

## **The Magic Lantern Castle Museum**

**By Dale Dougherty**

The magic lantern is the first projector, an early example of how projection technology could be used to tell stories, a development that has led to what today is an entertainment industry built on more and more complex digital technology. The magic lantern projected images for dramatic effort, projecting large-scale images as part of story that could make us laugh or cringe while watching a focused light in a dark room.

Collecting magic lanterns became an obsession for Jack Judson late in life. After retiring from business, he began collecting hundreds of magic lanterns mainly from the 19<sup>th</sup> Century. He not only had to learn how to build and organize his wonderful collection of magic lanterns and research the history around them; he had to learn how to create his own museum to preserve the treasures he's gathered. He created "The Magic Lantern Castle Museum," which is hidden in a stretch of strip malls in San Antonio, Texas. On the outside, this building, once a disco, is fairly non-descript with fake castellations as its only flourish. Inside, Jack transformed the space into a private den into which he can invite others to share his collection. It also includes a workshop where he himself repairs the magic lanterns to keep them in working condition.

I took a tour of the museum and then sat down with Jack to explore the rich history of this fascinating technology, which is the predecessor to PowerPoint slide shows, animated cartoons and theatrical film projection.

DD: The first mention of magic lanterns is in the 1600s.

JJ: The first published account that I know of is a book written by Athanasius Kircher, a German Jesuit priest in 1641, using its Latin name 'lanterna magica'. In the second edition of the same book, there are some images of a magic lantern shown in operation. The woodcut engraving, however, is inaccurate; the slides are shown with

the figures upright, and the image on the wall is upright as well, and that doesn't normally work with optics. Usually you have to put the slide in upside down.

DD: As we go through your museum, the first thing we see is a statue of a lanternist.

JJ: The lanternist was a traveling showman that carried a magic lantern on his back, and out front he's carrying a hurdy gurdy, and he would be walking, probably, into a town square somewhere in France, where we presume a lot of it began. He would announce by playing music and speaking loudly, probably -- or to any passerby, that he would be glad to show them what he does, maybe for food, who knows? He might be invited into a home, or a church, or something, and show these things, where he would slide pictures painted on glass through this machine that was lit by a little oil lamp. It was basically a tin box with a lens at the front.

DD: What was a hurdy-gurdy?

JJ: The hurdy gurdy is really a violin in a box, but instead of being stroked by a bow, it is stroked by a wheel that is turned with an outside crank. On the front of the box is a set of keys that can change the pitch and tone of those keys, to play music with it. He would play the hurdy-gurdy to attract attention.

DD: The lanternist was essentially a storyteller who had images to accompany his story.

JJ: What was a box that you might carry around with a candle or an oil lamp in it of some sort, just for light, was now turning out pictures, and that was very scary to people who had no education whatsoever. Frequently, they did these things in total darkness, like in a crypt, which was very spooky, and they showed pictures of skeletons and

devils, and such like that. It just scared everybody like crazy. They also did, sometimes, projection from behind the screen.

They would have a light-colored cloth, and they would wet it to make it more translucent, and they would project from the backside of the screen, and the image could be small, or get larger, and this was quite alarming to some people. When they learned what was happening – they thought it was magic.

DD: So the light source at this point is . . .

JJ: Oil lamp, or a candle, but mostly it was oil lamp, because candles turn out one candlepower, which is not much.

DD: Even an oil lamp is kind of flickering. It's a yellowish light.

JJ: It's a terrible light. The next evolution, of course, was trying to improve the light -- the amount of light, by adding -- instead of one little wick, a bigger wick or two wicks, or three wicks, or four wicks. They were able to grind better lenses, or they developed better-quality lenses. Then, of course, they were using fire -- that was about as far as you could go with burning oil or some kind of a liquid, burning agent.

DD: Some lanterns used two sets of lenses?

JJ: They had what they called a condenser lens, which is right at the front of the box with the light in it. What that usually was, was either a plain convex lens, or a double convex lens, which acted to focus the light from the source into a coherent path. It would pass directly through the image area on the slide, and then the projection lens out front could see that clearly, and project it on out. That's the normal configuration.

That exists even to the day of the latest slide projector. They still had a condenser lens, and the projection lens out front, which is focusable, generally.

DD: Let's talk about the slides. The slides are made of glass inside of a wooden frame. They're hand-painted.

JJ: Exactly. A lot of them -- in the early days, were simply freehand paintings on glass. They're miniature paintings, but, of course, made to blow up to incredible sizes at times. Some of them would be three inches in diameter, some of them even smaller. It was the earliest AV.

DD: That lanternist was the AV man.

JJ: He was it!

DD: Then the slides begin to change because of photography.

JJ: That's right -- late 1830s to 1840 -- we got photography. The earliest photography didn't contemplate projection. They were making pictures on metal or paper. Fortunately, a pair of brothers from Germany, William and Frederick Langenheim -- William Langenheim fought in the Texas Revolution, by the way, and Frederick went to Philadelphia, and started up a photography business. The Langenheim brothers are credited with inventing the first workable method of taking a picture on glass and then making a negative, and then making a clear positive, which could then be projected. And, of course, it was black-and-white. That was all they had. They didn't have color photography -- certainly none of practical use.

DD: The process was to paint a larger picture and take a photograph of it, and then do this transfer process to create a slide, which was then hand-painted to add color.

JJ: To hand-paint in all the details required incredible skill and eyesight, and a lot of technique.

DD: Over time, the presentations began to become more elaborate.

JJ: Yes, because then they could take characters out of, say, Tennyson's poems, or "Les Miserables," and show the characters in great detail, because they went with stories that were well-known. They were published. They could then bring a story to light, instead of just reading it in a book, which, is where we ended up with movies.

DD: A lot of the language of film editing, today, originates with the magic lantern.

JJ: The first motion of any kind, or any effect, that we now take for granted -- whether it's electronic, or on motion-picture film, or digital -- was done when they learned that you can move one piece of glass past another piece of glass, and cause things to darken out, or to change, and it gives the simulation of motion. They also learned that they could dissolve -- a word we use today -- from one image to another by raising the fire light in one, and lowering it in the other one using a very-nearly identical slide. One would be day, and the other one would be night -- of the same image.

DD: A house seen in the daylight would be dissolved into a house at night.

JJ: At night, the lights came on in the windows, and the moon was up. You could be telling a story that takes place with the passing of the seasons.

DD: Did you need to have dual projectors?

JJ: You would, generally, have to have at least two sets of lenses for that. That way you could dissolve smoothly without interruption of the viewing.

DD: In your museum are the handbills to promote magic lantern shows. The programs were not just stories, but also lectures -- travels in England, for example.

JJ: Yes, and there are many on the evils of drinking. That was a big movement in England called "The Band of Hope," and their motto was "water is best." A very popular thing was catastrophes -- the Youngstown flood, and the Galveston hurricane, and the terrible fire somewhere, not to mention the San Francisco earthquake. As one fellow wrote in his autobiography, which I've yet to publish, people seemed to love to go see horrible stories.

DD: Very different than a newspaper, which you might read by yourself. A magic lantern show is a group of people sitting in a room, watching "horrible" images on a wall.

JJ: They also did science lectures. They would show people all sorts of of things. Some of it was humorous. Some of it was educational. Some of it was religious. They used them in churches to project hymns.

DD: One area in your collection is from the secret societies using the magic lantern for initiation ceremonies, and to tell secrets that only the members know.

JJ: Masons, for instance.

DD: Tell me about the hood.

JJ: A marvelous device known as the hoodwink. Those to be initiated were fitted with what looked like a set of goggles attached to a leather hood. The goggles had a lever on either side where you could flip open the eyepieces to see or close them to keep the initiate in the dark. They strapped it around the initiate's head, and led him into the inner chambers, where he was shown a light show presentation that told the secret story of the lodge. That device gave rise to the term "being hoodwinked."

DD: The museum has a collection of magic lanterns made as toys.

JJ: There was a huge industry. Everything that Daddy has, the kid gets too. While it's never quite as much as Daddy's, still it's pretty cool. Most toys were made in Nuremburg, Germany. There were at least five makers that we know of there, and they made hundreds-of-thousands of various sizes and shapes.

DD: Mostly running off small oil lamps?

JJ: Yes. They didn't really project very well, but the kid in his little room could set one up, and project three or four feet onto a wall, and see what was not a very good image from a decal that had been stuck onto a piece of glass. They were lithograph-printed images. They were a little fuzzy, probably.

DD: From being a toy or a plaything, the magic lantern comes up to be part of the early film industry starts in the late 1800s, and we see Edison's home kinoscope.

JJ: You had the home kinoscope, and, of course, then the projecting kinoscope, which was the one that was used by more professional people. You could project films but

you could not buy them; you had to rent them. Netflix of the day, I guess you might say. There's nothing new.

DD: Right.

JJ: You could buy, for 50 cents apiece, the slides that had little, tiny images that you could project -- pictures in France, or England, or the holy land.

DD: Those early films, though, were not very long were they?

JJ: No, they were very, very short. The earliest ones were 50 feet, which is basically the length of the table that George Eastman could lay out the film -- liquid -- and let it solidify, and then roll-cut strips that were 35 millimeter -- long, and so at 16-frames per second, it doesn't last very long. At some point, I recall in an autobiography where this old man talked to Edison about it in Orange, New Jersey about how to show these, and he said, "Well, just run them through three times so that they get their money's worth." There was no story. They had no message -- no nothing. They were just images of people moving, and, in fact, they were not moving. They were really sequential stills.

DD: Tell me more about the Edison home kinetoscope.

JJ: Films for the Edison home kinetoscope were printed in three strips so the film could be run forward, then play again reversing the reel and then again forward. It was a very unusual thing.

DD: These are hand-cranked machines.

JJ: They're all hand-cranked. It's a wonderful, clicking, mechanical sound that we don't hear anymore.

DD: There's a wonderful collection here, and it's a beautiful thing. You started this in 1986 after you retired. What was your first thing that you bought?

JJ: I worked for a large, international organization. I was visiting our London office, and I asked the the manager of the office, "What's to do here in London?" I hadn't been there before. He said, "Well, go to a street market. We have them all the time here." I went to one. I bought what was purported to be a magic lantern, and I brought it back - - when airlines would let you bring things back in your luggage. After doing a lot of research, I found out what I bought was not a magic lantern but a lantern enlarger. That was my first comeuppance.

DD: This has become an endless source of exploration for you.

JJ: I call it a "terminal virus." I caught it and I don't think I'm ever going to get over it. I love it. Nowhere else in the world is there an aggregation where can you go and see the complete variations on how it was used, the kind of things used and what they were used for. It really was A/V in every sense of the word and developed into motion pictures. Man has been fascinated by projected imagery ever since there were shadows dancing on the walls of a cave.

DD: What's your favorite projection?

JJ: The Rat-Catcher slide is legendary. Basically, it was the hit of the show and I use it still. There's a man recumbent in a big old bed in the 1800's, and he's got a candle burning on his nightstand, and he's under the covers. He's got a long black beard and

a nightcap on. One of the levers on the side of the magic lantern moves a piece of glass up and down, so that his jaw opens and closes as if he was snoring. Then you have a crank on the other side and as you turn it, coming up from under the bed and up over covers comes a rat to investigate the man snoring. It gets closer and closer and it goes in the man's mouth he swallows the rat. The audience goes nuts.

The Magic Lantern Castle Museum follows the use of magic lanterns up until the first-generation of film projectors. Judson decided to stop collecting there at the advent of cinema. "Walt Disney began working for the Kansas City Slide Company as an illustrator for magic lantern slides," Judson added. "That's how he got his start. Of course, everybody knows how he went on from there to California where he created cels that would become frames in a motion picture. All of this stuff began with the magic lantern."

URL: <http://www.magiclanterns.org/>