

Fog Lighting Effects

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Note: This article was originally written for the Fellowship of Christian Magicians, and so has several references to that kind of performance art. Of course, the principals are useful for other theater effects as well.

Here I will focus on one particular kind of lighting technique that depends a beam of light shining through a fog or haze. I have called them “fog lights” but I am unable to confirm that term with any of the lighting reference books I have (which isn’t much). Also, this is one area where you can’t really make things yourself, and have to buy professional equipment.

You have surely seen the effect on stage before, especially at a music concert or in a disco. The principal is very simple, a beam of light will show up when it shines through smoke, haze or fog. Note that the heavy fog produced by Dry Ice is generally useless for this purpose because it stays on the ground.

I think this is a very useful tool for magicians in particular because fog light effects generally produce an other worldly kind of image. It is also a “pack small - play big” type of effect. With the fog/smoke generator (about the size of a bread box) and one or two fog lighting instruments (again about the size of a bread box) you can produce an entire new stage setting at the flick of a switch with a total cost of about \$200. I think another plus for this kind of effect is that often it can be made to extend beyond the edge of the stage area and over the heads of the audience. They then become completely surrounded by this fantasy world you are creating for them.

There is an entire industry based on selling these effects to the disco market. American DJ is the major national brand that sells these devices, and they represent the lower end of the market, both in quality and price.

Though I doubt the “dancing light” kind of fixture is really of major value to magicians, there are some fixtures from that industry that are useful for the more theatrical kind of lighting. The cheapest is a “Pin Spot” (\$20 to \$35), it is a fixture that holds a bulb that looks a lot like a car headlight. It puts out a very tightly focused beam of light and little stray light. Kind of a miniature search light. A plastic cap can be placed on it to color it. These lights are commonly used to illuminate mirror balls. Usually several of these lights at once will be used for fog effects on stage.

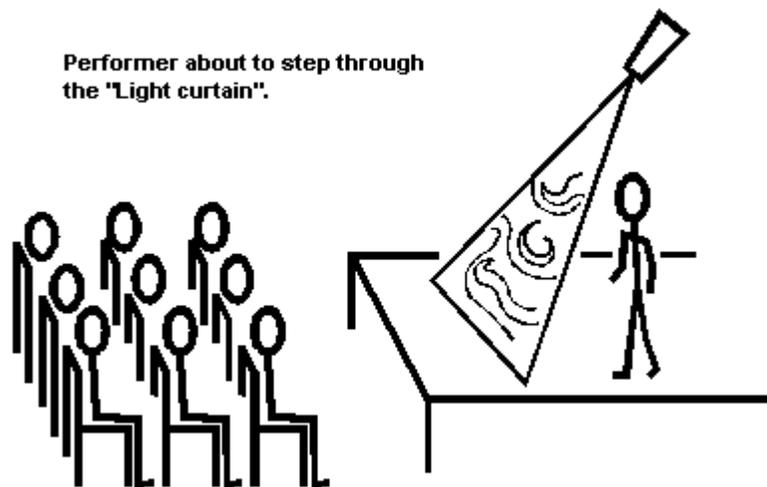
I have never seen my favorite fixture for sale new, only used. It consists of a black metal box that holds a 5" long 500 watt halogen tube bulb (like those used in torch lights) and one lens. [I got mine for \$25 each used] It puts out a pencil thin fan of light that spreads out at about 20 degrees. As the beam slices through the fog it catches every swirl of the air. The effect can look like a path leading off into the spiritual world. It also looks very much like an effect produced by a laser called a "fanned plane". All the new fixtures that look like this have mirrors inside them that move to the music and put out multiple beams. I suppose the internal microphone can either be turned off, or the wires cut to make it a stationary unit.

There are "intelligent lighting instruments" sold to the disco industry that have a single mirror controlled by two motors and several internal motors that change colors and "gobos" (for projecting images). There are three price and performance tiers to them... the lower cost ones only dance to the music, but the more expensive ones (starting at around \$600) can be connected to a box called a controller that can control the exact position of the light as well as the color and the image it projects. Then there are the \$2000 versions that do absolutely everything.

Forget the idea of trying to use the controller with a joystick to make a remote-control spotlight, it just doesn't work that well in actual practice. Also the wattage of the mid and low priced units is relatively low (250 watts max) and the beams are relatively tight (about 12 degrees max). Most of the limitations are gone for the big theatrical version of these lights, but when you jump to that category price is sky high and they weigh 80 lbs each.

It is important to realize that for the fog light effects you generally must place the light source so that it aims towards the audience. The beam of light gets scattered by the fog, and it mostly does it in the same direction the beam is pointed. It will work if the beam is perpendicular to the audience, but not as brightly. As you start to point the beam away from the audience, the apparent brightness will quickly drop off. The light source can be located above and behind the stage, pointing its beam towards the audience's feet or over their heads. (not in their eyes, although if you do that you won't have to practice your misdirection... they will be blinded!)

A neat trick with the "fanned plane" effect is to use it like a curtain for an entrance. If you have a dark stage, you can stand behind the light-curtain and not be seen. To be revealed, you can then be illuminated by a light from the front. Or you can simply walk through the light-curtain so that you are now in front of it, and seen in silhouette. After stepping through, a light can then be shined on you from the front.



I have some additional comments on the fog generators. I have worked with a production that used both the regular smoke generators that put out the big thick “puffs” of smoke and a special hazer that puts out a much more subtle fog effect that disperses and lingers in the air much longer. Regrettably, both machines are rather noisy when they are working, the smoke machine hisses when on and the hazer sounds like a compressor working. When we use them during the show we have sound cues that help to mask the sound. However, the hazer we use is mostly turned on about 15 minutes before the show starts to fill the entire room with a subtle haze which will hopefully last the length of the show.

My recommendation for magicians is to only get the smoke machine. It can be used for the heavy “puffs” it is good at. But for the fog light effects, use a fan to blow the smoke around and disperse it. The effects you want to use it for will probably only last a few minutes, so this way you can have a more concentrated amount of fog on stage for a short time which will quickly disperse when you want it to. (by keeping the fan on and the smoke machine off, or perhaps turning on an additional fan)

One final idea is to adapt any smoke machine for remote control. All the machines come with a wired remote control where you press a button to activate the smoke. It is possible to put a 120 volt relay from Radio Shack inside the same remote control box wired in parallel with the button. Run a power cord from the relay out the box and plug it into your lighting system (preferably a non-dim circuit) to be controlled with the lights. Or for cordless control, purchase one of the cordless on-off switches from Radio Shack and plug it into that. This way you can control the smoke from a control in your pocket.