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# Sleight of Hand

Designing a magic-themed Broadway-style musical to fit inside a cruise ship theatre

By: Sharon Stancavage





Photos: Courtesy of Princess Cruises

In early 2015, Broadway composer-lyricist Stephen Schwartz inked a long-term deal with Princess Cruises to create original shows; the first fruit of this arrangement is *Magic to Do*, which began appearing on the company's ships last fall. "Working with Stephen and his creative team on this brand-new show for Princess Cruises has been an incredible honor," says Adrian Fischer, vice president, entertainment experience for Princess Cruises. "*Magic to Do* can only be seen on a Princess cruise, and we're thrilled to offer our guests this exclusive, musical, magical experience created by an award-winning team."

*Magic to Do* tracks major points in the lives of two couples; the magic happens around those moments. "It is all about illusions by way of narrative; everything is narrative-driven," explains art director Alex Calle, who is also CEO of the show's production design firm, Entertainment Design Corporation [EDC]. "We would talk with [director] Gabe [Barre] and [theatrical illusion designer] Jim Steinmeyer to discover what narrative could lend itself to magic, and what type of magic would exist within that narrative."

The EDC team, located in Los Angeles, literally set the stage for *Magic to Do*. "We were charged with assessing how to design a set around these lavish magical props while also being extremely cognizant of the practicality of such an endeavor," says EDC lead designer Jeremy Railton. "It always boils down to the number of backdrops, of legs and borders, prop pieces, and elevator wagons that we can include."

*Magic to Do* is seen on the Crown, Ruby, and Emerald Princess ships. In each case, the theatre appears to be awash in luxurious draped soft goods. "We have these huge soft-good drapery pieces that are fake," Calle says, adding that, as a kind of methodology for the show, "We take the real and make it fake and make the fake stuff real." Scenery was fabricated by Burlington, Ontario-based Great Lakes Scenic, which has supplied many Princess Cruises shows.

The designers' use of such *trompe l'oeil* effects extends to the downstage act curtain, which is really an 18' x 40' printed drop. "We originally wanted the act curtain



A moment from "Houdini," a number that shows Billington's use of color.

hand-painted, to give it an Old World theatricality," Calle says. "But we found it would clash with the rest of the borders and drops that were printed to look like real soft goods. We ended up creating the artwork from scratch."

While Calle and Railton concentrated on the scenery, props were created by EDC's Francesca Nicolas. "Francesca and Alex collaborated on the creation of the illusions with Jim Steinmeyer," notes EDC production manager Alison Picard. "It takes a very highly attuned design sense, as well as an understanding of how each illusion works and the context of how it fits into the show. The show itself is illusion upon illusion upon illusion."

She adds that it was no easy task to build props that function as illusions: "To be successful, some parts of the illusion needed to have certain types of patterns, or the same solid color as other parts of the illusion, or a very specific kind of fabric. Illusions can also have mirrors, so we were concealing mirrors and making them fit seamlessly into the world we created." These scenic techniques draw the eyes to—or away—from specific areas of the prop and conceal the mechanics of the magic that is involved.

Nicolas had to deal with approximately 15 props of different shapes and sizes, all of which are involved in illusions. "They vary from small trunks to big cabinets; there is even an elephant tent, where costumed performers

go in and disappear," she says. "The smallest trunk is 1.5' x 2'. The elephant tent is 6' wide by 8' tall. Several other props have to fit a couple of people inside."

The elephant tent—an illusion box designed by Steinmeyer—was one of the most challenging props. "We had two different trap doors and built fascias around the tent structure," Nicolas says. "I worked with a number of intricate patterns through a myriad of different mediums—vinyl, painted fascias, and printed fabric. Some of this work was done with Great Lakes Scenic and some was done with the costume shop, Silvia's Costumes in LA. Through all of this, I had to stay in constant contact with Jim Steinmeyer, as the construction of how the tent tears apart was linked to the illusion itself. Even the costume shop did a mock-up to make sure they understood the way we explained it, and the way that they needed to actually build it."

### Projection

Another key scenic element is the upstage LED wall. "We're not doing video, we're doing motion scenery, and there really isn't anything that is made specifically for that," says George Johnsen, media designer, of Burbank, California-based MammothVision Inc. "We're using [the wall] for a completely different purpose, and in a completely different way."

Johnsen's content achieves a variety of effects, from the subtle to the obvious. "The opening, 'Before Your Very Eyes,' is a happy family scene with a bright blue sky," he says. "From there, we go to 'Corner of the Sky,' which has a much richer blue sky; when one character has an introspective moment, the sky really does track with everything that's going on emotionally. There really isn't any change in brightness or intensity, but you feel the emotional drift. It gets a little colder, and you feel the angst of the character trying to find a place in the world." Tools used by Johnsen and his team include Maya, Digital Fusion, After Effects, and Motion Builder.

Each ship has a different type of LED screen. "Physically, they're very similar," Johnsen says. "They're from different manufacturers based in China. The difference in the size of each screen is minuscule, but each's pixel dimensions are considerably different." The resolutions are 7mm on the Crown Princess, 9mm on the Ruby Princess, and 8mm on the Emerald Princess. The Ruby wall is the oldest and was most problematic. "It is a brighter wall and, because it's older, when we turned down the brightness, immediately everything went to gray. It was truly ugly," Johnsen says. He went to work on it, eventually getting it to a good place. "The wall itself is just fine," he says, "but the controller is older and didn't really want to accept the kind of programming that we were putting into it. Working with the lighting programmers, we were able to adjust the color content, contrast, and RGB ratios. We re-rendered all the content and also adjusted at the lighting

control within the media server." Johnsen maintained a render farm in a conference room on the ship during pre-production.

Two media servers were used to implement the content: each ship's Hippotizer HD v.3 for playback and MammothVision's Coolux Pandoras Box PRO 5.2 during rehearsal and production. Because the Hippotizer is set up as cue-based for show operations, the time line's time code implementation and multiple layers of the Pandora Server Pro proved to be a much more rehearsal-friendly tool. "We were piling on layers and rehearsing at lightning speed, so being able to start in synch with music and lights from any location was essential to maintaining the artistic flow," Johnsen says.

Working with the upstage LED wall is the iris traveler. "Frankly, LED screens are not particularly attractive to look at when they are dark and they reflect light like crazy monkeys," Johnsen says. "Especially for the magic, we wanted to make sure the black was really black. So having the traveler added a real black behind the illusions. It also allowed us to change the shape of the LED screen whenever we needed to."

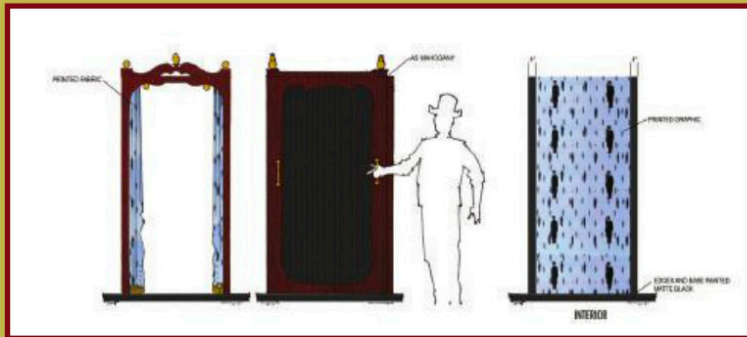
Two Panasonic projectors are used on *Magic to Do*: a 21K for front projection and a 7K for rear projection. They take center stage—so to speak—during the song "Prestidigitation," which features extensive shadow play behind a decorative screen. Johnsen says, "We use the front projector to open the scene. The magician starts it by doing a gag and we use the front projection to map and



The weather look on the upstage LED wall is often keyed to the characters' emotional states.

# THEATRE

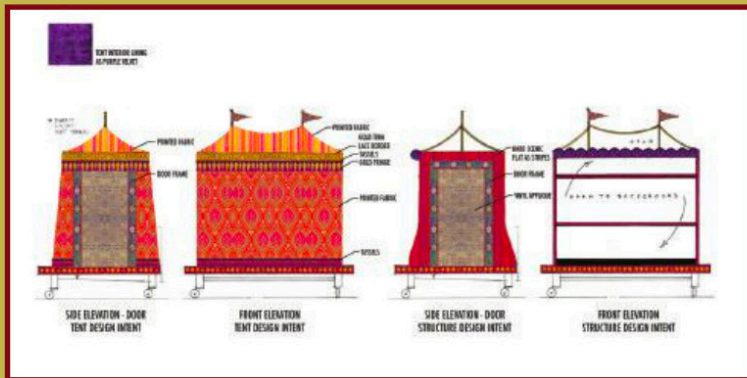
paint scenery, so the shadow play has something to work against. Rear-projected video sets the scene and is the source that the shadow players work against. The projector is a lovely light source because of the lensing; it's incredibly controlled, because it is focused through the



An EDC render that shows the use of patterns in facilitating an illusion.

lens. You get very crisp, defined edges, with shadows that are very, very black.”

One of the biggest challenges for Johnsen and his team was the hours involved. “Our working window was from midnight to about 6am,” he notes. “That’s when Matt [DeJong, Princess Cruise Lines fleet lighting and video operations supervisor], my guy Will [Chen, MammothVision, Inc. lead animator on the project], and I spent overnights in the theatre, trying to get everything



An EDC render of the elephant tent prop used in the finale.

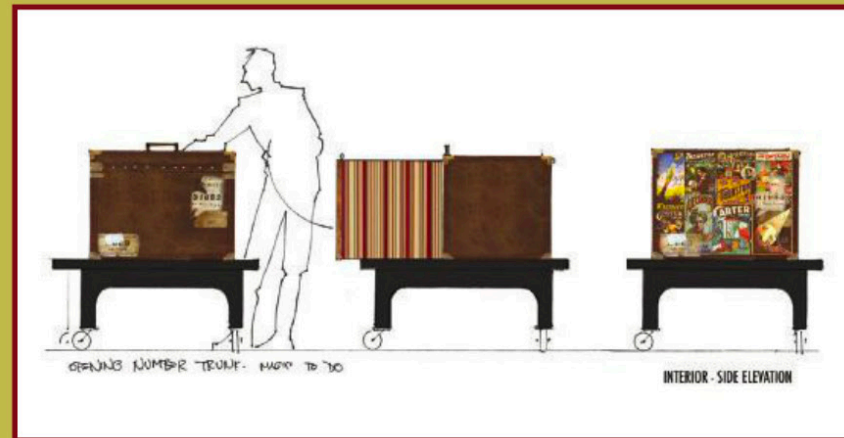
ready so they could rehearse during the day. We would do 12 to 6, then sleep for an hour and a half, do rehearsals at 8:30am, fit in lunch, and then work through the day.” They would catch a nap between 8 –11pm. Still, he says, “Working with Ken [Billington, the lighting designer] was really fun, and I always love working with Jeremy. Gabe [Barre] was wonderful to work with, and Kerry [Lovegrove, manager, programs and product development], Adrian

[Fischer], and Stephen [Grasset, production project coordinator] from Princess were magnificent; it was truly an enjoyable experience.”

## Lighting

Ken Billington says he was brought into *Magic to Do* by Barre: “We have worked together many times, including [the Broadway musical] *Amazing Grace* last summer; Gabe requested me. I’ve also worked many times with Don Frantz, the New York producer who was involved.”

Billington, working with the EDC team, immediately set out to give the stage more of a Broadway feel. “On most cruise ships, the lighting equipment is exposed because the trims are not very high,” he says. “We’re on a ship, with limited stage space. I said, ‘Let’s hide the lights. We don’t need to see lights.’ So [EDC] came up with a series of



One of the many box-shaped magic props in render form from EDC.

borders; now you see the results of lighting, as opposed to where the lighting is coming from. That’s a very big change for cruise ships, and it makes the show look radically different.” The idea of borders was embraced by the entire team. Railton notes, “Ken was enthusiastic about having borders and he positioned all of his lights so he didn’t have to reach across the stage, because normally the border



Renders showing the use of surrealist painter René Magritte’s artwork, which informs the production’s look.



More Magritte, evidenced in both the props and projection content.

would be in the way. He really worked hard to make sure that those borders stayed in and that his lights actually cleared it. It has been years since I worked with a lighting designer who is that specific and organized.”

Billington says, “My direction was to make the illusions work and the show look good; specific lighting is required to make an illusion an illusion. That, of course, required some special equipment and new hanging positions and also working with the creative team as to where the illusions could be placed so I could shutter lights off things you shouldn’t see.”

Since other shows—and activities—happen in the Crown, Ruby, and Emerald Princess theatres, Billington was expected to use their in-house repertory lighting rigs. Therefore, he says, “Before we went into rehearsals, I did say that the equipment had to be renovated: replacing all the moving light lamps, thoroughly cleaning the equipment, replacing the color, and getting new color scrolls.”

Still, Billington had concerns. “My nervousness came from lights that had been hung in a theatre for eight years or more; I’m not saying that the lights are bad but, after a number of years, you sometimes hit reliability issues. It’s a mechanical thing, no matter how well maintained they are.” Fortunately he says, “The equipment looks good.”

The automated instruments on the Ruby Princess are from Philips Vari-Lite; those on the Emerald and Crown are from High End Systems—specifically Studio Colors and Cyberlights. Billington admits, “I haven’t done a show with Cyberlights since the ‘90s, so I had to rethink how it works.” The Vari-Lite rig on the Ruby includes VL3500Q Spots, VL2500 Washes, VL2500 Spots, and VL1000 Profiles.

Nevertheless, the designer felt it was important to bring

in additional gear. “The shuttering of the lights is crucial to the show; otherwise, you will expose how things are done. Princess purchased three Robe ROBIN DL4S Profiles, and they do the bulk of the illusion lighting,” he says. Other new equipment included ETC Source Four LED Series 2 Lustrs, Philips Selecon Acclaim PCs., and Elation Professional ELAR Q1s. In all three ships, the gear list includes Martin Professional Atomic 3000 DMX strobes, High End Dataflash strobes, L&E Ministrips, Strong Super Trouper II followspots (two per ship), Wildfire Blacklight Cannons, and Morpheus Lights ColorFaders. For effects, there are Martin Glaciator X-Stream low smoke machines, MDG Atmosphere hazers, MDG Mini Max fog generators, and Reel-EFX DMX fans.

To enhance the illusions, Billington says, “I did add two pipes of MR16 striplights for general backlight as opposed to PAR backlight. One is located over the apron and there is a double-hung pipe upstage, so that gives me a full-stage backlight wash. This creates a sheet of light in the haze; there is heavy haze in the show that helps hide some of the things we’re doing.”

Billington also worked extensively with choreographer Jennifer Paulson Lee. “I needed low lighting so I have shinbusters—at 18” and about 5’ off the floor.” Used in this application are 26° and 36° Source Fours.

Hanging over the stage on the Crown, Billington has 18 High End Studio Color 575s, 18 Cyberlight Turbos, and ETC Source Four PARs, some equipped with Morpheus M Fader and S Fader scrollers. In the house is a variety of positions, including ladders, toms, towers, boxes, and two front-of-house trusses; those positions feature some of the aforementioned units plus Source Four Lekos and GLP Volkslicht Zs. The moving lights in the house are there to cover scenery, and, consequently, have a single focus.



A scenic render that shows the soft goods hiding Billington's lighting rig.



An EDC render of the left/right Juliet balconies.

The ships are equipped with MA Lighting grandMA2 consoles; *Magic to Do* was programmed by Stephan Gustajtis; Billington's associate lighting designer is Ben Travis. "It isn't lots of flashing lights, it is very much a Broadway musical; I don't know if you ever see the lights move. I do know how to wiggle lights; I'm good at that, but not for this one," says Billington.

For Billington, as for the others, working at sea has its challenges. "You don't get 12- to 14-hour days in the theatre, because it is occupied by other shows and events," he says. "It takes a couple of weeks to tech the show; if we had the room to ourselves all the time, we could have done it in a week." Also, if a unit on the front-of-house truss needs maintenance, "We can't do anything about it until we get to a port." And, he says, "Every time we turn the haze on, we have to call the bridge, and say the haze, smoke, or pyro are going to be used; that way, they can monitor the theatre. If they see a smoke alarm go off, they know we called and we're running smoke until 4pm. These are very real safety concerns, which are good. It's just a different way of working."

## Sound

Danny Fiandaca, of Princess Cruises, who handled the sound design for *Magic to Do*, says, "Stephen Schwartz very much wanted a live band involved; unfortunately, there's no space for them on stage. Before my time, Princess tried having an acoustic band in the house's Juliet balconies, but there were acoustic issues in regard to being in front of the mains, involving time-alignment and latency in the system. This ultimately ended up in the removal of the live band for that production."

Because the Juliet balconies provide the only viable locations, the decision was taken to go with an electronic band in each theatre. "Getting a live natural feel out of the band without creating initial acoustic noise at the source was critical," Fiandaca says. "We had to find suitable samples, and ended up using MainStage and Superior Drummer to get the piano and drum sounds."

Another key to making the band sound live was using point source loudspeakers in the theatre. "We have a [Meyer Sound] LCS frame that acts as show control for sound and we run everything FOH-related through it," Fiandaca says. "This helps with getting an acoustic focus. We make it sound like it's coming from that source, and,





A render of the upside-down tree that changes throughout the seasons, thanks to Johnsen's content.



Projection mapping of the rear screen in render form.

in relative time to where [the audience members] are, things reflect off the walls, giving the same sort of feel as a live room."

In addition, "We have the four-piece band, along with 24 tracks of horns, strings, sweetening, and click track. We tech everything through Pro Tools, because the show is constantly changing and I'm building sound effects."

Once the pre-production is concluded, playback is moved to a Radar 24 track unit made by iZ Technology. "It's a very robust hard disk recorder and playback unit; it's just solid. The unit doesn't edit particularly well or have the bells and whistles of Pro Tools, but, as far as playback, it's not going to crash on us," Fiandaca notes.

Unlike the lighting and the video rigs, the sound system is the same on all of the three ships. "It's an Apogee rig consisting of about 45 various speakers, including the surround," Fiandaca says. The surround is comprised of 12 Apogee AFI-Is, while the main PA is comprised of six Apogee AE-9s and two AE-11 subs. There are also four more Apogee AE-9s for downfills and eight Meyer MM-4s for front fills. Also, the designer says, "We have Renkus-Heinz PNX61s in two rows of four up in

the ceiling in the delay zones. Four Renkus-Heinz PNX112 units function as delay subs."

The Princess ships have AVID Mix Rack systems with Profile surfaces at the front of house. "It sounds great because it's made by Avid, and they have a recording background. The preamps are great; I really like their snapshot management," Fiandaca says.

Ease of use is also critical, since front-of-house sound engineers are replaced every six months. "Obviously, we have to consider the turnaround of our sound engineers; if somebody coming in new is not familiar with that console, I like something they can walk up to and figure out quickly," Fiandaca says.

*Magic to Do's* band hasn't any microphones. On stage, Fiandaca says, "We're using DPA [d:fine] 4088s. I love them. For boom headset mics, they're the best that I've ever used. We moved to them for this show, but we decided to implement them for all the shows. We were worried about the look, because they are a bit larger, but we did a test and the director was happy enough with the sound improvement to overlook the visual part of it," he adds. 🎧