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All That's 3D Is Not Holography: Disney World's Haunted House

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Ghosts are fascinating creatures of the supernatural. They float through the air, appearing and vanishing, possessing a translucent quality as if made of vapor. Usually inhabiting old houses and grave yards, their more recent residence is a building in Disney World appropriately called the "Haunted Mansion". How these ghosts came to be has been a long-kept secret of Disney World. Many people believe them to be elaborate holograms, for they are three-dimensional, appear to be translucent, and have the characteristics of a hologram. This, however, is a misconception which is furthered by the fact that few people have a real understanding of holography.

Disney World is also known as "The Magic Kingdom," and like a true magician, it has never revealed the mechanics of the ghosts, knowing that an illusion is never as effective once the trick is discovered. I had heard many people insist that these ghosts are holograms; others stated that they were created by lasers. What bothered me about their beliefs is that the art of holography is still in its infancy. It would require a great deal of time and money before such effects could be possible and still, Disney's expectations would not be satisfied. It was this bafflement that enticed me to travel to Disney World to discover how the ghosts really "haunt" their Mansion.

Upon entering the Mansion for the first time, I was greeted by an eerie presence. The rooms are dark and covered with dust and cobwebs. A cold, clammy draft blew across my shoulder. The journey proceeded through the house on a "Doom Buggy" which is designed to turn around, tilt forward and backward, and turn one's attention only in the direction desired for one to observe the full effect of the attraction. Like a skilled magician, Disney has total

control, having one see only what he wishes, and not observe what one shouldn't.

The ride through the Mansion is quite effective and one of the most enjoyable and popular attractions at Disney World. The total effect is impressive. After several journeys, I learned what to expect, and began to decipher how the ghosts are manufactured. It is readily apparent that they are not produced by holography, but by an elaborate combination of illusionary effects, which make use of the latest in technology mixed with nineteenth century magic. The entire production is controlled by a sophisticated computer system.

The "talking heads" present an interesting illusion. "Madam Leota's" head appears in a crystal ball and chants a message to the visitors. Near the end of the journey there is a group of singing marble busts. At the exit, a small doll-like figure, "Little Leota", bids farewell and extends a "ghoulish" invitation to come back again. All of these apparitions are created in the same manner. The facial features are provided by a 16mm film which is projected into a faceless mannequin head. A closer look at "Madame Leota's" head reveals an image on the glass of her crystal ball, caused by the projection entering the glass just below her chin.

Other ghosts and ghouls are translucent versions of mechanized robots, similar to ones used elsewhere in the park. As in the Hall of Presidents, the Haunted Mansion makes use of "animatronic" figures. These figures use an elaborate system of hydraulics and computers to make them move. In this particular application, Disney goes a step further and uses figures which were cast in clear plastic; only around motorized areas, as the head, are they more opaque. The figures are dressed in sheer fabrics, and to increase the sense of fogginess, are viewed from behind a gauze fabric. The effect is heightened by the lighting.

The largest "ghostly" effect in the Haunted Mansion and the one which most resembles

a hologram is the illusion created in the Grand Ballroom. Here ghosts are seen dancing, floating, and waving in a large, three story room. The viewer observes these ghosts by looking down into the room. This effect is modeled after a nineteenth century magic trick in which a woman is seen in a room, and a magician aims and fires a gun at her. This illusion is created by a special two-chambered box. A sheet of glass, set at an angle, is situated between the rooms. When light is brought up in the first chamber, the glass acts like a mirror and reflects the room and woman. Changing the lighting from the first chamber to the second, causes the glass to become transparent, allowing the audience to view through it. Both chambers have identically decorated rooms but only the first has the woman; by adjusting the lights she appears and disappears.

The Haunted Mansion uses the same principle as this nineteenth century magic trick. The "Doom Buggy" carries the viewer above the Grand Ball Room and tilts forward so that the rider is looking down into it. The viewer is not aware that there is a sheet of glass between him and the room. Above and below the room and out of sight are mechanized ghosts which are moving and dancing. By using strong lighting, the reflections of the figures appear on the glass and the observer is tricked into thinking that there are ghosts in the room.

Additional effects and illusions are incorporated throughout the ride. The eerie sounds and general darkness make the rider susceptible to seeing things that are not real. Effects like doors that "breathe" and rooms that "stretch" create the desired mood. With all the elements working together the viewer begins to wonder if they are not "real ghosts" inhabiting the Haunted Mansion.

Goldsmith's Classes in Holographic Art

LONDON — Introductory and practical courses in holography are being offered on a regular basis by the Goldsmiths' Holography Workshop in Camberwell. Established last May in the College's Fine Art Department, the workshop is a facility where artists and others can learn about and make holograms, according to the
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