

# Application Story

## Solomon Victory Theater at the National World War II Museum



*Bright and brilliant colors from three Christie Roadster S+20K DLP® projectors displayed on a 120ft x 36ft curved screen become the canvas to replay history*

### Christie® proud to screen “Beyond All Boundaries”

From the invasion of Poland in September 1939 to the end of the war in August 1945, World War II touched, and continues to touch, the lives of millions of people throughout the world. Although countless words and pictures have documented the impact of this event, none tell it like “Beyond All Boundaries,” a powerful and poignant 45-minute 4D experience tracing America’s participation in the conflict from the raid on Pearl Harbor to the final surrender of Japan.

Playing eight times daily inside the Solomon Victory Theater at the National World War II Museum in New Orleans, Louisiana, “Beyond All Boundaries” audiences witness rare and graphic footage of the D-Day invasion, the Battle of Iwo Jima and numerous other key battles in a mesmerizing display made possible by Christie® technology.

“The movie is very intense and real,” said Paul Parrie, associate vice president of technology for the museum. “It took five years to put together and there was a point during the scriptwriting where (executive producer) Tom Hanks said, ‘This story would be much better told from the viewpoint of the veterans instead of the narrator’s omniscient point of view.’ They re-wrote it with quotes from the veterans, which have a huge impact, so condensing it all down to 35-45 minutes in two parts was quite a challenge.

“Logistically, we were installing the projection equipment while the theater itself was still under construction. It was a juggling act of what could be done and when – including ensuring that the projector locations were dust-free.”

“Beyond All Boundaries” is a unique presentation. Unlike conventional theaters with a single screen, five screens and nine projectors are used across three planes of projection surfaces at the 250-seat (including six seats designed for wheelchair access) theater, creating one of the most complex installations Christie has participated in.

#### Customer:

Solomon Victory Theater at the National World War II Museum

#### Location:

New Orleans, Louisiana

#### Industry/Market:

Museums and attractions

#### Requirements:

- Identifying the best projectors for presenting bright, clear images on five screens in the 250-seat Solomon Victory Theater.
- Creating a 3D visual display as part of a 4D experience.
- Three planes of projection surface.
- Edge-blending and image warping capabilities for one 120ft x 36ft curved scrim and a second 115ft x 26ft screen behind the scrim.
- Choosing the best projector for three screens, each measuring 8ft x 7ft, placed in front of the scrim.

#### Summary:

At the Solomon Victory Theater in New Orleans, Louisiana, Electrosonic chose Christie projectors to share the sights, props and sounds of World War II in “Beyond All Boundaries”, an engrossing and emotional film that highlights the American participation in the conflict. Displayed on five screens of various sizes across three projection planes, the impact of the 4D experience is unforgettable and Christie is proud to be part of it.

#### Products:

- Five Christie DS+10K-M projectors
- Three Christie Roadster S+20K projectors
- One Christie Roadster HD10K-M projector

#### Results:

- Nine Christie 3-chip DLP® projectors bring life to the experience of World War II in bright and brilliant colors.
- Complex image warping and edge blending (using Christie Twist™ technology) ensure success of this challenging installation.

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A 3D effect was created by using a transparency on the main scrim and five Christie DS+10K-M projectors shining on the secondary screen.

### The main presentation of “Beyond All Boundaries”

Entering the theater, the audience is greeted by stage curtains covering a nearly 180-degree field of view, that, when fully parted, reveal an enormous 120ft x 36ft concave and transparent scrim.

Three Christie Roadster S+20K DLP® projectors – with SXGA+ resolution, 1800:1 contrast ratio and 10-bit image processing – create the razor-sharp images, edge-blending and bright, brilliant colors required to project the dramatic images on the massive scrim. Mounted in a projection booth, the projectors are aligned to achieve a single focal point.

“We chose the Christie Roadster projectors for their color quality and brightness,” said Steve Calver, project manager for Electrosonic, who was responsible for the design and integration of the audio visual and show control system. “We also like the constant intensity lamp setting. This feature helps maintain the original output level of the projectors, providing an even edge blend as the lamps age.

Three 8ft x 7ft pit screens are housed in a 25ft deep trench in front of the scrim. Similar in material to an artist’s canvas, the hard surface screens are off-white, stretched across a frame, and speckled at the edges. During the show, one or more screen panels rise and display images from the Roadster HD10K-M projector that is solid-mounted in the lighting grid above the projection room.

“Soon after sitting down, audiences hear, ‘We interrupt this broadcast of the Army-Navy football game ... Pearl Harbor has been bombed.’ The music starts, the pit screens pop up and we see the destruction,” said Parrie. “The main curtain is open only a third of the way at this point but as the war progresses, it continues to open.”

“The Roadster HD10K-M is always projecting at 1920 x 1080 resolution and 10,000 ANSI lumens,” added Ramzi Shakra, senior marketing manager for Electrosonic. “The content was

synchronized with the sequencing of screens being either on or off-stage. The content was then masked in the field to match the movement of the screens before being encoded, which enhances the illusion of each screen having its own separate image source.”

A traditional screen is 30ft behind the scrim. “There is a truss system behind the main scrim from which five blackout drapes hang. Periodically, we raise one or more drapes and expose the second screen,” explained Parrie. “That screen is 115ft x 26ft and displays images from five Christie DS+10K-M projectors mounted on another truss behind the scrim.

“You don’t see through the scrim until we’re in Guadalcanal and showing the depth and density of the jungle.

“We also use the second screen to distance the viewer from something like the firebombing of Japan or Dresden. You want to evoke certain emotions but you don’t want to overwhelm people.

“For the back screen, which had a short throw distance and steep 35-degree angle from the scrim, we needed to get the images as large, bright and clear as possible,” said Calver. “We chose the Christie DS+10K-M projectors – with a short throw fixed lens relying on the warping and constant intensity features – to achieve this.”

The Christie DS+10K-M projectors offer high brightness at 10,500 ANSI lumens, 1400 x 1050 native resolution, 10,000:1 contrast ratio, dual mercury lamps, and embedded Christie Twist™ image warping and edge-blending. Christie Twist™ software combines images from multiple projectors into a single seamless image and adjusts it to fit the screen.

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Steve Calver, project manager, Electrosonic

“We’ve done several complicated setups but this was different because we had a transparent scrim in front and then a screen behind,” said Shakra. “We integrated the entire AV system including sound, 4D effects, and the fire and intense light from the battles, into it all. We also had to integrate props into the production; all of this creates a perception of depth with the two screens and the real objects.”

The 4D effect includes gun turrets and a 25ft German guard tower rising from the pit, seats shaking as tanks rumble across North Africa, tank traps between the two screens, and snow falling on the audience during the Battle of the Bulge.

## A Poignant Finale

Parrie describes the conclusion of "Beyond All Boundaries"

*"At the end of the movie we show footage of people celebrating in Times Square and then you see soldiers come up from backstage and stand on the riser – which is elevated. A spotlight sweeps across the line of soldiers and some morph into old age and back into civilian clothing."*

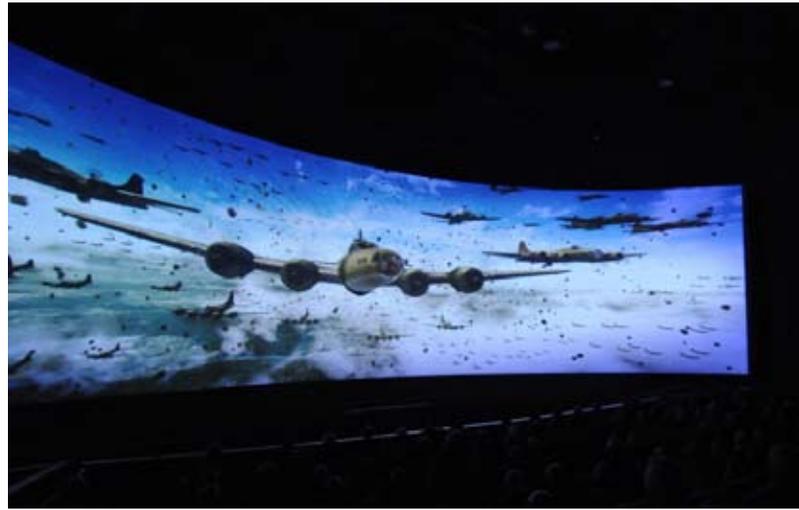
*"The aged soldiers/civilians walk down the steps, do an about-face and salute the (young) soldiers that are still on the riser. The soldiers salute back, drop their salute, do an about-face and walk into limbo. That signifies the people who fought and didn't come home. It's a really, really poignant moment and puts a lump in people's throats. The movie fades to black and then the words 'Dedicated to all those who sacrificed to preserve liberty' appear. We leave the theater black for 8 to 10 seconds because we want people to reflect on the fact that people died over there and people's lives changed because of this world war."*

*"The Christie projectors have been awesome and the images are rock solid; we are very pleased."*

*Paul Parrie, associate vice president of technology,  
National World War II Museum*

The Solomon Victory Theater at the National World War II Museum presented Electrosonic with a noteworthy challenge: present a historically significant film, with props, onto five screens – including a 120ft x 36ft concave and transparent scrim – using nine projectors across three planes of projection, without overwhelming the audience or detracting from the message. Thanks to the high brightness Christie projectors and Christie Twist™ technology, the flawless screening of "Beyond All Boundaries" continues to resonate with audiences from around the world.

"It took a combination of the quality projectors from Christie and the creative thinking from Electrosonic to make it all come together. We were honored to be part of it," Shakra concluded. "We're now seeing theme parks and museums presenting an experience that is beyond showing a movie. I envision other productions pushing the envelope like this."



Vivid images mesmerize audiences



The interior of the Solomon Victory Theater

"The Christie projectors have been awesome and the images are rock solid; we are very pleased," Parrie concluded. "We're planning to build more spaces here at the museum and I'm pushing to keep Christie in there. I'm a fan of staying with what works."

### Contact Christie

Contact us today to find out how you can benefit from Christie projection and display solutions.

Photos courtesy of the National World War II Museum

#### Corporate offices

Christie Digital Systems USA, Inc  
USA – Cypress  
ph: 714 236 8610

Christie Digital Systems Canada, Inc.  
Canada – Kitchener  
ph: 519 744 8005

#### Worldwide offices

United Kingdom  
ph: +44 (0) 118 977 8000

Germany  
ph: +49 2161 664540

France  
ph: +33 (0) 1 41 21 44 04

Eastern Europe and  
Russian Federation  
ph: +36 (0) 1 47 48 100

United Arab Emirates  
ph: +971 (0) 4 299 7575

India  
ph: (080) 41468941 – 48

Singapore  
ph: +65 6877 8737

China (Shanghai)  
ph: +86 21 6278 7708

China (Beijing)  
ph: +86 10 6561 0240

Japan (Tokyo)  
ph: 81 3 3599 7481

Korea (Seoul)  
ph: +82 2 702 1601

#### Independent sales consultant offices

Spain  
ph: +34 91 633 9990

Italy  
ph: +39 (0) 2 9902 1161

South Africa  
ph: +27 (0) 317 671 347

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