

# LIVE DESIGN



## WORLD OF COLOR AT DISNEY CALIFORNIA ADVENTURE

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Check out the video footage and full story on the new *World Of Color* Show At The Disney California Adventure Theme Park

Steve Davison, Walt Disney Imagineering Creative Entertainment's vice president of Parades and Spectaculars, likes to compare the new [World of Color show at the Disney California Adventure theme park](#) to Olympic figure skating. "The secret to *World of Color* is to create a kind of ice skating effect," he says. "I used that analogy a lot when we were working on the show. It has to tell a good story and seem effortless while it's doing it."

True, like *World of Color*, figure skaters do use water, in the form of ice, but even Evan Lysacek would most likely agree that he had fewer elements to contend with en route to winning his gold medal. *World of Color*'s water, for instance, comes in the form of fountains—almost 1,200 of them, some shooting higher than 200'—as well as a mist screen that can become 380' wide, and the show's setting itself, the Anaheim park's 3.5-acre, 15 million-gallon Paradise Bay lagoon. Add to that Disney animated film scene projections, color effects, lighting, lasers, fog, fire, and music, and you have a total of more than 18,000 points of show control.

Five years in the making, the 26-minute show that takes place up to three times nightly during the summer and will be presented at select times of the year, premiered to the public June 11, drawing crowds that lined up hours before the park's opening to secure prime viewing spots. It takes its name from the NBC 1960s television series [Walt Disney's Wonderful World of Color](#).

Eight types of fountains grace the show, among them four butterfly fountains, which create a graceful fluttering effect; six dancer fountains, with intertwining swirling dual nozzles; 10 geysers that shoot up more than 200'; 12 flower spouts, providing streams emulating blooming buds; 76 single-water whips with heads that can turn in any direction; 65 dual-water whips to create vertical patterns and fan-like designs; more than 400 chasers, so-named because their rapid sprays produce a chase effect; and more than 600 grid fountains, positioned 8' apart, whose network of vertical sprays creates large-scale designs. Disney worked with [The Fountain People, based in San Marcos, TX](#), to develop the fountain effects.

The fountain control system was devised via a partnership between Disney, [MA Lighting](#), and [Fisher Technical Services, Inc. \(FTSI\)](#). The FTSI custom interface system receives input from grandMA 2 consoles using MA-Net protocol and outputs EtherCAT industrial machine protocol to the fountain systems. The system was conceived by technical producer Chuck Davis and principle fountain programmer and designer Jason Badger. The entire operator interface comprises four grandMA 2 consoles, seven NPUs, and a replay unit.

"Most fountain controls are archaic," says Bill Slusser, one of the show's technical directors, who works in the Disneyland Resort's Technical Services division. "We felt that the fountains were very much like a moving light, and we wanted to control them in that way."

It took about two years to figure out how to light the fountains, according to Davison, so new LEDs were developed specifically for *World of Color* by The Fountain People, leveraging the company's existing doughnut LED fixture. "There was a lot of playing around with color," he says. "Every single fountain has its own individual light source. I can blend each color seamlessly and get different shades." Each fountain also has multiple points of control for height and water angle.

A different sort of illumination comes from fire, for dramatic story points and peaking during the **Hellfire** segment that features scenes from *The Hunchback of Notre Dame*. The system uses two sizes of flame heads from Groupe F Pyrotechnic to create fireballs and fire jets that can be precisely timed to the music. The flames use a combustible liquid, and the system has been used for five years on Disneyland's Sleeping Beauty Castle for fireworks. Here, the fire jets are mounted on water whip moving head units for a brand new effect.

Also on view: sparkling, glittery effects conceived by noted laser designer Claude Lifante, via four **Phaenon 15500 RGB diode-pumped lasers** that mix for 13W of light. They were provided by Sollinger. Disneyland Resort's Ken Wagner, the technical director primarily responsible for the laser projection system, spent nine months working with three government agencies—the FAA, FDA, and its subsidiary, the CDRH (Center for Devices and Radiological Health)—to obtain variances for the lasers' use.

Fabrice Kebour handled the projection design; images from numerous Disney films plus *The Wonderful World of Color* play across the water screen. My big thing was how to get a 400' wall of projection to happen, Davison says. Most of it is immersive. How do we put [viewers] in the middle of a stampede [*The Lion King*], under the sea [*The Little Mermaid*, *Finding Nemo*], in the world of *Pocahontas*? We had half of NASA in our control room, he jokes and then clarifies, a robotics company that works for NASA.

To retain high-definition quality, the team created a system of multi-plane projection, with characters on multiple walls of water. Twenty-eight **Christie Roadster S+20K** projectors are served by 12 **Green Hippo Hippotizers** and routed via a **Vista Spyder** used to blend and setup the large multi-projector screens.



The animation sequences comprise more than 100,000 digital images in several styles. Animators created new sequences and updated older ones. For a *Pocahontas* segment, for instance, Pocahontas was animated in one spot, Davison describes. You had to paint her with a brand new CGI river and get her to come in and out of it at 10 different points. Among the more unusual offerings: sand animation by South Lake Tahoe, CA-based artist and animator Corrie Francis during *Aladdin* and animation using the 12"-high paper sculptures of Los Angeles-based artist Megan Brain in *Aladdin* and *The Little Mermaid*.

To accompany the visual, it fell to Jeremy Rynders, audio system designer for Disneyland Resort Technical Services, to come up with a state-of-the-art sound system based on **Meyer Sound loudspeakers** to meet stringent noise regulations. We did strict calculations, Rynders says. The show had to be inaudible at the property line, only 800' away. The tech team began researching equipment four years in advance. Most of it didn't exist, he says. *World of Color* features the world's first installation of Meyer's D-Mitri digital audio platform, a multi-channel digital audio processing and distribution system with extensive control and networking capabilities. The show's sound includes music recorded in London by a 100-piece orchestra and in Tennessee by a 100-voice choir, performing a new score by Mark Hammond incorporating the films' music and Richard B. and Robert M. Sherman's *Wonderful World of Color* theme song.

As if creating all the show elements weren't enough of a challenge, the equipment had to be submersible. The stage platform is longer than a football field at 120 yards; the underwater system utilizes three rooms, each weighing about 30,000lbs, that house the control and network distribution systems and travel up and down with the platform during the performances. The superstructure was built in a temporary shop on a nearby parking lot, taking up 500 spaces; most of it was installed in the lagoon in just two nights, using what Slusser says is the largest mobile crane in North America, provided by **Mr. Crane of Orange, CA**. During performances, a stage manager calls the show from a booth under a bridge; there is also a control room in a backstage park building.

Like a kaleidoscope, *World of Color* is designed for change, adding a holiday-season theme, for instance, or using scenes from other Disney films. This system is very flexible; it can be reconfigured, redesigned, repainted, Davison says. It's as limited as your imagination. Attendees to *Live Design*'s All Access LA event will see *World of Color* during Backstage Disney Day on December 10, an add-on to the first-ever Concert Master Classes. [For more information, click here.](#)

**Libby Slate is a Los Angeles-based freelance journalist who regularly covers the craft and art of live performing and other entertainment. Her other credits include the Los Angeles Times, Performances, and Emmy Magazine.**

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