



# Eos Family Magic Sheets

A quick guide to interactive graphic displays

V2.0.1 Rev. A

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This workbook is based off of the standard Level 2 show file – intermediate patch.

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# About Magic Sheets

Magic Sheets are user-created graphic displays that offer customizable interactive views for showing data and programming. Magic Sheet objects can be tied to show data, such as channels and palettes, or can be representational graphics, such as scenic pieces, architecture or electrics.

Magic sheets can be designed, edited or used in offline or from any control device online. Different views of a Magic Sheet can be stored, and Magic Sheets can be printed out like traditional magic sheets.

Magic Sheets are powerful for everyone in a lighting team:

- A Lighting Designer may use them to lay out channel displays in a custom or specialized way.
- An Assistant Lighting Designer may use them to track data, keep up with labels, and help the Designer keep track of moves, marks, discrete timing, etc.
- A Programmer may use them to view and interact with certain portions of the rig, or to bring forward tools to make programming quicker.
- An Electrician may use them for specialty views, rig-specific layouts, or data regarding the health of fixtures.
- Non-Technical people can interact with Magic Sheets to accomplish tasks on the system without any programming knowledge, such as archi-tainment installations.
- Other Production Team members may use Magic Sheets for indication of rig status that pertains to their area of operation.

The Magic Sheet editor – while simple in design – is powerful enough to allow a myriad of options for creating a Magic Sheet space. This book is an overview of the tools in the Magic Sheet suite – how you use those tools are nearly endless.

## CAPACITY

- 99 Magic Sheets in a show  
Each Magic Sheet can have up to 16 views

# Magic Sheet Creation

## NEW MAGIC SHEET

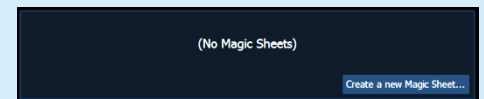
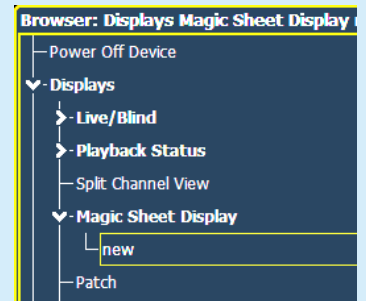
There are multiple ways of opening a new or blank magic sheet.

**Browser > Displays > Magic Sheet Display > New**

**[Displays] {Magic Sheet} [Enter]**

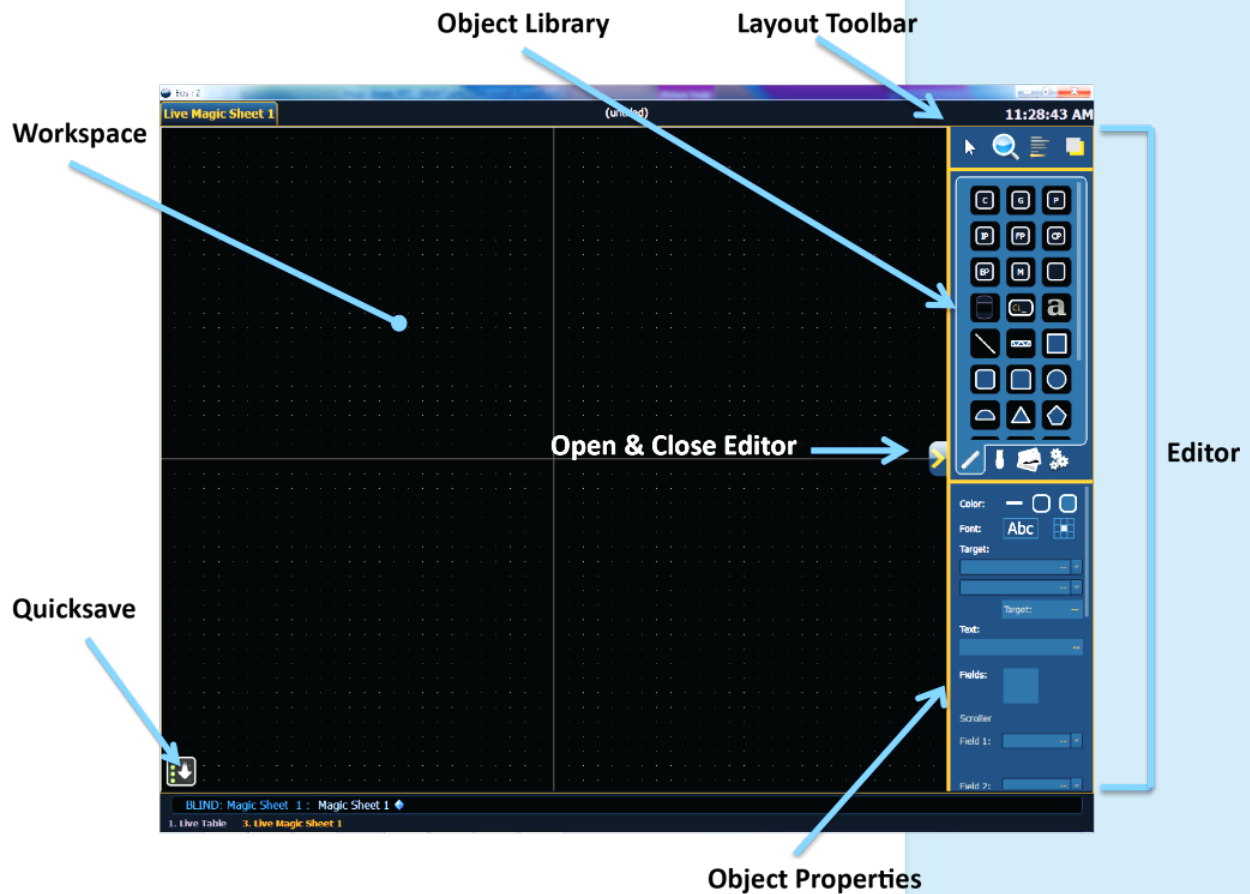
**Click or touch “create a new Magic Sheet...”**

**[Displays] {Magic Sheet} [1] [Enter]**



## GETTING STARTED

Clicking on the Edit button (⌘) on the right hand side of the magic sheet display will open the editing tools.



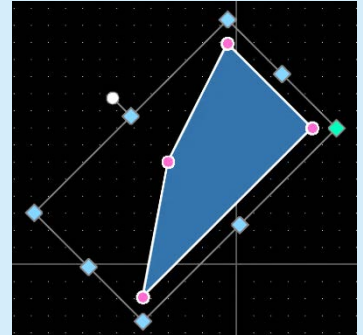
## SIMPLE TOOLS

Similar to many drafting programs, basic tools are available for general editing functions.

**Click in the Object Library on the rectangle – 5<sup>th</sup> down on right side**

**Drag and drop it on the worksheet**

- Green Handle for proportional stretch
- Blue handles for edge stretch
- White dot handle for rotate
- Pink handles for individual point move



## Mouse Navigation Tools

**Left click**

selects an object

**Right click and hold**

to pan or drag the display

**Use your mouse wheel**

to zoom in and out

**[Shift] + mouse wheel**

provides a fine zoom of the magic sheet

Like in most graphical programs, selecting from left to right will open a blue window and any objects completely inside the box is selected. Selecting from the left opens a green window and any object that crosses the boundary line of is completely inside the window is selected.

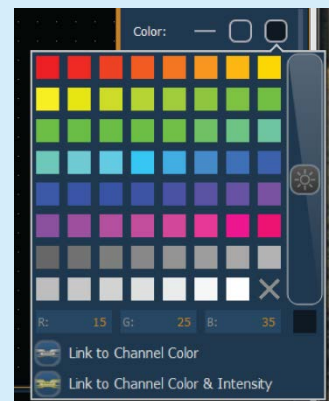
## OBJECT PROPERTIES

### COLOR PROPERTIES

You can customize objects and fixture symbols in numerous ways found in the Object Properties area.

- **Color** - the object's outline line weight, outline and fill colors can be adjusted here.
  - In the color options, the X in the lower right hand corner is blank/clear and the bar along the right hand side allows you to control Hue.
  - The object's colors can be linked to channel color or linked to channel color & intensity.

**Select a line weight and a fill color**

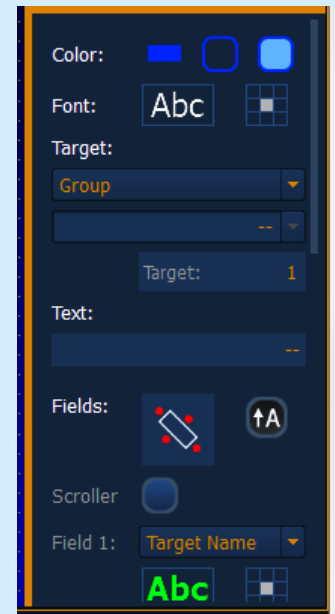


### TARGET ASSIGNMENT

Most objects default to a channel target, but that can be changed. The targets available are:

- Beam Palette
- Color Palette
- Focus Palette
- Intensity Palette
- Preset
- Submaster
- Macro Magic Sheet
- Console Button \*
- Zoom - when clicked, the view will zoom in to show all objects within that object's group.
- Selection - when clicked, all other objects within that object's group will be selected.
- Target # - assigns the starting target number.
- When Console Button is selected as a target, the blank pull-down menu between the target selection and number is filled with a list of all the console buttons available as targets.
- Channel (default)
- Cue
- Effect
- Group
- Pixel Map
- Snapshot
- User

**Make the target 'Group' and start at number 7**



### FIELD SELECTION

Up to six different fields of custom information can be displayed per objects. Fields can display the following data:

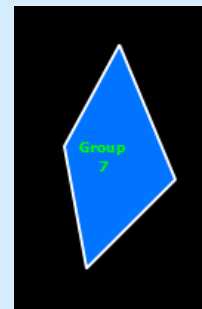
- Target ID
- Target Name
- Text 1-4
- Intensity Bar
- Summary
- Color
- Status
- Fixture Type
- Label
- Intensity
- Color Swatch
- Focus
- Beam
- Prev Move
- Next Move
- The **Font (Abc) icon** allows the means to adjust the font type, size, color and style (bold, italic, underline) of each individual field. Used also to change the size and color of an intensity bar
- The alignment of the each field can be set by selecting a position on the grid of the **Alignment icon** next to the font icon.

**Make Field 1 the Target Name**

**Make Field 2 the Target ID**

**Both should be Tahoma, 20, Bold, Green, and aligned Center**

Your Magic Sheet object should look something like the graphic at the right.



### QUICK SAVE

Clicking on the **{Quick Save}** button allows you to save a restore point for the magic sheet you are working on. Once saved, a green check mark will temporarily appear next to the **{Quick Save}** button.

It is recommended that you click **{Quick Save}** often or after making any major changes to the magic sheet that you want to save. If you then hit **[Undo] [Enter]**, the console will take the magic sheet back to the last restore point.

**NOTE:** If no restore points are saved, [Undo] [Enter] will delete the magic sheet.

Quick saving a magic sheet will also send any changes made to the magic sheet to all the devices in a multi-console system.



## LAYOUT TOOL BAR

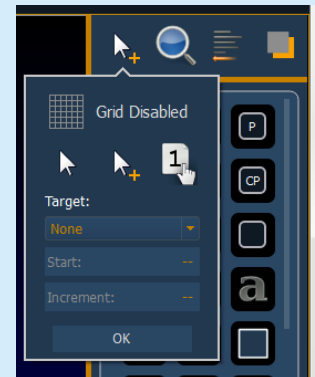
Four tools for general editing functions are located at the top. To see a description of a tool or object, hover the cursor over it. Its title will display after a second or two. Let's look at the first.

### EDIT MODE

- **Grid Enabled** - toggles between a grid being displayed and no grid. With the grid enabled, the magic sheet will have a snap to grid behavior when placing objects.
- **Normal** - allows for dragging and dropping of objects from the object list.
- **Quick Layout** - allows for placing more instances of a selected object. When finished, click the **{Done}** button or change the layout mode to normal.
- **Quick Number** - used to quickly assign target numbers to objects. While in quick number mode, clicking on an object will assign the selected target and increment the target numbers.
- **Target** - used to specify object, starting target number, and increment for use in quick number mode.
  - Object - assigns the object from the list.
  - Start - assigns the starting target number.
  - Increment - assigns what increment the target numbers will use after the start number.

**Click on the Quick Layout Tool (arrow with a plus sign)**

**Target should be Channel and Start = 36, Increment = 1**



## OBJECT LIBRARY

Four tabs of drawing libraries. Notice the vertical line on the right side – it is a scroll bar. Another way to see all the objects – hover over the yellow line below the library tabs and drag up or down. This will expand or collapse the section.

- **Objects** - things that can be drawn or created (see Appendix 1)
  - Top 9 objects are target buttons
- **Fixtures** - Fixture symbols can be tied to a channel number. Additional fixture symbols can be imported.

Click in the Fixtures Library, on the Selador – 3rd down on right side

Click and drop 17 Seladors on the workspace - preferably horizontally

Click on the Red Done Icon when finished

### SELECTING MULTIPLE OBJECTS

- Like in most graphical programs, click and drag right making a box around all the objects will select all the fixtures.
- Click and drag left just touching a part of each fixture will also select all the fixtures.

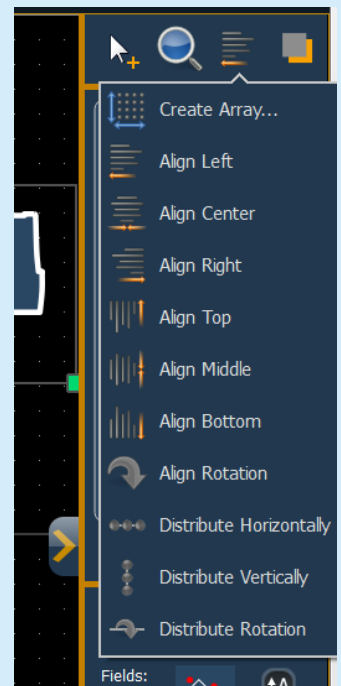
Select all the fixtures; zoom out to see all and have room

## ALIGNMENT

Back on the Layout Toolbar, click on the Align tool

- **Create Array** - allows you to create arrays of objects. After placing one object of your choice, click on **{Create Array}** to open an additional window for choosing what array type you want to use.
  - Rectangle** – to create a rectangular array of objects. You can define how many rows, columns, and the spacing
  - Circle** – to create a circular array of objects. You can define the number or count of objects and the size of the circle.
- **Align Settings** - allows you to align objects either to the left, center, right, or top, middle, and bottom.
- **Align Rotation** - allows you to select multiple objects and align their rotation to the first object selected.
- **Distribute Horizontally** -allows you to distribute objects horizontally at an equal distance apart between two objects. Set the distance you would like by placing the first and last objects.
- **Distribute Vertically** - allows you to distribute objects vertically and evenly spaced. Set the distance you would like by placing the first and last objects.
- **Distribute Rotation** - allows you to distribute objects at an equal rotation between two objects (create a circle). Set the level of rotation you would like by placing the first and last objects at a rotation.

Select Align Middle and then select Distribute Horizontally





## BACK TO OBJECT PROPERTIES

Click on the Object Fill Color icon

Click on the Link to Channel Color on the bottom of the chart

## IMAGE LIBRARY TAB

Images can be imported into magic sheets for two different purposes: background images or as icons.

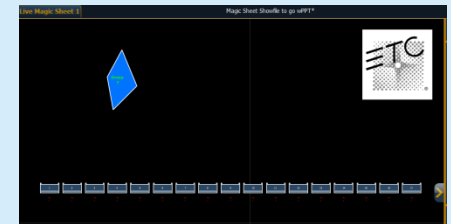
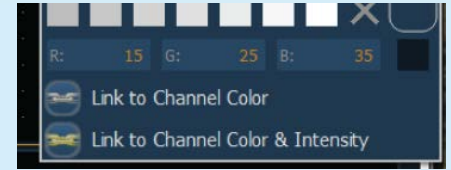
- **[Gobo]** – a direct link to the console gobo library
- Accepted image formats: .bmp, .gif, .ico, .jpg, .pbm, .pgm, .png, .ppm, .svg, .svgz, .tga, .tiff, .xbm, and .xpm.
- The maximum image size allowed is 1920 x 1920

Click in the Images Library

Insert your favorite gobo from the gobo library

Scale it down

After the last few exercises, your Magic Sheet might look something like the image at the right.



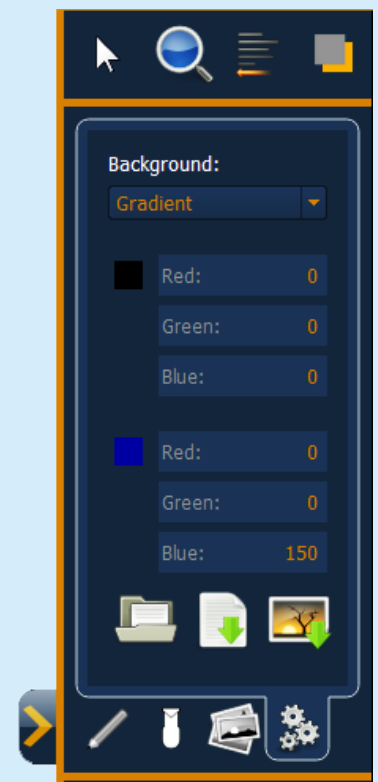
## JUST A FEW MORE CHANGES:

## BACKGROUND SETTINGS

- **Solid** – use Red, Green and Blue to select a color or click on the small square next to 'Red' to open a color picker, complete with saturation bar on the right. Note the X closes the color picker
- **Gradient** – select top and bottom colors and display will scale between the two colors
- **Image** -- click on the image icon to select a background image, set width, height and opacity, options for inverted or normal  
Currently accepts image files: jpg, tif, bmp, png

Select Gradient in the pull-down menu

Choose a top color and a bottom color



## EXERCISE

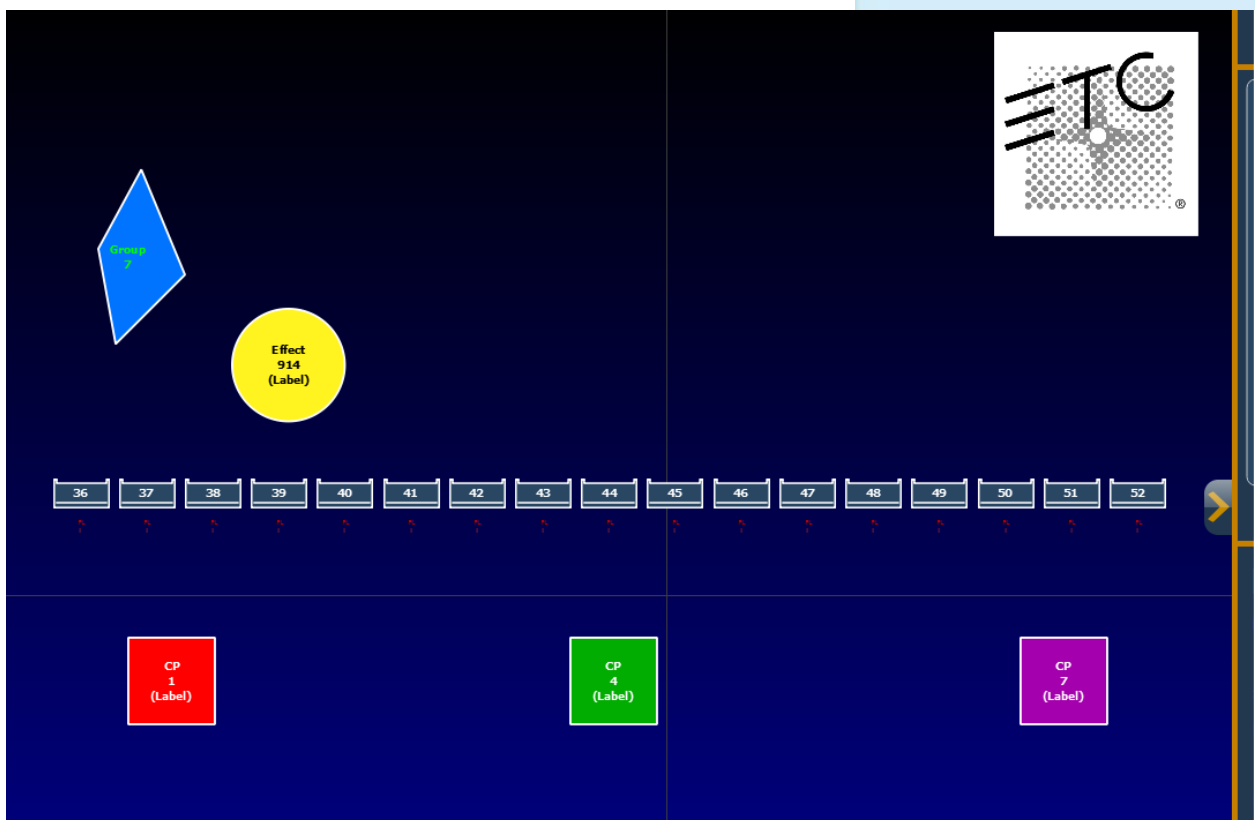
By now, you should have:

- A blue diamond which is Group 7
- 17 LED fixtures that are channels 36 – 52
- A gobo image – not assigned to a target

Please add:

- A yellow circle assigned to Effect 914 – a Hue-Saturation effect
- Three colored boxes assigned to Color Palettes: 1 - Red, 4 - Green, 7 - Magenta
- All objects should be set up as:  
Field 1: Target Name  
Field 2: Target ID  
Field 3: Label  
Tahoma, 20 Pt, Bold

When done, your Magic Sheet might look something like the image below. Close the Editor.



# Magic Sheets in Live

## PLAY!!

<b>[Live]</b>	
<b>Click on the Group 7 Object (blue diamond)</b>	notice Group 7 on command line
<b>[Full] [Full]</b>	bring up the intensity
<b>Click on the Color Palette 1 (Red)</b>	cyc changes to red
<b>Click on the Color Palette 4 (Green)</b>	cyc changes to green
<b>Click on the Color Palette 7 (Magenta)</b>	cyc changes to magenta
<b>Click on Effect 914</b>	color effect runs on cyc
<b>[Clear] [Sneak] [Enter]</b>	
<b>Click on every other channel – 37, 39, 41, 43, 45, 47, 49, 51</b>	watch command line
<b>Run channels up on wheel</b>	bring up the intensity
<b>Click on the Color Palette 1 (Red)</b>	changes to red
<b>Click on every other channel – 36, 38, 40, 42, 44, 46, 48, 50, 52</b>	
<b>Click on the Color Palette 4 (Green)</b>	changes to green
<b>Click on Group 7</b>	to select all the channels again
<b>Click on Effect 914</b>	color effect runs on cyc

# Additional Object Properties

## INTENSITY BAR

In the Fixtures Tab, select the Source Four – 5th down on right

Target = Channel, Target # = 1

Field 1: = Target Name

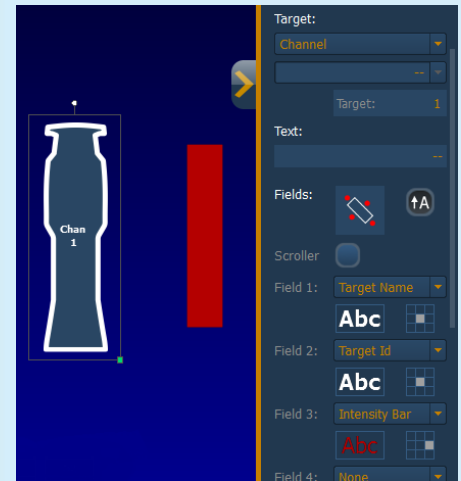
Field 2: = Target ID

Set Field 3 as Intensity Bar

Click on the chevron to close the Magic Sheet Editor

[Live]

[1] [At] [75] [Enter]...then play with the level wheel



## FIELD ORIENTATION

Open the Magic Sheet Editor

Next to the header 'Fields', is the Field Orientation Icon

- **Exterior Bounds** - fields are exterior to the object and remain at a position regardless of the rotation of the object.
- **Interior** - fields are in the interior of the object. Useful for desk buttons
- **Exterior Shape** - fields are exterior to the object and move in relation to the object's rotation.

Toggle through each option and watch the fields on the fixture

Next to the Orientation icon is a simple toggle for keeping text upright

Toggle it on or off and then rotate the fixture

## SCROLLER

In the Fixtures Tab, select the Source Four PAR – 1st on right

Target = Channel, Target # = 6

Field 1: = Target Name

Field 2: = Target ID

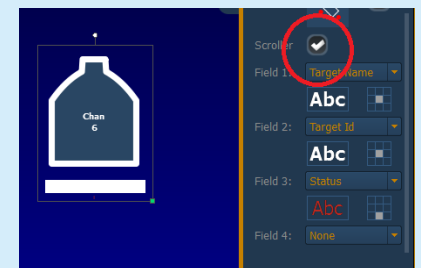
Above Field 1, check the box for adding a scroller

- The Scroller checkbox adds a scroller indicator bar to the object and links it to its color (must be a fixture, not any object)

Click on the chevron to close the Magic Sheet Editor

[Live]

[6] [Full] [Enter] [Color] ...then play with the scroller encoder



## QUICK ARRAY OF GROUP BUTTONS

Open the Magic Sheet Editor

Right click and drag screen up for more room

Go to the Object Library

Drag a Group icon onto the sheet (top center)

Set Field 3 as Label and make the Font underlined, Font Size 20

Click the alignment tool and select "Create Array..."

Select Rectangular

Set number of columns (10) and number of rows (3), both spacing 1

Click {Ok}.

Close Edit mode and hit [Live]

now have an array of group buttons

labels populate with group labels



## CREATE ANOTHER MAGIC SHEET

## Circle Array

[Displays] [Magic Sheet] [2] [Enter]

opens a new magic sheet

Click on the chevron tab on the right

to open the magic sheet editor

Click on the fixture library and drag a mover onto the magic sheet

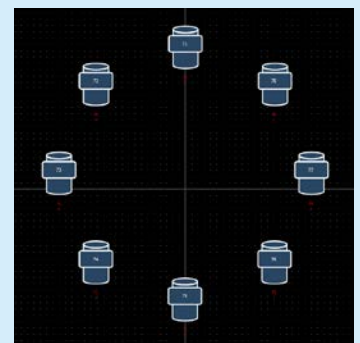
5<sup>th</sup> row, 1<sup>st</sup> one is a moving spot

Set Target as Channel, Target number as 71

Click the alignment tool and select "Create Array..."

Select Circular, 8 units, size 800 and click OK

creates an array of movers

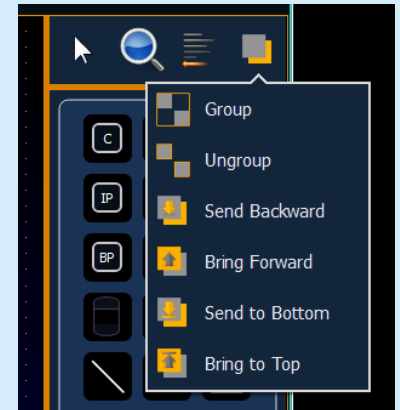


## OTHER LAYOUT TOOLS

### ORDERING - GROUPING/STACKING

Each magic sheet is made up of multiple layers, where objects can be placed. The objects can either be placed on their own or stacked on top or beneath of each other.

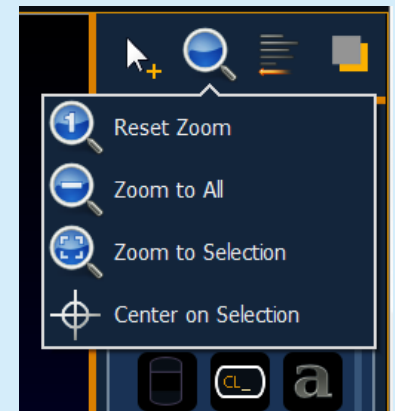
- **Group** - allows you to group objects together so they can be moved and rotated like a single object.
- **Ungroup** - removes grouping.
- **Send Backward** - will send an object back a layer.
- **Bring Forward** - will move an object up a layer.
- **Send to Bottom** - will send an object beneath all other objects.
- **Bring to Top** - will stack an object on top of all other objects.



### ZOOM

Clicking on the magnifying glass will open the zoom mode options, which include:

- **Reset Zoom** - sets the zoom level to 1:1 and centers the magic sheet.
- **Zoom to All** - zooms to show all objects.
- **Zoom to Selection** - zooms to show all selected objects.
- **Center on Selection** - centers the display on the selected objects without changing the zoom level.



## Navigation in Live

Click the chevron button next to the edit panel

to collapse the edit panel

[Live] , [Displays] {Magic Sheet} [1] [Enter]

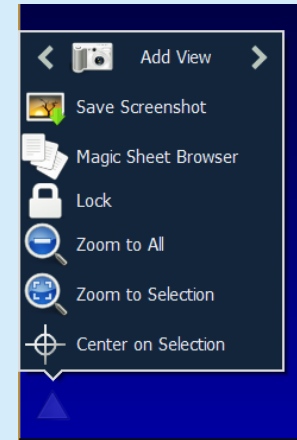
to go back to MS1

### DISPLAY TOOLS

Click on the triangle in the lower left of the display

to open Magic Sheet display tools

- **< ■ Add View >** – for each magic sheet, multiple views may be created, < and > allow for scrolling through the views.
- **Save Screenshot** – saves a png screenshot to a USB
- **Magic Sheet Browser** – opens a browser of thumbnail images to scroll through. Can also be opened using multi-touch gestures  
Should see Magic Sheet 1 and 2
- **Lock / Unlock** – locks the magic sheet so it cannot be zoomed or panned. Note that the triangle turns into a lock.
- **Zoom to all** – zooms to show all objects
- **Zoom to selection** – zooms to show all selected objects
- **Center to selection** – centers the display on the selected objects without changing the zoom



Click on Zoom to all

Click on ■ Add View

zooms out to show all objects in MS1

Select Ellipsoidal, then click on Zoom to selection Click on ■ Add View

zooms in to show only selected item

Zoom to all

zooms out to show all objects

Select the Group Array and Zoom to selection Click on ■ Add View

Now use the < > to scroll through the 3 views

{Magic Sheet} [1] [/] [2] [Enter] or {Magic Sheet} [1] [Part] [2] [Enter]

to view Magic Sheet 1, View 2

### Open Multiple Magic Sheets

[Browser]: Displays > Magic Sheet Displays > New

opens the Magic Sheet Browser to select

Select the Magic Sheet to open.

opens the new Magic Sheet in a new tab

### MAGIC SHEET LIST

[Browser]: Record Target Lists > Magic Sheets > select one

{Magic Sheet} {Magic Sheet} or CTRL+S on an external keyboard

to open the Magic Sheet List

The magic sheet list displays a list of all created magic sheets, their labels, and their views have been saved for each magic sheet.

#### To Label a Magic Sheet

{Magic Sheet} [#] [Label] <name> [Enter]

to label your magic sheets

# Other Means of Navigation

Magic sheets can be navigated using a mouse, a keyboard, a touchscreen, or a multi-touch touchscreen. The drag and drop function for placing objects is a single touch action or done using a mouse.

## MULTI-TOUCH GESTURES

The following multi-touch gestures can be used with an external multi-touch touchscreen or the onboard monitors on Eos Ti and Gio. Multi-touch is not available on the on-board monitors of Eos.

- **Scroll** - touch with two fingers to move around the page.
- **Zoom Out** - touch with two fingers and then move your fingers toward each other.
- **Zoom In** - touch with two fingers and then move your fingers away from each other.
- **Zoom to All** - double tap with two fingers.
- **Jump to Previous View** - use three fingers to swipe upwards or to the right.
- **Jump to Next View** - use three fingers to swipe downwards or to the left.
- **Magic Sheet Browser** - tap with three fingers to open the browser.

## KEYBOARD SHORTCUTS



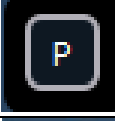
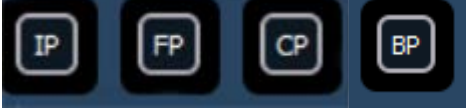









With an external alphanumeric keyboard attached, the following keyboard shortcuts can be used:

- **ARROW KEYS** - move selected item or navigate when nothing is selected.
- **SHIFT** - move/rotate item without snapping to grid.
- **CTRL+S** - double tap to open the magic sheet list.
- **CTRL+A** - select all
- **CTRL+C** - copy
- **CTRL+V** - paste
- **CTRL+X** - cut
- **CTRL+G** - group
- **CTRL+SHIFT+G** - ungroup
- **DELETE** - delete
- **ESC** - finish line/polygon creator or close tab.



# Appendix 1 - Object Library

The following table contains the various magic sheet objects located in the first tab, and a brief description of what they do. Settings for objects can be adjusted in the Object Properties area.

Channel		acts as a direct select for a channel
Group		acts as a direct select for a group
Preset		acts as a direct select for a preset
Palettes		acts as a direct select for a palette
Macro		acts as a direct select for a macro
Blank		can be assigned a target
Channel Icon		mirrors the channel indicators from the live/blind summary view
Command Line		mirrors the command line. Can be assigned to mirror the command line for any user. Target is User #
Text		places descriptive text on the sheet. The text can also be assigned a target.
Line		draws a line. Examples of use could be as a pipe for fixtures or a divider between buttons.
Truss		places truss
Shapes		draws shapes that can have a target assigned to them or could be used to represent set pieces
Points		allows for free form creation of objects with and without fill

# Appendix 2 – Fixture Symbols

## IMPORTING FIXTURE SYMBOLS

Additional fixture symbols can be imported. The symbol must be saved as a .svg image file, and it needs to be tagged properly.

The outline section needs to be tagged as etc\_symbol\_outline and the base section needs to be tagged as etc\_symbol\_base.

The edits to the tags in the .svg file can be made in any text editor program, such as Notepad, or in a .SVG editor program, such as Inkscape (freeware).

## IMPORTING IMAGES

Images from the third tab can be imported into magic sheets for two different purposes. They can be used as background images or as icons.

You can use a graphics image file as a background or icon. The following is a list of accepted image formats: .bmp, .gif, .ico, .jpg, .pbm, .pgm, .png, .ppm, .svg, .svgz, .tga, .tiff, .xbm, and .xpm.

The maximum image size allowed is 1920 x 1920.

You will need to have the images on a USB drive to import them into the desk.

Once an image has been imported, it is saved with the show file.

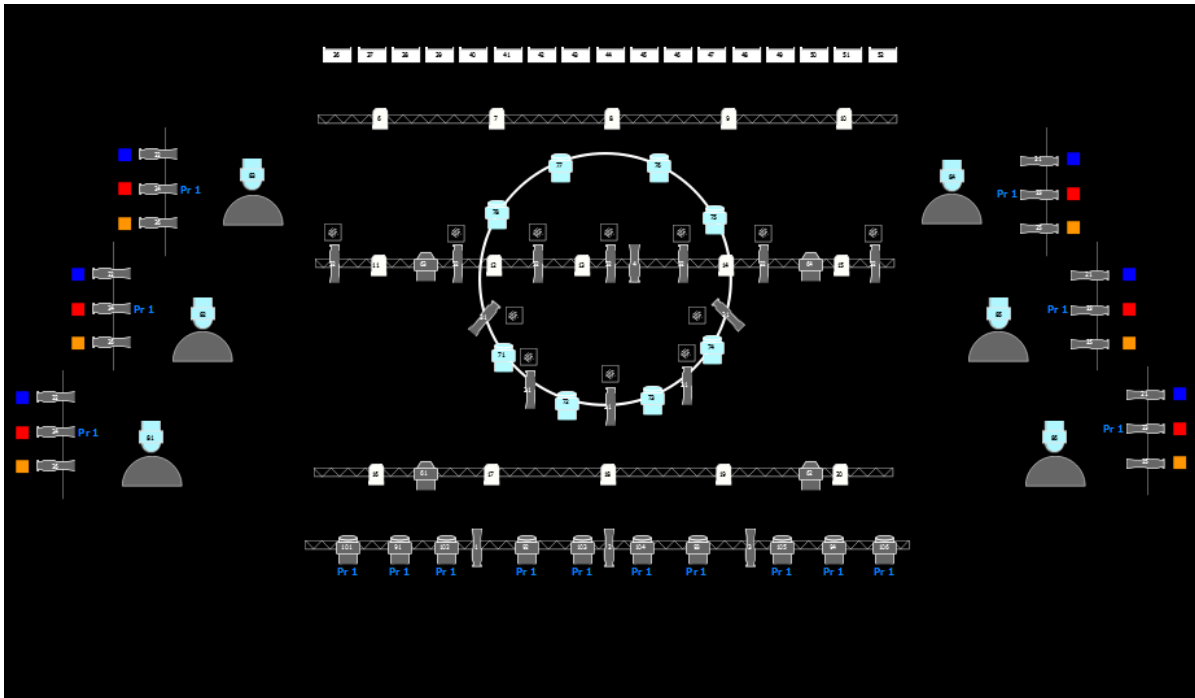
To import an image:

- Step 1: Click on the import image icon. A separate window will open displaying any found USB drives.
- Step 2: Select the appropriate drive.
- Step 3: Navigate to the file you use to upload.
- Step 4: Click on the file and then press {Ok}. It will now appear in the images tab.

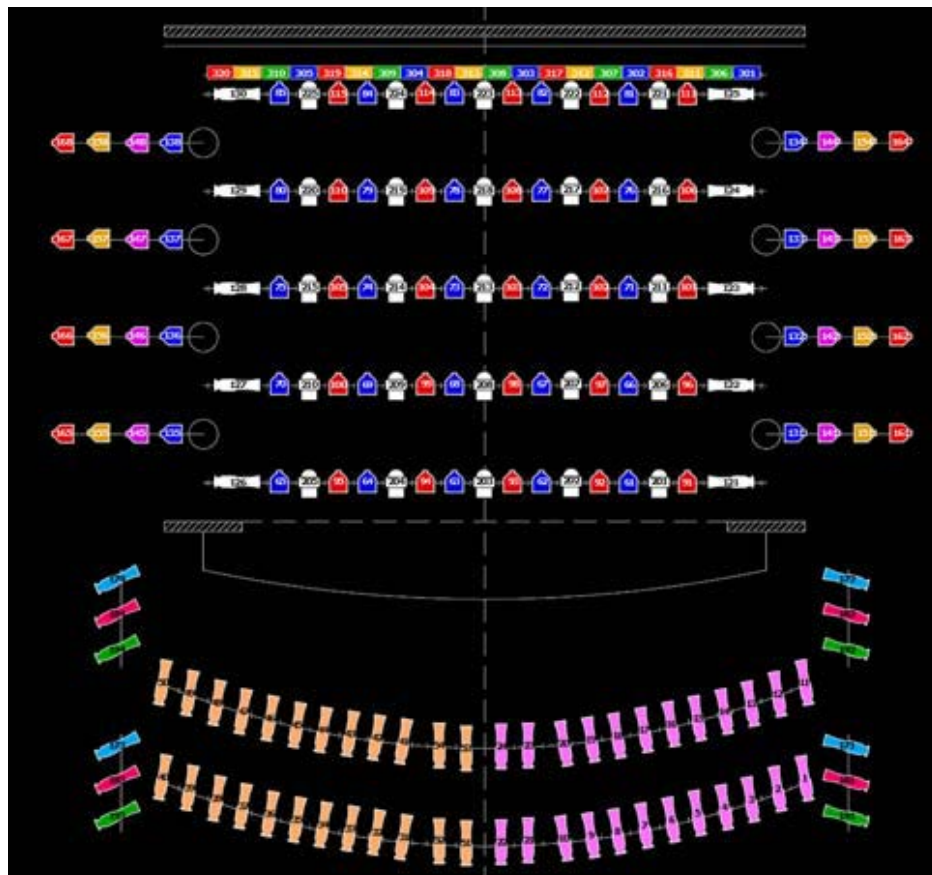
Click on an image to select it. To use as an icon, drag and drop the image onto the magic sheet. You will be able to resize it.

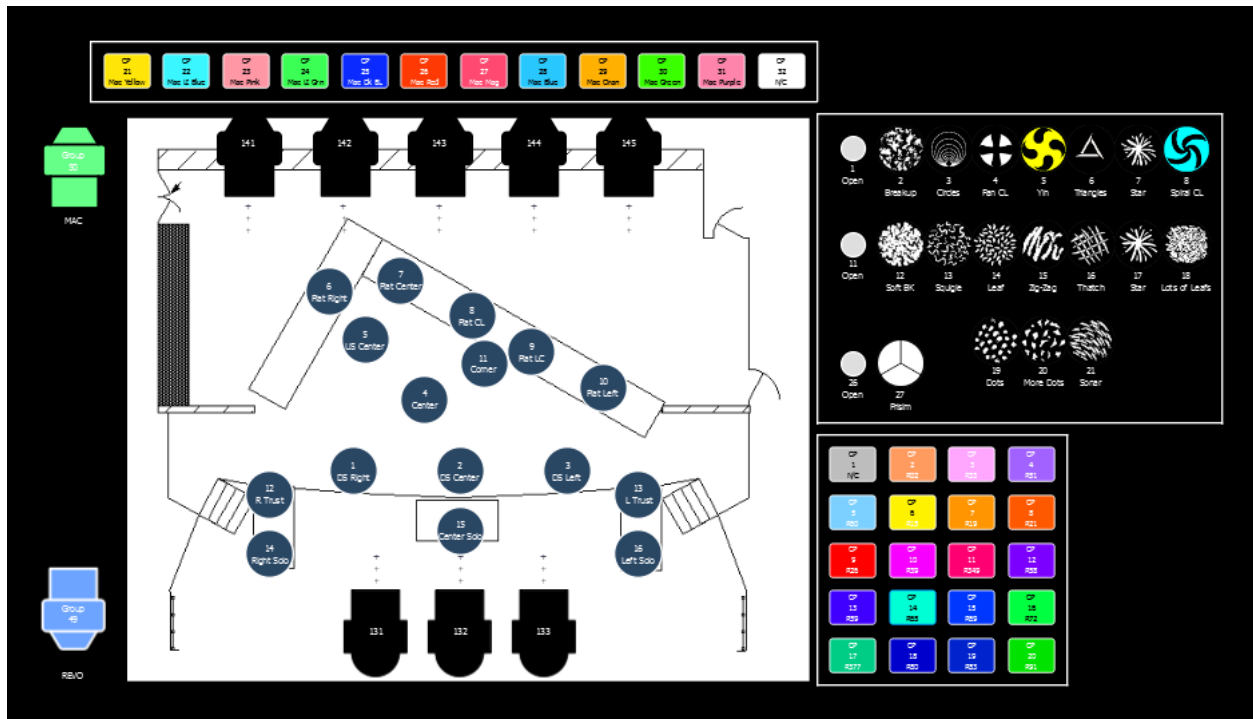
Background images need to be set in the background settings tab. You can also adjust the background settings there.

## Appendix 3: Examples of Magic Sheets



Workbook Layout – Viz program

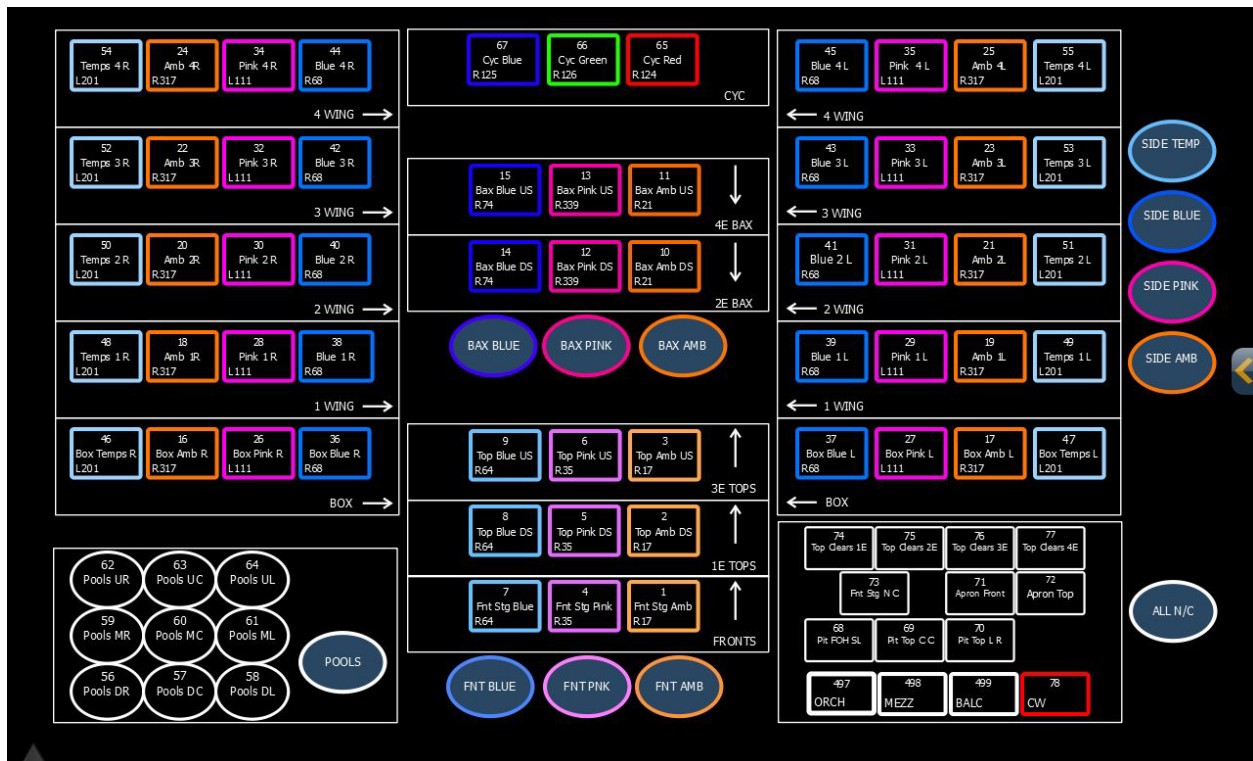




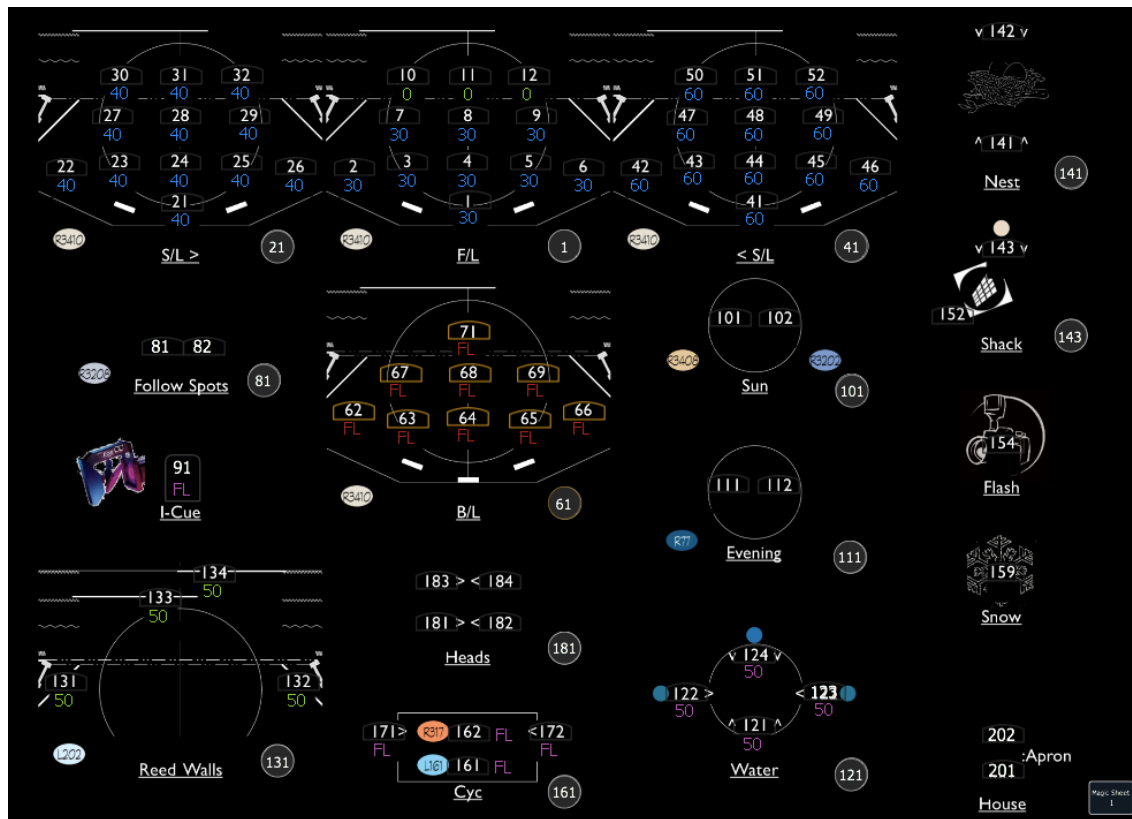
Created by Pete Wiegand, John Jay College Workshop



Created by Karl Wagner, a purpose-built magic sheet for a dance number with illuminated costumes



Created by Steve Bailey – Spring Dance Recital



Created by Joshua Benghiat, "Honk"

