Cyc Tab, click the Pixel Wall Expand Button on the far right

[All] (G700) [Full] (IP5) [Collapse] [Blue] (CP9033)

Turns all the pixels to full and in blue

Back on the Pixel Wall MS, [→] (G732) [Effect] [410] [Enter]

Yikes! That wasn’t what we wanted! Each channel is cycling through pink, yellow, then background evenly. They aren’t waiting for all channels to complete the effect.

[Effect] [Effect] {Attribute} {Break Mode}

That’s a short little tail!

To increase the yellow, add more yellow steps.

Action 1: Level = Pink (CP 9038). Time = 0, Dwell = 1

Action 2 - 6: Level = Yellow (CP 9025). Time = 1, Dwell = 1

Action 7: Level = Bkgrd. Time = 1, Dwell = 1

[Live], [→] (G732) [Effect] [410] [Enter]

Great, it has a longer yellow tail now, but it feels way too slow for a trailing star

[Effect] [Effect] {Cycle Time} [0.5] [Enter]

If you’d like to do this on more than 1 row of pixels, make duplicate effects.

[Effect] [410] [Copy To] [410.1] [Enter] [Label] Trailing star 2 [Enter]

[Live] [↗] (G783) [Effect] [410.1] [Enter]

[Record] [11] [Label] Trailing Star [Enter]

Action	Param	Step Time	Time	Dwell	Level
1		(0.15)	0	0.15	Pink
2		(0.31)	0.15	0.15	Yellow
3		(0.31)	0.15	0.15	Yellow
4		(0.31)	0.15	0.15	Yellow
5		(0.31)	0.15	0.15	Yellow
6		(0.31)	0.15	0.15	Yellow
7		(0.31)	0.15	0.15	Bkgrd

Unit 4 – Relative Effect

WHAT IS A RELATIVE EFFECT?

A relative effect is a mathematical offset from the current state of a channel parameter. Like absolute effects, they can be applied to any channel that has the parameter specified in the effect, or directly to a channel parameter via the command line.

There are three type of Relative Effects: Focus, Color, and Linear. There are 18 “stock” effects preprogrammed in Eos: Effects 901 – 918. All are relative.

LINEAR EFFECTS

A Linear Effect is a linear diagram or waveform applied to a parameter over time. It does not have to be parameter specific. It can just be a linear diagram that can be applied to any parameter

[Effect] [Effect] [411] [Enter] {Linear} [Label] Intensity Wave [Enter]

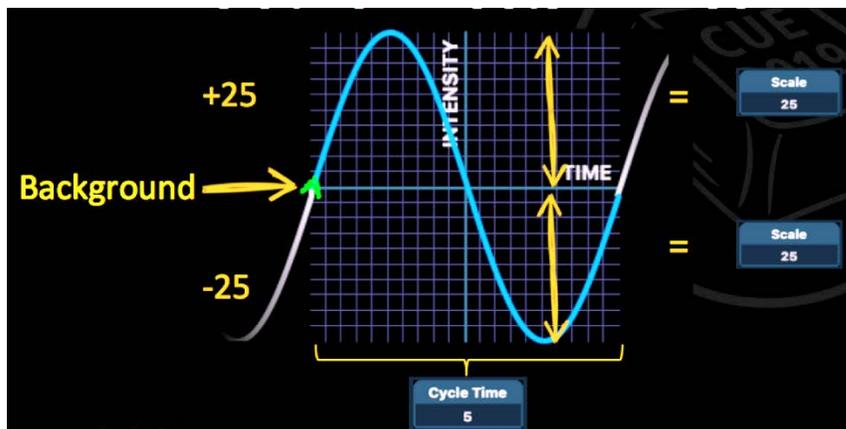
[Live], [All] (G700) [Stop Effect] [Enter] [FOH Spots] (G102) [Stop Effect] [Enter]

The default for a relative effect is intensity over time

The default waveform is a sine wave. The values fade up to its highest value, and immediately after peaking fades down to its lowest value and continues in that way.

The value of the parameter at the X axis (Time axis) is the background. The channel will follow the waveform above and below that point based on the scale of the effect

Scale allows you to say how far away the effect moves from the current state of the light. The default is 25



[Live], [31] [Thru] [47] [Effect] [411] [Enter]

Applies the effect

[Open] (CP)

Notice how the channels are going from 0 to 25 to 0, and then holding there before starting over

The lights are trying to go 25 above and below the background. They are going from 0 to +25 (25) down to 0 – 25 (still 0). So, they are just stopping at 0.

[Full] [Enter]

The same issue is happening but on the positive side of the effect. The lights are staying at full for half the effect, before fading down to 75 and back up

[At] [50] [Enter]

The lights are going from 25 to 75

[At] [0] [Enter]

It is easier to see the grouping & trail this way

[Effect] [Effect], in Effect 411 {Scale} [50] [Enter]

The lights are going from 0 to 50

{Scale} [10] [Enter]

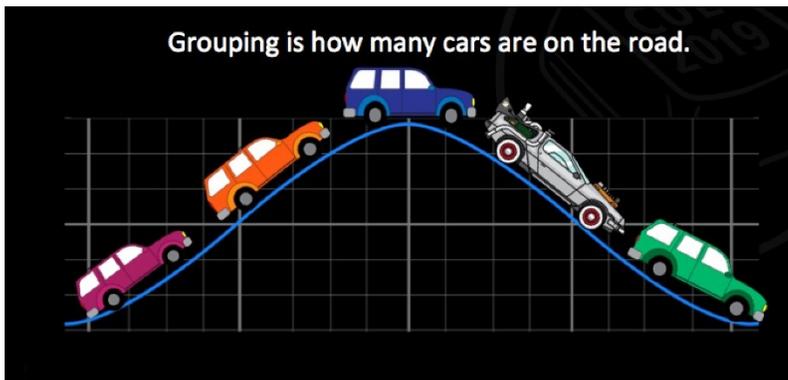
The lights are going from -10 to 10.

{Scale} [25] [Enter]

To reset

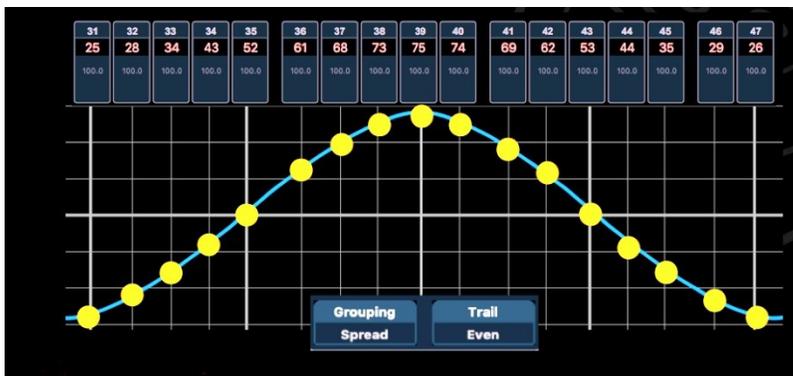
GROUPING

To determine how the channels currently running the effect are grouped. This is only for absolute and relative effects



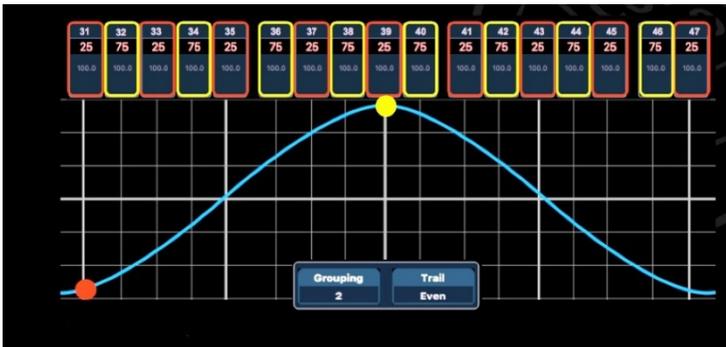
Defaults to Spread. Every channel the effect is applied to will act as an individual element, moving through the effect sequentially based on the channel selection order. Note: subgrouping still holds. A subgroup in a group will act as an individual channel.

You can do grouping 0 through 2000. Grouping 0 is spread.



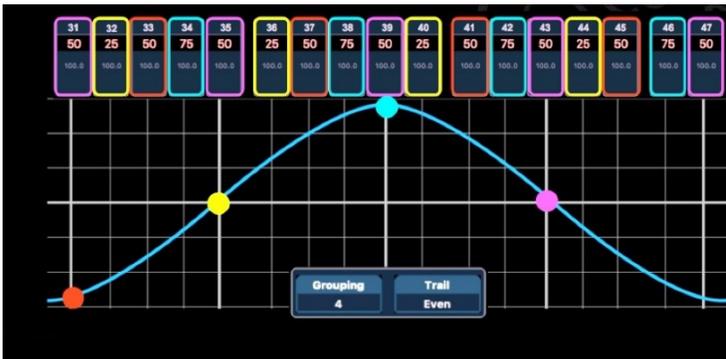
Set {Grouping} to {2}

Every other channel (or subgroup) running the effect will move together through the effect – 2 cars evenly divided across the effect



Set {Grouping} to {4}

Every fourth channel (or subgroup) running the effect will move together through the effect – 4 cars evenly divided across the effect



Set {Grouping} to {20}

Every twentieth channel (or subgroup) running the effect will move together through the effect – 20 cars evenly divided across the effect

This grouping number is larger than the number of channels in the effect. The effect still leaves the space for those extra 3 groups. This makes a larger



Set {Grouping} to {1}

Every channel running the effect will move together through the effect – 1 car

Set {Grouping} back to {Spread}

TRAIL

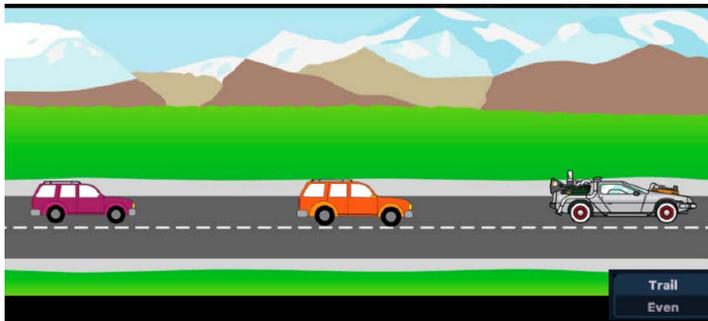
Trail determines how channels are to follow each other through the effect.

- It is a percentage of the cycle time
- It can be any value from 0-200% - what percentage through the effect the first channel/group is before the next one starts
- When the first group is n% through the effect, the second group will start, and so on through the remaining groups. The groups trail n% behind each other as a percentage of the cycle time
- Can also be even or solo

Trail is like traffic! How far apart the channels, or “cars” are following each other on the road.

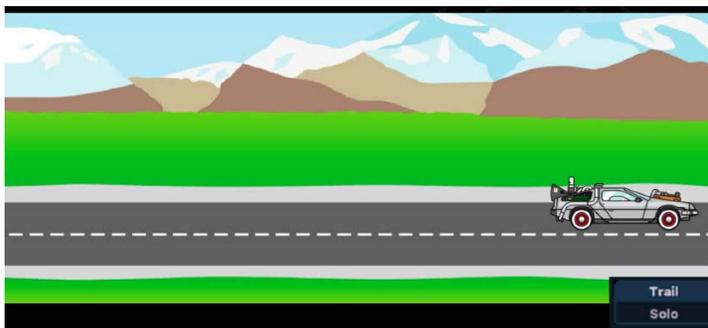
EVEN

The groups will be distributed evenly throughout the effect pattern. Cycle time of the effect divided by number of groups of channels



SOLO

The first group will do the entire effect on its own. The next group will start when the previous has finished. One at a time!



50%

When the first group is 50% through the effect, the second group will start, and so on through the remaining groups. The groups trail 50% behind each other as a percentage of the cycle time



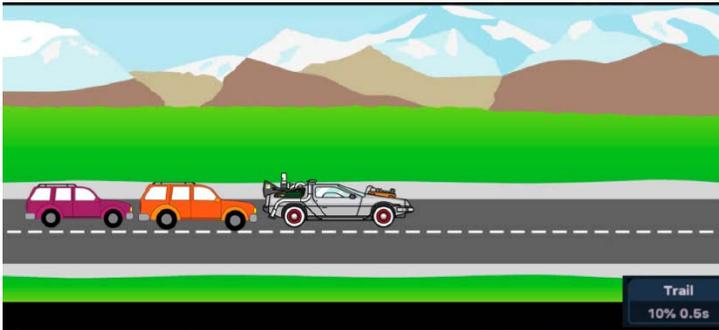
25%

When the first group is 25% through the effect, the second group will start, and so on through the remaining groups. The groups trail 25% behind each other as a percentage of the cycle time



10%

When the first group is 10% through the effect, the second group will start, and so on through the remaining groups. The groups trail 10% behind each other as a percentage of the cycle time



Set {Trail} back to {Even}

[Live], [31] [Thru] [47] [Sneak] [Enter]

If the effect is only applied manually, sneak will stop it

Effect 411 can be applied to more than just a channels' intensity. If no parameter is specified, it will default to intensity

[Side Spots] (G105) [Full] [Enter]

[Side Spots] (G105) {Tilt} [Effect] [411] [Enter]

Apply the effect to their Tilt parameter - is following the sine waveform!

[Side Spots] (G105) {Zoom} [Effect] [411] [Enter]

Apply the effect to zoom - is also following the sine waveform!

[Side Spots] (G105) [Sneak] [Enter]

CREATE A LINEAR FLICKER EFFECT

[Effect] [Effect] [412] [Enter] {Linear} [Label] Intensity Flicker [Enter]

{Edit}

To access the form editor

We want to change the pattern to a Flicker! There are several premade.

{Patterns}

The NTX Flickers are great for this. There are three...NTX Flicker, NTX Fire, and NTX Lightning.

Second row, last three options: Toggle between these three.

Select NTX Flicker (first of the three)

This flicker defaults to being in the top half of the grid, above time. This means it will only flicker above the background level. We would like it to flicker above and below the background level

{Move} and drag the entire effect down so it is centered on the X axis

{Form} and drag up and down

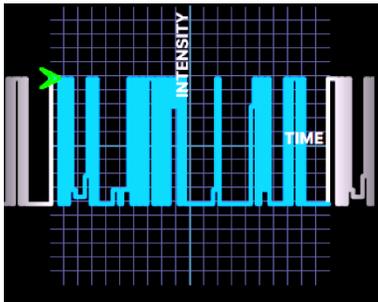
To alter the form of the effect – expand or condense it

{Undo} {Redo}

Can undo and redo changes made

Don't forget to hit {Apply}

You will lose the changes if you don't hit apply



Flickers like to be random! Let's change some attributes

{Attributes} {Random Group}

{Random Rate} [50] [Thru] [200] [Enter]

[Live] [OH Spots] (G103) [Effect] [412] [Enter]

[USC X] (FP112) [Medium Zoom] (BP9043)

Play with intensity on the wheel to see what feels good.

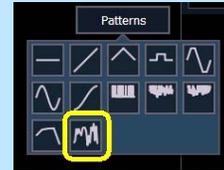
Maybe around 20

[Record] [12] [Label] Spots Flicker [Enter]

[OH Spots] (G103) [Stop Effect] [Enter] [Home] [Enter]

CREATE LINEAR FX 413 – INTENSITY FIRE FLICKER

We would like to make another flicker effect. This time, we don't want it quite so jumpy. It's going to function as a less intense candle flicker and could also be used as a fire flicker. Let's look at some of our other options.



[Effect] [Effect] [413] [Enter] {Linear} [Label] Intensity Fire Flicker [Enter]

{Edit} {Patterns} {Random (Many Points)} Bottom row, second option

This is a great start! What if we want to edit it a little more specifically?

{Select} and choose one point on the drawing

White dot turns red

{Move} and drag up and down

Move the point up to create a higher peak

{Select} and choose two points on the drawing

Two red dots in line

{Subdivide}

Adds a point halfway between two points



{Select} and choose new point and {Remove}

To get rid of the new point

Don't forget to {Apply}!

[Live] [OH Spots] (G103) [Effect] [Enter] [Out]

[FOH Spots] (G102) [Effect] [413] [Enter] [At] [50] [Enter]

Tip them up to the cyc so we can see them

LINEAR EFFECTS WITH NON-INTENSITY PARAMETERS

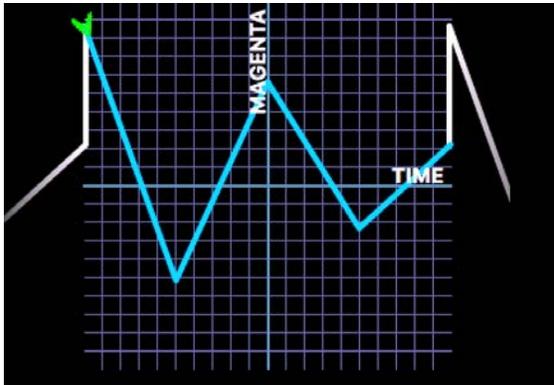
Other effective fire flicker effects involve color parameters. In RGB lights, quickly adjusting the green parameter will allow the fixture to flicker to different hues of red, orange, and yellow. Magenta will do the same in CMY Effects.

[Effect] [Effect] [414] [Enter] {Linear} [Label] Color Fire Flicker [Enter]

{Parameters} {Green} {Magenta} [Enter]

{Edit} {Clear All} {Draw} draw a spikey effect {Smooth}

To draw your own pattern – don't like it?



{Patterns} {Random (Many Points)} {Random (Many Points)}...

Keep clicking until you find one you like!

{Apply}!

The scale is currently default 25. That's large to apply to magenta.

{Scale} [10] [Enter]

More subtle

As this is another flicker, Let's do some random!

{Attributes} {Random Rate} [50] [Thru] [200] [Enter]

[Live] [FOH Spots] (G102) [Orange] (CP9022) [Effect] [414] [Enter]

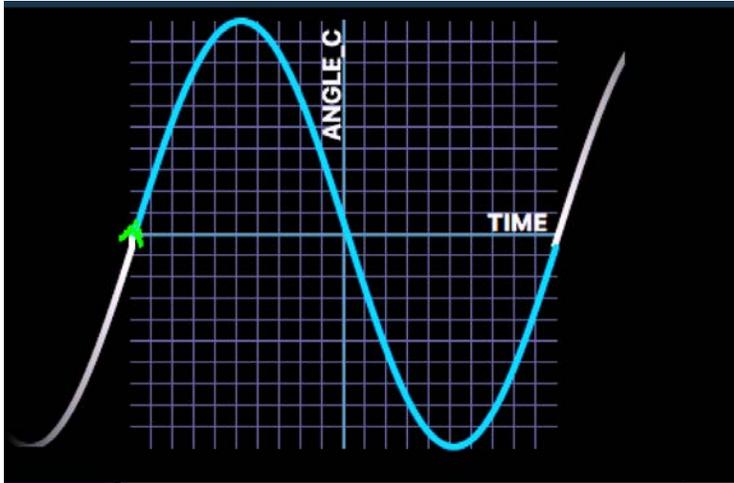
Automatically applied to magenta

EXERCISE

This is looking good! We often find fire effects are more realistic if there is movement on the top as if the fire is growing and shrinking. Let's play with a shutter effect! The top shutter is Shutter A

Create effect 415 that moves the top shutter in/out and waves the angle, so it looks like the top of the beam is waving like the fire growing/shrinking.

Possible Answer: Create linear effect 415 labeled Shutter A Wave – All we must do is change the parameter to Angle A and Thrust A



[Live] [FOH Spots] (G102) [Effect] [415] [Enter]

The top shutter waves in and out, adding to the feeling of fire

What's one more thing we could add? Hint – it isn't an effect

Don't forget normal non intensity parameters! Sometimes the simplest things are the most effective.

[Live] [FOH Spots] (G102) [Fire] (BP9021.6)

Add the gobo to the scene

[1 Rotate] (BP9122) [>] (BP9127)

Slowly rotate to the rights

[E-40] (BP9023)

Soften the edge a bit

[Record] [401] [/] [13] [Label] [Fire] [Enter]

LET'S MAKE ONE MORE LINEAR EFFECT!

[Effect] [Effect] [416] [Enter] {Linear} [Label] Pan Wave [Enter]

{Parameters} {Pan} [Enter]

[Live] [FOH Spots] (G102) [Home] [Enter] [Stop Effect] [Enter]

Stops all the effects

[FOH Spots] (G102) [Effect] [416] [Enter]

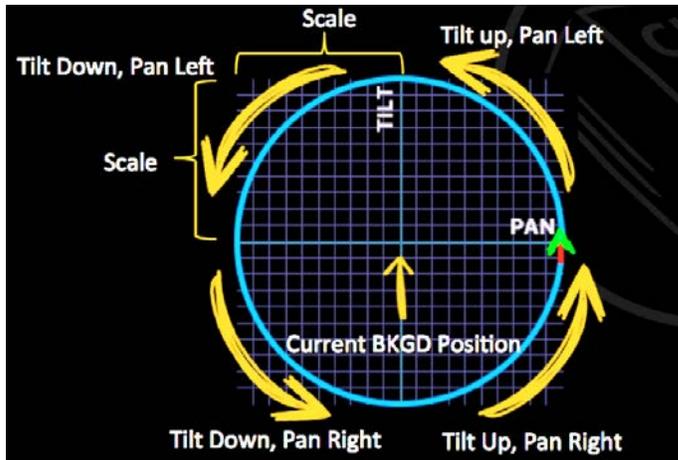
Only Pan is affected, moving positive and negative relative to its current location

It is a great effect to make the lights look like they are scanning

FOCUS EFFECTS

A Focus Effect impacts a channel's pan and tilt parameters. It is Pan/Tilt instead of a parameter over time. This creates a shape on the graph that the fixtures follow. The Default is a circle

[Effect] [Effect] [417] [Enter] {Focus} [Label] Circle [Enter]



Scale applies to a focus effect just as it does to a linear effect. In the focus effect, scale is how much positive & negative pan/tilt is applied to the channels.

[Live] [FOH Spots] (G102) [Stop Effect] [Enter]

Stop all the effects on the FOH movers

[Effect] [417] [Enter]

[Effect] [Effect] {Scale} [10] [Enter]

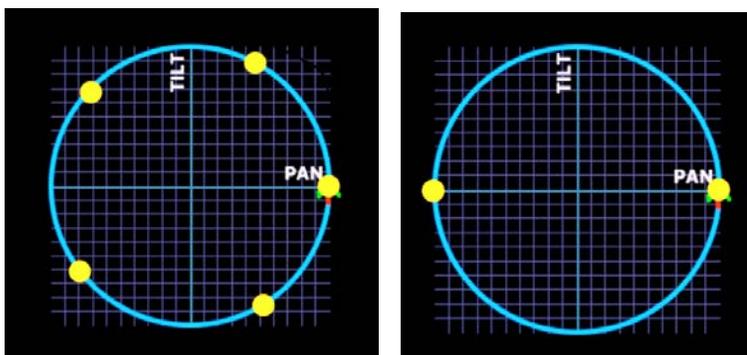
The fixtures move less – not as far away from their background position

[Live] [FOH Spots] (G102) [Singer] (FP118)

Now circle around the singer – their new background position.

GROUPING

When the grouping is spread, the channels travel as individual “cars” around the effect, as shown on the left below.



Set {Grouping} to {2}

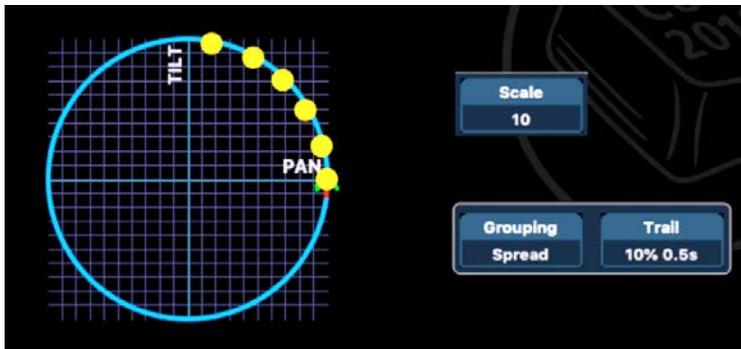
When the grouping is 2, the channels work in two groups evenly (if the trail is even) around the effect, as shown on the right above.

Set {Grouping} back to {Spread}

TRAIL

Remember, trail is like the traffic. It is how close the "cars" are following each other

Change {Trail} to {10% 0.5s}



Change {Trail} to {Even} [Enter] and {Scale} to [25] [Enter]

[Live] [FOH Spots] (G102) [Stop Effect] [Enter]

Stop all the effects on the FOH movers

[Record] [401] [/] [14] [Label] Singer [Enter]

[FOH Spots] (G102) [Effect] [417] [Enter]

The fixtures move less – not as far away from their background position

[Record] [401] [/] [15] [Time] [5] [Label] Singer Circle [Enter]

Now circle around the singer – their new background position.

MORE ENTRY/EXIT ATTRIBUTES

ENTRY: Entry refers to how the channels enter/start the effect.

- **Cascade or Immediate:** channels enter according to the trail and cycle time values or all channels enter the effect instantaneously.
- **Fade By Size:** This is the default. The effect will achieve its full value as allowed by the effect using the entry time. In relative effects, this refers to scale, starting at 0 and growing to its full scale using the entry time.
- **Fade By Size & Rate:** achieves its full values as allowed by the effect and ramp up from a rate of 0 to full speed using the entry time
- **Fade By Rate:** increases the rate of the effect as it enters. The rate will be 0 and increase to effect value using the entry time
- **Entry Time:** the length of time for channels to enter the effect

EXIT: Exit refers to how the channels exit or stop the effect.

- **Fade By Size & Rate:** when the effect is exited, channels will stop running the effect and return to their background state using the exit time.
- **Fade by Size:** values will return to their background state using the exit time. In relative effects, this again refers to scale, the scale will be at the effect value and shrink to 0 using exit time
- **Fade by Rate:** decreases the rate of the effect as it exits
- **Stop and Hold:** channels will halt and stay exactly where the effect left them (We looked at this in step-based effects!)
- **Stop and Fade:** channels will stop running the effect where they are and fade to their background state using the exit time. (Again, we looked at this in step-based effects!)
- **Exit Time:** the length of time for channels to exit the effect

LET'S LOOK AT THE DIFFERENT STYLES OF ENTRY

[Live] [Go To Cue] [14] [Enter] ► (Go)	Lights start the effect at full speed, gradually moving from a scale of 0 (on the singer) out to its effect scale over 5 seconds
Change {Entry} to {Fade by Rate} [Go To Cue] [14] [Enter] ► (Go)	Lights jump out to their effect scale and ramp up from stopped to the effect rate over 5 seconds
Change to {Fade by Size & Rate} [Go To Cue] [14] [Enter] ► (Go)	Lights move from a scale of 0 (on the singer) to their effect scale, ramping up from a rate of 0 to the effect rate over 5 seconds

EFFECT FORM EDITOR WITH FOCUS EFFECTS.

[Effect] [Effect]	
[418] [Enter] {Focus} [Label] [Label] Focus Pattern [Enter]	2 nd Label to clear default label
[Live] [FOH Spots] (G102) [Effect] [418] [Enter]	
[Effect] [Effect] {Edit}	
{Patterns} {Infinity} (Figure 8) Second row, second option	
{Scale} select the object and resize it	Careful! If you reach the edges of the graph, the shape flattens out!
{Rotate} select the object and adjust the angle of the object	
{Mirror Hor} {Mirror Vert}	Shape is mirrored horizontally or vertically
{Apply}!	

ENCODERS

Your encoders have some attributes on them! Play with them!

- **Scale**
- **Cycle Time**
- **Horizontal** – Horizontal shape. It will flatten or elongate the shape horizontally
- **Vertical** – Vertical shape. It will flatten or elongate the shape vertically (press and hold shift and horizontal will change to vertical)
- **Axis** – Rotate

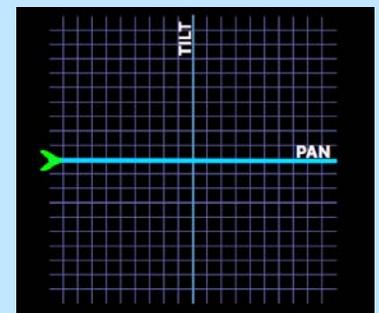
Edit the effect again. Clear out the pattern and draw your own shape!

Don't forget to hit **{Apply}!**

EXERCISE:

We made effect 416, Pan wave, earlier using a linear effect. We could have also made it using a focus effect with Pan/Tilt instead. Make an effect 416.1 that makes this pan wave as a focus effect. Apply this effect on the FOH Movers – Group 102. After

Answer: Straight Line Focus Effect. This effect is applied to pan and tilt, forcing it to just do a pan wave. With the linear pan effect, it is only applied to pan. A separate effect can be applied to tilt



COLOR EFFECTS

A color effect impacts a channel's color parameters. Hue and saturation offsets are represented in the graph. The default is a circle

Word of warning! You must enable create virtual HSB in the settings for these effects to work!

[Effect] [Effect] [419] [Enter] {Color} [Label] [Label] Color FX [Enter]

2nd Label to clear default label

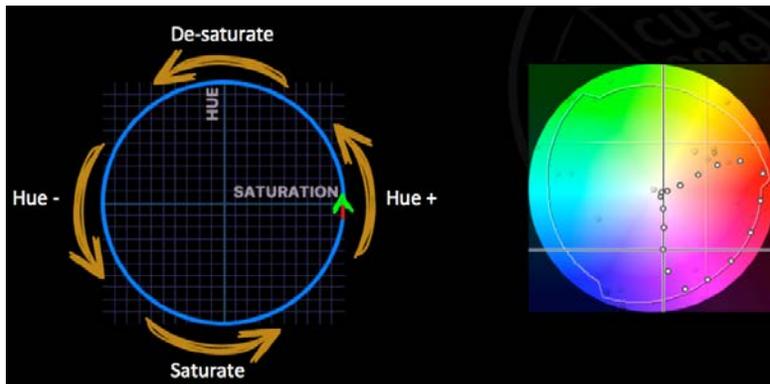
[Live], [LED Fixtures], [HS CSpot >] (G220) [HS CSpot <] (G240) [Full] (IP5)

[Effect] [419] [Enter] [Blue] (CP9033)

A nice cool effect centered around blue. It looks like water, but predictable...

[Effect] [Effect] {Grouping} [5] [Enter]

Grouping adds a bit more variety



SAME EFFECT ON MOVERS

[HS CSpot >] (G220) [HS CSpot <] (G240) [Stop Effect] [Enter] [Out]

Stops effects on the FOH Movers and turns them off

[Movers] [OH Spot (Sola 750)] (G103) [Full] (IP5) [House] (FP116)

[Effect] [419] [Enter]

This is a multicolored pastel look. Maybe more vibrant and fun.

[Lavender] (CP9035)

A little more like Cotton Candy!

RAINBOW EFFECTS!

There are two rainbow effects in the console already: Effect 917 – Rainbow RGB and Effect 918 – Rainbow CMY. They are relative effects using the named parameters.

EFFECT 917 – RGB

This effect takes Red, Green, and Blue and fades them to -100 of current value, dwells there, and then fades up to 0. The Eos stock effect staggers these parameters to create a rainbow. If we were to make this effect, all three would be affected together, essentially making an intensity effect doing color



[Live],[Cyc], [Cyc Top↑](G301) under Home, [Color](M103)

[↑Cells](G303) [Full] [Enter] [Effect] [917] [Enter]

A rainbow effect starts on the cyc. But it looks pastel

Amber remains at full. This is an RGB effect, so it only affects the parameters red, green, and blue

[Cyc Top↑](G301) {Amber} {Min}

A more saturated RGB effect now

Remember, this is relative! Let's play around with the color

Workspace 2 on monitor 1 (CIA Monitor)

(has the color picker on it)

Select colors on the color picker

The cyc changes relative to its current color

EXERCISE:

These rainbow effects are relative and only apply to specific parameters. I would like a Rainbow effect 420 that will work on all the color changing lights in this rig. I would like this effect running together on the cells of entire cyc (top & bottom) from the outside to the inside. Record Cue 401/17 – Rainbow. Make sure the OH Spots (Group 103) remain in the house running their effect.

Possible Answer: Absolute effect using color palettes. All the fixtures in this rig have data in the color palettes and this effect will work on everything recorded in these palettes. It will always be rainbow – it is not relative to the current color of the fixtures

Action	Param	Step			
		Time	Time	Dwell	Level
1		(1)	1	0	Red
2		(1)	1	0	Orange
3		(1)	1	0	Yellow
4		(1)	1	0	Green
5		(1)	1	0	LT Blue
6		(1)	1	0	Blue
7		(1)	1	0	Mag

Turn on the cyc bottom (Group 304) and apply this effect to the cells >> group (group 315). This mirrors the effect in on the cells of the top & bottom together. Record Q401/17 Rainbow

Unit 5 – An Effects Library

Programmers will typically have a file that contains effects they have built. This is referred to as a library. They are almost exclusively relative & absolute effects so they can apply to any fixture type that is encountered.

There are four basic forms that are standard in effects. They can be built in relative and absolute effects.

At their default, relative & absolute effects with the same form will look different from each other unless attributes of the effect are changed.

- Cycle Time

The absolute effect will default to 2 seconds – there is 1 second per action, and 2 actions. This effect will be faster than the relative effect unless changed

The relative effect defaults to 5 seconds. This effect will be slower than the relative effect unless changed

- Level

The absolute effect defaults to the levels 0 and background. This effect will go between 0 as the first action, and the background as the second unless changed

The relative effect defaults to the waveform having positive & negative intensity. It will go 25 (default) above and below the background level unless changed.

STANDARD FORMS

WAVE/SINE

In this form, the channels fade between levels

RELATIVE WAVE/SINE

[Effect] [Effect] [421] [.] [1] [Enter] {Linear} [Label] Wave Rel [Enter]

fades between 25 points above & 25 points below the background

Change the grouping to 1

The effect is easier to see

ABSOLUTE WAVE/SINE

[Effect] [Effect] [421] [.] [2] [Enter] {Absolute} [Label] Wave Abs [Enter]

fades between 0 and background.

It is a fading wave effect because the time of each action is 1 and the dwell is 0 – the actions fade in 1 second before immediately fading to the next action in 1 second.

Change the grouping to 1

The effect is easier to see



STEP/SQUARE

In this form, the channels snap between levels

RELATIVE STEP/SQUARE

[Effect] [Effect] [422] [.] [1] [Enter] {Linear} [Label] Step Rel [Enter]

fades between 25 points above & 25 points below the background

{Edit} {Clear All} {Draw}, draw a line starting Top left to Top centerline, then to Bottom centerline and finish Bottom left

Draw a single step down

{Apply}!

The result is a square wave

Change the grouping to 1

The effect is easier to see

ABSOLUTE STEP/SQUARE

[422.2] [Enter] {Absolute} [Label] Step Abs [Enter]

If the lights should step to each value, what should the timing be?

Both actions should have a Time of 0 and a Dwell of 1

Change the grouping to 1



RAMP

In this form, the channels ramp to the first level and snap to the second

RELATIVE RAMP

[423] [.] [1] [Enter] {Linear} [Label] Ramp Rel [Enter]

{Edit} {Patterns} {XY Slope} (first row, second option)

A pattern exists for this

{Apply}!

Change the grouping to 1

The effect is easier to see

ABSOLUTE RAMP

[423] [.] [2] [Enter] {Absolute} [Label] Ramp Abs [Enter]

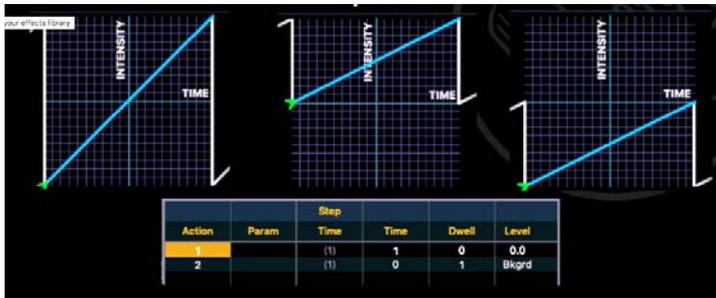
If the lights should first fade on and then immediately snaps off, how do we do that?

Action 1 should have a Time of 1 and a Dwell of 0

Action 2 should have a Time of 0 and a Dwell of 1

Fades from 0 to background, then ramps down to 0 and pops up to the background

Change the grouping to 1



PULSE/BURST

In a Pulse/Burst, the channels snap to their first level and fade to the second.

RELATIVE PULSE/BURST

[424] [.] [1] [Enter] {Linear} [Label] Pulse Rel [Enter]

{Edit} {Patterns} {XY Slope} (first row, second option)

Needs to start up and ramp down

{Mirror Hor.}

To reverse the ramp

{Apply}!

Change the grouping to 1

The effect is easier to see

ABSOLUTE PULSE/BURST

[424] [.] [2] [Enter] {Absolute} [Label] Pulse Abs [Enter]

If the lights should first fade on and then immediately snaps off, how do we do that?

Action 1 should have a Time of 0 and a Dwell of 1

Action 2 should have a Time of 1 and a Dwell of 0

Fades from 0 to background, then pops down to 0 and fades up to the background

Change the grouping to 1

[Live], [LED Fixtures], [Top D60] (G200) [50%] (IP3)

Under [Home] [Color] (M103)

Using the effects direct selects on monitor 1 workspace 1, apply each of these effects and see how they look

[Effect] [421] [.] [1] [Enter]

Applies the Wave/Sine Absolute effect

[Record] [401] [/] [18] [Label] Breathing Floor [Enter]

These four basic forms can be applied to any parameter!

In the absolute effects, action 2 is typically left as background. Action 1 can then be any palette or preset or an absolute value. It is very common to create color effects with one palette in each of these effects. For example, you could create these 4 absolute effects with the color palette 9021 – Red as action 1.

The relative effects are often applied to parameters like pan, tilt, zoom, and iris either via the command line or using parameters in the effect.

- Other relative focus effects that you may want in your library:
- Circle
 - Square
 - Triangle
 - Figure 8/ bally
 - Pan wave
 - Tilt wave

Unit 6 – Pre-existing File Effects

Let's look at the effects already in the file. This file was built to have a good base to start with, with a lot of common "effects library" effects.

FIRE SNAPSHOT 104 – EFFECTS



This is an example of a magic sheet laid out for effects. It is divided into parameter type, so the user can easily find what kind of effect they are looking for. There are relative & absolute effects mixed in. There is only one step-based effect just to have an example. Step based effects are most often show specific, and therefore are not typically included in a library page.

INTENSITY



The orange buttons on top are intensity effects. They are orange for consistency and organization...the console color for intensity palettes is orange. They are divided into 3 sections

- The first section, outlined in yellow, contains relative effects. We went over many of these. There are step, wave, pulse, and ramp effects as

well as a shimmer. There are two of each – one random, and one normal.

- The second section, outlined in red, contains absolute effects. Again, we went over these! We have the absolute version of step, wave, pulse, and ramp effects both random and not random. Additionally, there are some set values/bk (background) effects.
 - You might want different speeds of strobes
 - Might also want a twinkle or shimmer
- The last section, outlined in gold, are specifically flicker and strobe effects. There are both relative and absolute effects here.

FOCUS



The Green buttons in the left middle are Focus effects. Similarly, to the orange intensity effects, these are green because focus palettes are green in the console

All of these are relative effects with different shapes. Most are Focus Pan/Tilt Effects.

Pan Wave & Tilt wave are linear sine wave effects with the parameter/time.

BEAM



- The Blue buttons in the right middle are beam effects. Again, these buttons are blue because beam palettes are blue in the console
- These are all absolute effects going between two beam palettes – small to large. They could have also been created using a linear relative effect, so that they are relative to their background values instead of only going from their smallest size to largest size
- Like the Intensity effects, we have used two of our basic forms – wave and step. However, instead of using random, we have divided by grouping – spread and one

COLOR

The screenshot displays a comprehensive library of lighting effects organized into several functional areas:

- Intensity:** Includes effects like Int Step, Wave, Pulse, Ramp, Shimmer, Step, Wave, Pulse, Ramp, 100 / Bk, 50 / Bk, 0 / Bk, Int Strobe, Int Flicker, F/Int Waterfall, and Color Fire.
- Absolute:** Features effects such as Step, Wave, Pulse, Ramp, 75 / Bk, 25 / Bk, and Lightning.
- Special FX:** Contains effects like Star 1, Stars, Cop Siren FX, Int Fire, Bright, and Dim.
- Focus:** Lists effects like Circle, Square, Figure 8, Can Can, Triangle, PAN WAVE, Zoom Step, Zoom Wave, Iris Step, and Iris Wave.
- Beam:** Includes effects like Reverse Circle, Reverse Sqr, Spiral, Ballyhoo, Clover, TILT WAVE, Zoom Step 1, Zoom Wave 1, Iris Step 1, and Iris Wave 1.
- Color:** A large grid of color effects categorized by form (Relative, Absolute, Step, Wave) and grouping (Spread, One). It includes a 'Step Based' section with a 'D60 B/Y' effect.
- CONTROL:** Features faders for Focus Sz, Focus Rt, Int Rt, Color Rt, Beam Rt, Global Sz, and Global Rt, along with a 'STOP EFFECT' section for Focus, Int, Color, Beam, and Stop All.

Color has the most effects on this magic sheet. The top section has relative color effects. They are the stock effects included in the file. The buttons are gray because that is the color that color palettes are assigned in the console

To the right of the relative effects is one step-based effect. It is a bull's eye effect, where the D60s change color from the inside out, and then from the outside in.

The bottom section has four rows of color effects. All of these are absolute color palette/background effects. The color palette is the color of the button. The decimal reflects what form and grouping the effect is.

- The effect number reflects the number of the color palette
- The top two rows are step/square effects where the colors snap.
 - The top row (it says 0 on the left) has grouping of spread
 - The bottom row (it says 1 on the left) has a grouping of 1.
- The bottom two rows are wave/sine effects where the colors fade
 - The top row (it says 0 on the left) has grouping of spread
 - The bottom row (it says 1 on the left) has a grouping of 1
- A more complete version of this library would have all four forms – wave, step, pulse/burst, and ramp. They would also have more groupings. Often Spread, 1, 2,3 or 4, 8, and then a Random grouping.

SPECIAL FX



- This small box in the upper right corner has special effects. These are the effects in this file that are for a specific purpose, or contain more than one parameter
- Other types of effects might fall into this category that you might want in your library
 - Fire & Candle
 - TV/Film Flickers
 - Police Car
 - Chasing Rainbow
 - White Shimmers
 - Lightning
 - Paparazzi
 - Fireworks
 - White Strobes

CONTROL



This last section on the bottom left is a control section to control running effects. It contains virtual faders that are set to global effects rate & size. They are divided by color to show which type of effect they are filtered to. There is also an overall global effects override.

There are stop effect buttons under the corresponding faders. They are specific to the parameter the fader controls.

There is also a home faders button, which resets and homes these faders.

Unit 7 – Effects Fader Configuration

EFFECTS IN SUBMASTERS

RECORDING AN EFFECT IN A SUBMASTER

[Live], [Go To Cue] [401] [/] [18] [Enter] if not already there

[Live], [Movers], [FOH Spots] (G102) [Full] (IP5) [Singer] (FP118)

[Effect] [417] (Circle) [Enter]

[Select Last] [Record] [Sub] [401] [Label] Singer Circle [Enter]

[Sneak] [Enter]

[Sub] [401] [Enter] {Properties}, under Exclude, {Record}

Press & hold [Fader Page] [41]

Load Sub 401 onto fader 41/1 Top button or both bottom buttons

Bring up Sub 401

The fader proportionally controls the parameters of the lights (IFCB), the effect rate, and the rate size. This effect has an entry of fade by size and rate. If its entry was fade by size, the fader wouldn't control rate, only intensity and size

With the fader down, the bump button (bottom button) turns on and off the effect.

EFFECT SUB

An effect sub contains only effect information, not any other parameters. The bump button starts the effect and the fader controls the rate/size of the effect according to the entry behavior

Pull the fader down [Blind] [Sub] [401] [Enter]

There are values for all parameters of the channels, as well as FX 417 on the focus.

{Properties}, under Mode, {Effect}

An effect sub only has the effect information. All other channel values are removed

Bring up Sub 401

Nothing happens.

The effect has started but the lights have no intensity

[Live], [Movers], [FOH Spots] (G102) [Full] (IP5)

Now can see the effect

Undo changing the submaster to an effect sub

{Properties}, under Mode, {Additive}

Once you change it to an effect sub, you lose the channel's parameter information. Changing it back to additive does not retrieve that information

[Undo] [Enter]

Make sure the fader is down and the sub is off

INTENSITY MASTER

The Fader on Intensity Master Submaster only controls the intensity of the fixtures. The bump button marks the lights. In a submaster that contains an effect, the bump button also starts the effect.

This means that the fader does not control the effect size/rate.

[Sub] [401] {Properties}, under Master, {Int} (Intensity master)

With the fader down, press the bottom bump button

The lights' non-intensity parameters mark and the effect starts. You can see this in the Live Table.

Bring up the fader (Sub 401)

The lights are already marked and running the effect at its full rate & size.

EFFECTS RATE & SIZE ON FADERS

Fader configuration allows us to control much more than just submaster. There are several tools to aid in effect manipulation

Workspace 3 on monitor 1 (CIA Monitor)

This tab shows every fader, laid out by pages. A Page has 10 faders on it. This tab is where you assign the faders and associated buttons property

Each fader is divided into sections you can edit the functions and properties of

- Mapping – what the fader is mapped to. Click this will pop up a menu that allows you to specify a target or list of targets to map
- Size – a fader can be mapped so its content can take up more than 1 fader. It can have up to 3
- Configuration – this pops up a menu that will give you additional configuration of the properties of the target you have assigned. You will see the properties of the content on the fader in this box
- Filters – we can filter what a fader controls. This is where you set that
- Fader – this is where you assign the behavior of the fader/slider itself
- Buttons- there are 3 buttons you can assign functions to. On a motorized fader, the load button is on top of the fader. On a non-motorized fader, the load button is both the bottom buttons (square & triangle) pressed at the same time

At the top of the tab is a page number.

Select the Page box, a window pops up, then type [41] [Enter]

We will see Submaster 401 mapped to fader 41/1. Right now, the Intensity master fader is only controlling intensity and we have no way to control the rate and the size. Let's change that

Select the Size box, a window pops up, and select 3X

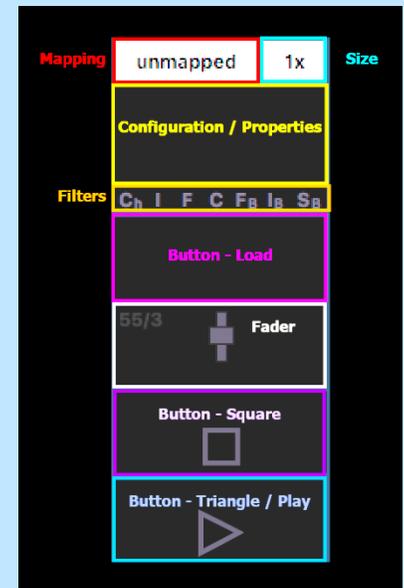
Change the second fader to be Effect Size.

Change the Maximum to 400

On a motorized fader, the fader jumps to the halfway point. That's because the default size of the effect is 100 – the actual size in the effect. You can then adjust it larger or smaller. On a non-motorized fader, you will have to put it halfway up yourself.

The fader just controls intensity

(has a Fader Configuration tab on it)



To jump to page 41

Expands the sub to 3 faders

Change the third fader to be Effect Rate.

Change the Maximum to 400

On a motorized fader, the fader jumps to the halfway point. That's because the default rate of the effect is 100 – the actual size in the effect. You can then adjust it larger or smaller. On a non-motorized fader, you will have to put it halfway up yourself

Play with the Size and Rate faders!

Leave the Size and Rate faders at approximately the middle.

Change the middle button of the second fader to Start Stop Effect

Push the button to see how it works. Push it again to restart the effect

Start/Stop Effect will start and stop the effect each time it is pushed. When stopping, it will stop the effect and snap the lights to the submaster/background position. When starting, it will start the effect with a snap

Change the bottom button of the second fader to Freeze

Push the button to freeze the effect. Push it again to restart the effect

Freeze will pause the effect where it is. The lights do not snap back to their submaster/background value or stop the effect on the channels. It just halts the effect until the button is pushed again

Change the bottom button of the third fader to Solo

Push and hold the button. Then release it.

Solo suppresses any intensity values not provided by the content of the fader while pressed. When released, intensity values are restored

GLOBAL EFFECTS FADERS

Global Effects Faders master all effects globally. They can be set to effect size, effect rate, or effect master.

Click on the Mapping button of fader 41/4 and change it to Global FX.

Make the size 2x

Change the first fader (41/4) to Effect Size, min of 0 and max of 400

Change the second fader (41/5) to Effect Rate, min of 0 and max of 400

Change the middle button on the first fader (41/4) to Freeze.

Play with the Size / Rate faders and Freeze button

Notice how this affects all running effects, regardless of where they get their information. We currently have effects running in the cue, and from submaster 401. If we had effects manually applied, this fader would still affect them

Press the bottom button of the first fader – 41/4

This will turn off the global effect fader and it will no longer affect the channels. Notice it did not reset the faders. If you press the bump button again the rate & size will be where you left them. For now, keep this fader off.

FILTERS

Filters are incredibly powerful tools that allow you to specify what a fader can control. It allows you to get specific and organized with what you are controlling. There are several different types of filters that can be applied

Click on the Configuration area on the Global Effects 2x fader

A filter area pops up showing all the possible filters

- Channel – applying a channel filter limits the fader’s control to just the channels specified
- Parameter – the fader will only affect the specified parameters
- Submaster – the fader will only affect content controlled by the specified submaster
- Cue list – the fader will only affect content controlled by the specified cue list
- Effect – the fader will only affect the effect specified
- Manual filter – if this is on, the fader will only affect manual information, not stored information
- The red X’s next to the filters allows you to clear it out

INTENSITY FILTER ON GLOBAL FX

Click on the Mapping button of fader 41/6 and change it to Global FX.

Change the fader (41/6) to {Effect Rate}, min of 0 and max of 400

Change the middle button to {Freeze}

Click on the Configuration area on the Global Effects 2x fader

A filter area pops up showing all the possible filters

Click on Param Filter (Parameters)

This pops up a screen with all parameters you have patched in your show file, divided by category. You can pick an entire category using the category filters across the top, or you can be as specific as one parameter

Click on the Category Filter {Intensity} along the top

Play with this fader.

See how it only controls intensity.

FOCUS FILTER ON GLOBAL FX

On Global Effects faders filtered to Focus, it is best to make it a size of 2x so both size and rate are on faders.

Click on the Mapping button of fader 41/7 and change it to Global FX.

Make the size 2X

Change the first fader to {Effect Size}, min of 0 and max of 400

Change the second fader to {Effect Rate}, min of 0 and max of 400

Change the middle button of the first fader to {Freeze}

Click on the Configuration area on this Global Effects 2x fader (41/7)

A filter area pops up showing all the possible filters

Click on Param Filter (Parameters)

Click on the Category Filter {Focus} along the top

COLOR FILTER ON GLOBAL FX

[Shift]&[Clear], hit the load (top) button of Fader 41/6 – Intensity Global FX	Posts Fader 41/6 on the command line
[Copy To] and hit the load (top) button of Fader 41/9	This copies fader 41/6 to 41/9.
In the Fader Configuration Tab	
Click on the Configuration area on Fader (41/9)	A filter area pops up showing all the possible filters
Click on Param Filter (Parameters)	
Change the filtered parameters from Intensity to {Color}	
BEAM FILTER ON GLOBAL FX	
[Shift]&[Clear], hit the load (top) button of Fader 41/9	Posts Fader 41/6 on the command line
[Copy To] and hit the load (top) button of Fader 41/10	This copies fader 41/6 to 41/9.
In the Fader Configuration Tab	
Click on the Configuration area on Fader 41/10	A filter area pops up showing all the possible filters
Click on Param Filter (Parameter)	
Change the filtered parameters to {Form} {Image} & {Shutter}	All the Beam sub-categories

PLAY WITH ALL THE GLOBAL FX FADERS!

You can control different aspects of the effects. This is great for busking to music or altering effects on the fly. Filtering to different parameters gives you finer control

CHANNEL FILTER

While playing with the color global effects fader, notice how it is controlling both the effect on the cyc, and the one on the movers in the house. These are both color effects. What if we don't want it control the lights in the house? We only want it to control the effect on the cyc.

Click on the Configuration area on Fader 41/9 – the Global FX Fader	A filter area pops up showing all the possible filters
Click on Chan Filter (Channel)	
Workspace 1 on monitor 1, [Cyc], select the [Cyc All] (G307) [Enter]	Or just type [Group] [307] [Enter]

Now this fader only applies to the cyc. The cyc is a big system that really affects the overall feel of the stage. Sometimes altering just one system is enough to really change the mood. Creating Global FX faders filtered to one group of channels allows for that specificity

RELEASE THE FADERS!

When using many global FX faders, it is easy to get lost and have too much on at a time. Many programmers have a macro to release their faders so they are homed and no longer affecting content on stage.

Macro 401 already exists that will do just that.

Back in Fader Config, (Workspace 3 on monitor 1)	
Change the middle <input type="checkbox"/> button of the second fader of Fader 41/4 to {Macro}, ID # [401] [Enter]	
Press that Macro button	Watch these fader release.

Unit 8 – Effect Overrides

EFFECT OVERRIDES IN CUES & PRESETS

We can edit the effects we make. There are three places we can edit an effect: at the Effect Level, at the Cue Level or at the Channel Level

EFFECT OVERRIDES

Editing an effect in the effect editor is a global change to the base effect. Every time an effect is applied, either manually or from a recorded target, the console looks inside the effect itself and applies what it sees there.

[Effect] [Effect] [420] [Enter]

(Chasing Rainbow)

Change the Cycle Time from 7 to 2

The effect on the cyc is now moving with a cycle time of 2. This effect is recorded into the cue. The console sees that the effect cycle time has changed and adjusts the effect accordingly. Every time this effect is played back, it has this new cycle time

[Live], [Group] [200] [Effect] [420] [Enter]

Applies the effect to the D60s

This effect is applied manually. The D60s are also running with a cycle time of 2 because that is the new cycle time of the effect itself.

[Effect] [Effect]. Change the Cycle Time back from 2 to 7

[Go To Cue] [Enter]

Restores the cue

CUE LEVEL OVERRIDES

We can edit effects on a cue level. These are changes that are applied on top of the base effects, in this cue only. This change **will not** affect the base effect

[Live], [Group] [105] [Full] [Enter] [Effect] [416] [Enter]

Applies the Pan Wave effect to the Side Spots

[Record] [401] [/] [19] [Label} Scanning Sides [Enter]

From a clear Command line, hit [Effect]

The Effect Status Display pops up in the CIA

In the Effect Status Display, we can see all the effects running. This display shows us the effect number, the channels they are running on (and the order they are running in), the source of the effect, and any modifications have been made at the cue level

[420] [Enter] {Rate} [500] [Enter]

Red for manual changes

A rate of 100 is the rate of the base effect. You can change it at a cue level in a range of 0% to 2000%. This is the same for Size.

Word of warning! An override adjusts the attributes of the base effect. If the cycle time of an effect is 2 seconds, and you make a cue override of the rate at 200%, it will be 1 second in the cue. If you later change the base effect to a cycle time of 1 second in the effect editor, the cue will now play back with a time of 0.5 seconds.

{Grouping} [200] [Enter]

Along the bottom to the CIA above the encoder area

This larger grouping makes the effect look like each color is almost fully coming in across the cyc before the next one starts

We also can set a BPM (beats per minute) live, as we listen to music. Let's do this with the intensity effect on the D60s

[Effect] [421] [Learn] [Time]

The command line reads: Effect 421
Learn Time Sample BPM
Averages the timing (tap rate) of the last three hits of Enter

[Enter] [Enter] [Enter]

The side lights are panning far onto the proscenium.

Let's make the size smaller so the lights don't move as far. In addition to using the softkeys, you can use encoders to set effect attributes

[Clear]

To stop the BPM function

[Effect] [416] [Enter] and roll the Size encoder down to 40

Besides using the encoders and softkeys, you can click directly in the ESD table. This has the benefit of automatically selecting the correct effect

CHANNEL LEVEL OVERRIDES

We can also override some effect properties on a per channel basis. These changes will not affect the base effect.

Workspace 2 on monitor 2

Divided into 2 frames: Effect Status (Tab 6) and Effect Channels (Tab 8)

Make sure the tab focus is on Effect Channels.

The Effect Channels tab is where we make changes to effect properties on a per channel basis

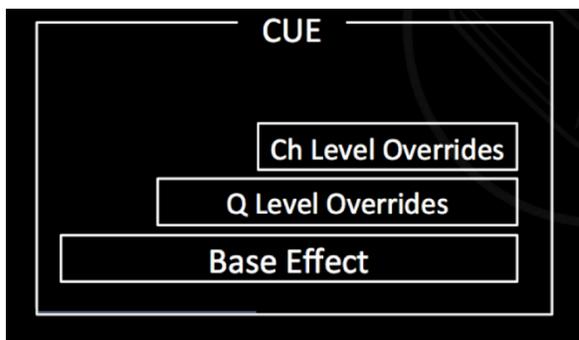
The two downstage-most lights on the scanning sides are still going over the proscenium. If we edit the scale on all the channels, that would make for a very small effect. Just make the scale on the two downstage lights smaller, so they don't go onto the proscenium front

[161] [+] [165] roll Size down using the encoder until the lights don't go over the proscenium

You'll now see that the size of effect 416 has a + in the ESD. This is letting you know that you have channels that are individually overridden for this attribute.

[Record] [401] [/] [20] [Label] Effect Override [Enter]

Notice that effects 416, 420, and 421 all have asterisks in the FX column in the PSD in this cue. This is letting you know you have made overrides on either the cue or channel level



EFFECTS IN PRESETS

In addition to recording effects in cues and submasters, effects can be recorded into a preset. Cue and channel overrides are included when effects are stored in presets. This is a really great way to keep “looks” together for easy recall. It is especially useful when multiple effects are applied to the same fixtures.

Stop all effects except the Pan Wave (Effect 416) on Side Spots (Group 105)

Turn off the Cyc (Group 307)

Make the OH Spots (Group 103), and the D60s (Group 200) Blue (CP 9033)

From a clear command line, [Effect] [416] {Size} [Enter]

To remove the effect overrides on the Side Spots

Make sure the tab focus is still on the Effect Channels tab

[161] [+] [165] {Size} [At] [Enter]

To remove the overrides on specific channels

Go back to Workspace 1 on monitor 1, the Magic Sheet, [Movers]

[Side spots] (G105) [Record] [Preset] [401] [Label] Side Spots [Enter]

In [Blind], look at [Preset] [401] [Enter]

There isn't an effect in the preset! Pan has no effect. This is because we didn't specify that we wanted the effect recorded.

Back in [Live]

[Side spots] (G105) [Record] [Preset] [402] {Plus Fx} [Label] Scanning Sides [Enter]

In [Blind], look at [Preset] [402] [Enter]

The effect is included.

Now when the preset is applied, the effect will be applied as well

Back in [Live]

[Record] <Cue> [401] [/] [21] [Label] Iso Sides [Enter]

In [Blind], look at [Preset] [402] [Enter]

The effect is included.

There is an easy way to change one effect for another that may fit better in this moment

[Effect] [416] [Replace With] [417] [Enter]

Replaces the Pan Wave with the Circle

Everywhere Effect 416 was used, it is now Effect 417. Notice, even though Effect 417 is a circle that applies to both Pan & Tilt, it is only on Pan. If we had selected the lights and applied Effect 417, it would be on Pan & Tilt. Because we did a Replace With, it is only where Effect 416 was

[Live] [Go To Cue] [Enter]

Notice the effect on Pan remains 416.

Notice, the Effect on Pan remains 416. Changing an effect in the preset does not make the change anywhere the preset is already used! It must be reapplied!

[Group] [105] [Preset] [402] [Enter]

Now it is using the preset effect 417

[Update] [Enter]

Updates the cue with the new effect

Unit 9 – Solve the Effect!

In this unit, we have a list of problems that the students must solve with effects. This is time for the students to play and receive feedback. They can ask questions but should be making these effects on their own. Every 10-15 minutes, we should check in and share how people are solving problems.

Some may have more than one shown solution, and there is always more than one correct way. If more than 1 effect is used to achieve the solution, they should be point numbers. (Ex. 450 & 450.1)

[Go To Cue] [Out] [Enter]

Before starting

All these effects will be recorded into cue list 402!

Effect 451: Problem:

In a TV studio and need to create a flicker effect with a variety of spiking levels. The lighting designer wants to be able to use a light meter and specify the levels of the spikes and specific moments on the effect, so it won't be too bright or too dim for the camera. We will be running this on the FOH Spots.

Record into Cue 402/1

Effect 452: Problem:

I am working on a play that has a scene with a lantern in the DSL corner. Throughout the scene, the candle flickers. We want the D60 downlight in that corner to mimic the lantern that is there.

Stop the flicker on the FOH Spots & turn them off. Record this new candle effect into cue 402/2

Effect 453: Problem:

The designer has asked for a shimmer on the back-wall pixels (Group 700). They want it to feel like a dancing shimmy.

Stop the candle effect and turn the fixture off. Record this back-wall shimmer into cue 402/3

Effect 454: Problem:

We have been asked to create an effect that looks like fireworks shooting up and an exploding using the FOH Movers (Group 102)
Stop the back-wall shimmer and turn them off. Record the fireworks into cue 402/4

Effect 455: Problem:

We have been asked to make the stage look like water. We want a full, immersive environment. Don't forget, you can use multiple effects as well as non-intensity parameters!
Record your water look as cue 402/5

Effect 456: Problem:

The electrician/gaffer has asked us to create an effect they can use to check the color flags in any CMY moving light before the programmer has arrived on site. They would like all the lights together to turn on to full, and snap between cyan, magenta, and yellow while they walk around and check.
Record cue 402/6 with this CMY check on all moving lights (Group 101). Everything else should be off.

Effect 457: Problem:

There is a sound effect of a beating hospital heart monitor. We want to create an effect that encapsulates that feeling on the intensity of the high side templates (Group 230 & 240). We want the effect to beat from current intensity of the lights.
Stop the ML check cue and record this heartbeat into cue 402/7

Effect 458: Problem:

We are going to be doing a jail scene later and the convicts have escaped. We want to create police searchlights using the FOH movers (group 102). We are making this ahead of time, and we don't know how often we will use it. We should be able to recall this easily

Appendix 1 Unit 9 Solutions

EFFECT 451: SOLUTION:

Effect 451: Absolute High Intensity					
Action	Param	Step Time	Time	Dwell	Level
1		(1)	0.14	0	75.0
2		(1)	0.14	0	100.0
3		(1)	0.14	0	25.0
4		(1)	0.14	0	65.0
5		(1)	0.14	0	85.0
6		(1)	0.14	0	35.0
7		(1)	0.14	0	100.0

ATTRIBUTES:

- Random Group
- Random Rate 50 > 200
- Cycle Time 1
- Grouping Spread
- Trail Even
- Duration Infinite
- Entry Immediate, Fade by Size, Cue/Sub
- Exit Immediate, Fade by Size, Cue/Sub

EFFECT 452: SOLUTION:

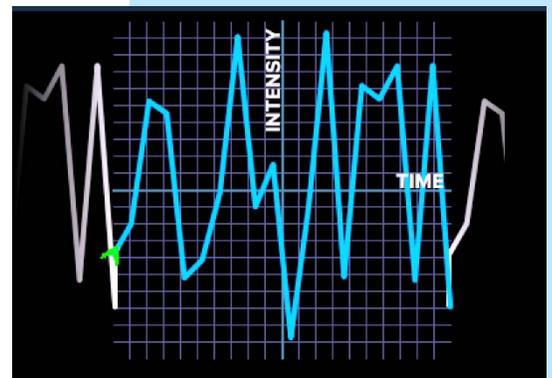
Channel 31 @ 50 in Orange (CP 9022)

I applied a linear intensity flicker and a linear color flicker

EFFECT 452 – CANDLE FLICKER

ATTRIBUTES:

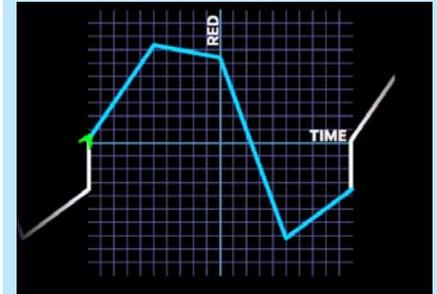
- Random Rate 50 > 200
- Cycle Time 2
- Grouping Spread
- Trail Even
- Duration Infinite
- Entry Immediate, Fade by Size, Cue/Sub
- Exit Immediate, Fade by Size, Cue/Sub
- Scale 10



EFFECT 452.1 – COLOR CANDLE FLICKER

ATTRIBUTES:

- Random Rate 50 > 200
- Cycle Time 2
- Grouping Spread
- Trail Even
- Duration Infinite
- Entry Immediate, Fade by Size, Cue/Sub
- Exit Immediate, Fade by Size, Cue/Sub
- Scale 10
- Parameters Red, Green, Amber

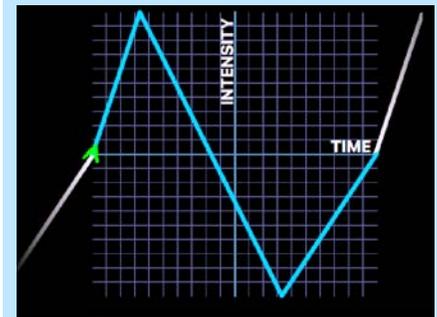


EFFECT 453: SOLUTION:

EFFECT 453 – RELATIVE SHIMMER

ATTRIBUTES:

- Cycle Time 3
- Grouping 5
- Trail Even
- Duration Infinite
- Entry Immediate, Fade by Size, Cue/Sub
- Exit Immediate, Fade by Size, Cue/Sub
- Scale 25



EFFECT 453.1 – ABSOLUTE SHIMMER

ATTRIBUTES:

- Cycle Time 4
- Grouping 5
- Trail Even
- Duration Infinite
- Entry Immediate, Fade by Size, Cue/Sub
- Exit Immediate, Fade by Size, Cue/Sub

Action	Param	Step		Dwell	Level
		Time	Time		
1		(2)	1	1	15.0
2		(2)	1	1	50.0

EFFECT 454 SOLUTION:

Absolute effect using presets. I included a small preset at the up position so that the firework wouldn't explode until it reached closer to the top

PRESET 454.1: FIREWORKS DOWN/OFF

ATTRIBUTES:

- Group 402 in their home position
- Off
- Firework Gobo (BP 9201.5)
- Small Zoom (BP 9041)
- Sharp (BP 9027)
- Red (CP 9021)
- Small Iris (I dialed to 42)

PRESET 454.2: FIREWORKS UP/ON/SMALL

ATTRIBUTES:

- Group 402 Tilted up to the top of the proscenium
- Pan fanned center out so they are slightly spread
- On
- Firework Gobo (BP 9201.5)
- Small Zoom (BP 9041)
- Sharp (BP 9027)
- Red (CP 9021)
- Small Iris (I dialed to 42)

PRESET 454.3: FIREWORKS UP/ON/LARGE

ATTRIBUTES:

- Group 402 Tilted up to the top of the proscenium
- Pan fanned center out so they are slightly spread
- On
- Firework Gobo (BP 9201.5)
- Medium Zoom (BP 9043)
- Sharp (BP 9027)
- Gold (CP 9024)
- Large Iris – 100

Action	Param	Step		Dwell	Level
		Time	Time		
1		(1)	1	0	Pr 454.1
2		0.85	1	0	Pr 454.2
3		(0.3)	0.3	0	Pr 454.3
4		0.5	0.5	1	0.0

EFFECT 454.4 – FIREWORKS

ATTRIBUTES:

- Cycle Time 2.65 (came from changing action times to make the fireworks feel like they are exploding at the top – I didn't touch this attribute)
- Grouping spread
- Trail Even
- Duration Infinite
- Entry Immediate, Fade by Size, Cue/Sub
- Exit Immediate, Fade by Size, Cue/Sub

EFFECT 455: SOLUTION

I used the D60s in a slow color effect to feel like the ocean. I did absolute. Could also be accomplished with a relative effect – either color or linear applied to color parameters.

- I put the D60s at full in blue (CP 9033)
- Created an absolute color effect slowly fading between several blues
- I applied this effect to the D60s offset in a random group

EFFECT 455 – WATER

ATTRIBUTES:

- Cycle Time 15
- Grouping Spread
- Trail Even
- Duration Infinite
- Entry Immediate, Fade by Size, Cue/Sub
- Exit Immediate, Fade by Size, Cue/Sub

I used the cyc in a slow intensity effect to make it feel like waves

- Put the full cyc (Group 207) at 30
- Cyc Top (Group 301) in Azure (CP 9031)
- Cyc Bottom (Group 304) in Blue (CP 9033)
- Apply a linear intensity effect across the mirrored in cells (Group 315) and put the cells at 50. I felt that this made it feel like waves

EFFECT 455.1 – WAVES

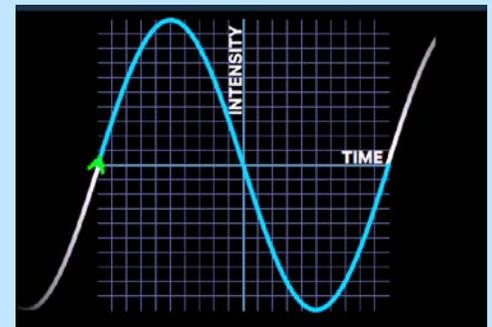
ATTRIBUTES:

- Cycle Time 8
- Grouping Spread
- Trail Even
- Duration Infinite
- Entry Cascade, Fade by Size & Rate, Cue/Sub
- Exit Immediate, Fade by Size & Rate, Cue/Sub
- Scale 25

I used the non-intensity parameters in FOH Movers to feel like reflecting water

- I homed the FOH Movers (Group 102) and stopped the effect
- Zoom large
- Wave gobo (BP 9211.2)
- I put in the animation wheel and slowly rotated it
- The odds channels I did positive rotation. The evens I did negative rotation
- I ran the edge until you couldn't see the gobo or the animation wheel sharp. It looked like movement.

		Step			
Action	Param	Time	Time	Dwell	Level
1		(3.75)	2.5	1.25	Blue
2		(3.75)	2.5	1.25	LT Blue
3		(3.75)	2.5	1.25	Cyan
4		(3.75)	2.5	1.25	Azure



EFFECT 456: SOLUTION

I made this effect using the cyan, magenta, and yellow parameters. That way this can be used even if no color palettes are made for the fixtures, and we know that it is just each parameter at full on its own.

EFFECT 456 – CMY CHECK

ATTRIBUTES:

- Cycle Time 3
- Grouping 1
- Trail Even
- Duration Infinite
- Entry Fade by Size, Cue/Sub
- Exit, Fade by Size, Cue/Sub

Action	Param	Step		Dwell	Level
		Time	Time		
1	Intens	0	0	3	100.0
2	Cyan	0	0	1	100.0
3	Magenta Yellow	(1)	0	1	0.0
4	Magenta	0	0	1	100.0
5	Cyan Yellow	(1)	0	1	0.0
6	Yellow	0	0	1	100.0
7	Cyan Magenta	(1)	0	1	0.0

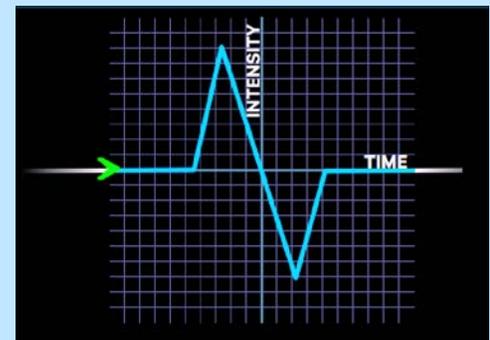
EFFECT 457: SOLUTION

I made this effect as a relative effect. We could have done it as an absolute, but we were asked to make it beat from the current intensity of the fixtures

EFFECT 457 – HEARTBEAT

ATTRIBUTES:

- Cycle Time 1
- Grouping 1
- Trail Even
- Duration Infinite
- Entry Fade by Size, Cue/Sub
- Exit Fade by Size, Cue/Sub
- Scale 25



EFFECT 458: SOLUTION:

I made three effects and recorded it into a preset so I could recall it later.

One is an absolute intensity snap. To me, the lights snapping on and off as it moves makes it seem more chaotic – we won't know where the lights will be when they next turn on.

EFFECT 458 – COP INTENSITY STEP

ATTRIBUTES:

- Cycle Time 2
- Grouping Spread
- Trail Even
- Duration Infinite
- Entry Immediate, Fade by Size, Cue/Sub
- Exit Immediate, Fade by Size, Cue/Sub

Action	Param	Step		Dwell	Level
		Time	Time		
1		(1)	0	1	100.0
2		(1)	0	1	0.0

One is a color effect. Red and blue signify the police. I created an absolute effect between red and blue.

EFFECT 458.1 – RED/BLUE COP

ATTRIBUTES:

- Random Rate 50 > 200
- Cycle Time 5
- Grouping 2
- Trail Even
- Duration Infinite
- Entry Immediate, Fade by Size, Cue/Sub
- Exit Immediate, Fade by Size, Cue/Sub

Action	Param	Step		Dwell	Level
		Time	Time		
1		(2.5)	0	2.5	Red
2		(2.5)	0	2.5	Blue

The last is a focus effect. It is a circle, but with the form compressed so that there is less tilt. This gives the lights a scanning feel as they roam the stage.

EFFECT 452.1 – SEARCHLIGHT CIRCLE

ATTRIBUTES:

- Cycle Time 10
- Grouping Spread
- Trail Even
- Duration Infinite
- Entry Immediate, Fade by Size, Cue/Sub
- Exit Immediate, Fade by Size, Cue/Sub
- Scale 20

I recorded this into preset 458 plus FX





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