



<http://www.phantasmmechanics.com/pepper.html>

## Help With Pepper On It

We get a lot of questions about the **Pepper's Ghost illusion** as shown in the Haunted Hotel (Hotel Lugosi) and Tom Marchak's Grim Organist. Although we provided the floorplan for the Hotel Lugosi mini-Pepper illusion in the graphic at the end, many visitors were still confused about how the setup actually works. We hope that this page will help to explain things a bit better.

First of all, there are two basic effects that can be achieved with the professor's invention. The first is a **transition from one scene or object to another** - a superb primitive 'morph' effect. The most famous example of this first type is the sideshow classic called 'girl to gorilla.' An actor in a gorilla costume stands shackled in chains in the darkened space labeled **FX area** at right. He is not lit, and so casts no reflection in the glass (we'll get to the details of the apparatus shortly.)

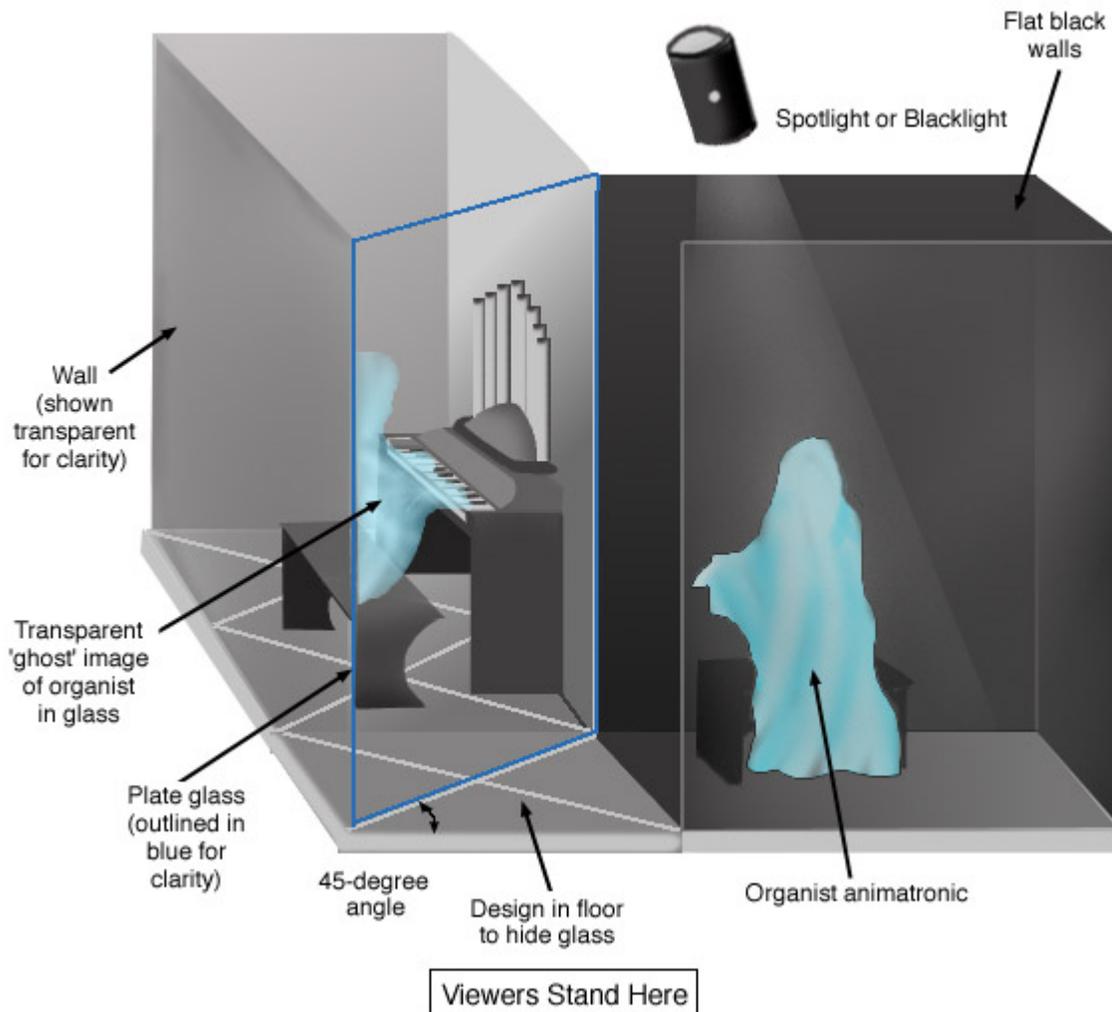
The girl - manacled in a similar fashion - is in the lit area, labeled **Scene** at right. The decor (walls, etc.) of both spaces is identical. To effect the morph, the lighting is crossfaded between the two areas. In other words, the illumination of the Scene is lowered as the lights in the FX area are raised. As this happens, the girl becomes the gorilla, who breaks his chains and rushes toward the combiner glass as all the lights go out, for the scare. (The actor must take care not to collide with the glass, of course! He turns to his left - in our floorplan - and enters the room with the guests, making appropriate noises.)

The Hotel Lugosi and Tom's *Baron Von Riptopen* use the second basic effect - **the superimposition of a transparent object over solid objects**. (As mentioned elsewhere, this is the technique used in the heads-up displays of military aircraft and hardware.) Here, the FX area is painted flat black, and the only light-colored object is the figure to be superimposed. The object is gradually lit - and optionally, the lighting of the Scene is dimmed a bit at the same time. This is the version we will deal with below, in a additional diagram.

Obtained from  
Omarshauntedtrail.com

In setting up a Pepper illusion, the lighting requires experimentation and adjustment. The apparatus itself is secondary to the methods used to present it properly.

## Pepper's Ghost Made Simple



In the diagram above, the Pepper illusion layout is presented in a three-dimensional representation, to make it clearer. We show the ghostly organist as our example. The organ and bench are ordinary props, set up in the scene area.

**Note the glass, outlined in blue in the diagram.** It is set into the floor at a 45-degree angle, and functions optically in the same manner as a car's rear view mirror, letting you see what's off to the side. **This is not a half-silvered mirror**, but a plain piece of plate glass. (Plate glass was the genesis for the illusion, because prior to its discovery, glass in large panes was wavy and thus optically unsuitable for producing the proper effect.) If you want to prove to yourself that this works, go into a room with a window looking out on a nighttime scene, with objects visible. Bring a flashlight with you, and turn out all the lights in the room. Stand facing the window, then shine the flashlight on your face. You'll discover that the brighter the flashlight, the less transparent the reflection of your face seems to be. This is the balancing act required to make the effect look natural - or should we say *supernatural*.

**I have often been asked if Plexiglas can be substituted for plate glass.** Technically, it can be. But it does warp easily, and it is actually more expensive than glass. It also scratches easily. Plate glass is quite heavy, yes; but if you want to do Pepper correctly, it's the only way to go.

**You need to be sure that your guests cannot enter the apparatus.** Also, you must keep them back far enough so that they cannot see around the corner into the FX area, thus ruining their visual experience. You can see from the diagram above how someone standing only a few feet away from the glass would be able to see around the corner to the hidden organist. When you've constructed your illusion, you'll quickly discover the sight lines you need to eliminate, and how closely you can allow guests to approach.

A railing is the best way to achieve the proper separation. While it is true that this will keep the public at a distance from the ghost, it will also keep the *modus operandi* from being obvious. You can also extend a few extra feet of corridor out from the square holding the glass toward the viewing area, an easy method of limiting the view to the FX area. *Avoid the temptation to cover the opening to the illusion with Plexi or chicken wire - any interference with the guest's view will ruin the show value of what you've worked so hard to create!* (For Hotel Lugosi, the 'railing' was a large bush in outside the window which forced viewers to keep their distance. To this I added an awning with cloth 'wings' extending out from the window to limit the view from side angles. These wings were about a yard wide.)

**The lines in the floor decor are there to disguise the presence of the glass**, and care should be taken to ensure that the lines appear identical. The diagonal with the glass in it - in reality a slot in the floor - must be used to govern the look of the other diagonals. Although we show them here in white, the easiest way to conform the look is to make them black, with the floor in a lighter color. If you wish to use white lines, run a black stripe down the center of each, of the same thickness as the plate glass.

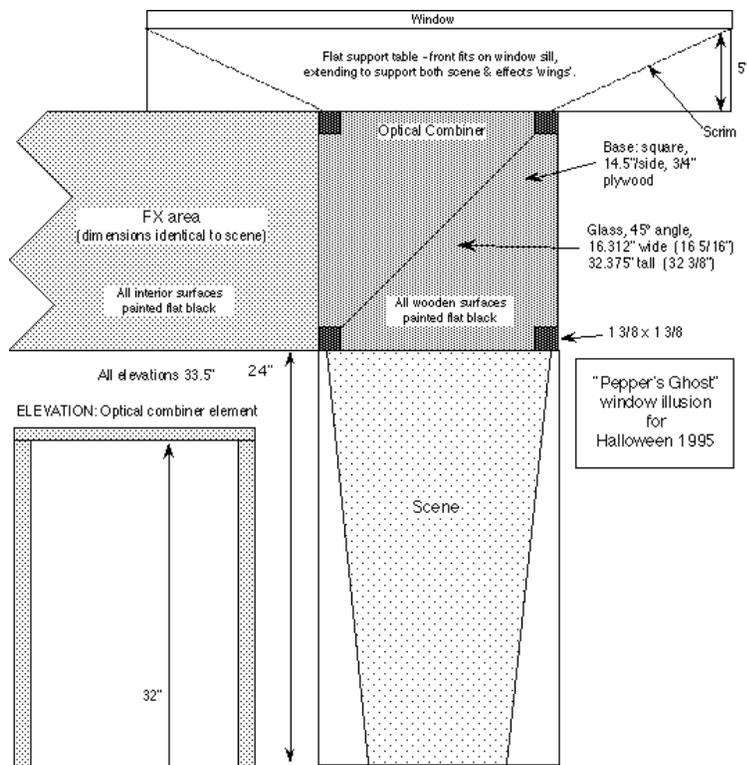
**Note that in the FX area where the ghost animatronic sits, everything else is black**, including the bench occupied by the figure. The lighting is shuttered so that it does not wash the walls out to a gray tone, which can be seen in the glass, and will cloud the scene area with an unwanted reflection of the hidden walls. This technique of

placing light-colored objects against a dark background is known to magicians as **Black Art**, and it really works well with Pepper. You can suspend 'floating' objects from black lines, and they'll be invisible when these same objects are superimposed over the scene area in the glass. This makes the use of a Flying Crank Ghost in a Pepper illusion very simple, for example. You can easily convince the general public that you're using holograms (and who hasn't heard such comments from uninformed visitors to the Disney Haunted mansion ballroom!)

**The organist in our example must be positioned so that his reflection in the glass exactly coincides with the 3-D perspective of the organ and bench in the scene.**

Yes, this is a true 3-D effect, and that's what makes it so effective. Photographs of a Pepper illusion don't do it justice - you have to see it in person to believe it can be so powerful. This is precisely why this old technique is still in use. The truth is, holograms don't look this good - yet - and they will never be this inexpensive to use!

We hope that the above information has been of help in clarifying the setup of this classic illusion.



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The 'Hotel Lugosi' Pepper's Ghost illusion was designed to fit into my frustratingly small apartment window. You can see the relationship of the illusion to the window below. As it turned out, the bars separating the window panes did not detract from the effect at all, due to the wonders of human binocular vision.

It should be noted that the combiner glass height is an arbitrary figure, based upon a piece that I had 'on hand'. Observe the principle at work, and decide on the height and width of the glass based upon your own practical needs.

Position of apparatus in relation to window divisions

