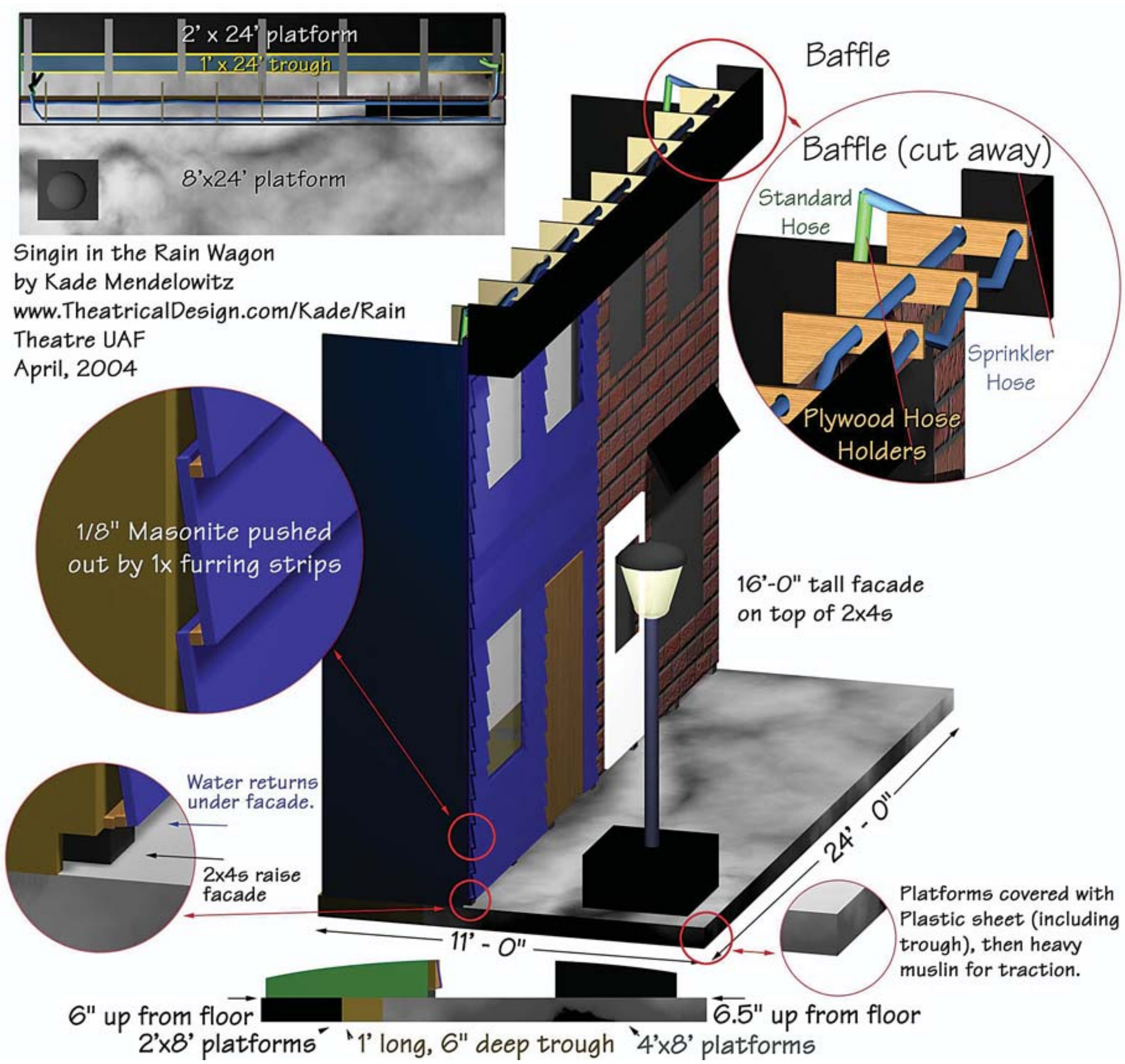
Make It Stop!

Managing Rain Effects on Stage



by
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Singin' and dancin' in the rain. Photo courtesy the author.

Two runs of sprinkler hose supported by plywood hose holders are hidden from view behind the baffle. Photo courtesy the author.

When I was first approached by the Fairbanks Light Opera Theatre, a local community theatre organization, about designing lighting and some of the effects for *Singin' in the Rain* I thought the mandatory rain effect was a relatively straight forward technical problem—a water pump and some garden hose attached to a batten should do the trick. Later in the design process, however, I learned that while making it rain was easy, making it stop on command and figuring out a way to clean it up quickly so the show could proceed required some technical ingenuity. I considered a couple of options: Grates in the floor would allow the rain water to flow into the trap room below the stage where it could be captured and pumped back up. This solution had the obvious drawback of forcing the dancers to work around the grated portions of the stage—or risk ruining their shoes. I also considered moving the rain effect downstage in front of the proscenium so the audience would view the rain scene *through* the falling water. This would avoid the grate problem, and the stage area would stay dry, but risked soaking the orchestra in the pit. I needed something that allowed the rain effect to happen up stage and also provided a way to capture the water without disturbing the stage floor. The solution I eventually devised was a "rain wagon," a unit that would contain everything needed for the rain effect and could be moved into place anywhere on stage.

Luckily the Lee H. Salisbury stage at the University of Alaska Fairbanks has a large area upstage which is normally closed off and used for a black box theatre. Opening it up would create a wagon bay for the rain wagon which ended up measuring 24 feet wide by 11 feet deep.

The wagon was based on six stock platforms, 4´x 8´ each, mounted on casters (300 pound rated). This 24´x 8´ area was the sidewalk on which the famous *Singin' in the Rain* dance was performed. The floor sloped half-inch from front to back to encourage water to retreat without adversely affecting the performers' ability to dance.

At the back of this large sidewalk wagon, we built a trough one foot wide by six inches deep running the length of the wagon. Behind the trough we added another 2´ x 24´ wagon (three stock 2´ x 8´ platforms) castered to the same height as the sidewalk wagon. This extra depth provided a wider base and more stability. We then covered the entire platform, including the trough, with a single piece of thick plastic. We covered the plastic—the part in front of the trough—with a piece of heavy-weight muslin to give us a paintable surface and to provide appropriate traction for the performers. We were prepared to paint it with a sawdust texture for extra traction, but found that to be an unnecessary step.

A storefront wall sixteen feet tall was built just downstage of the trough on top of 2x4s, laid flat. These sleepers provided an open passage for the rain water to flow beneath the façade into the trough.

My primary concern when designing the storefront wall was to make it look realistic in the rain. I knew that water run smoothly down a flat painted surface would destroy the illusion so I designed several three-dimensional elements into the storefront façade. Half of the wall was covered in brick facing and the other half was covered in lap siding. Both these surfaces caused the water to ripple and splash as it ran down. Two doorways and two windows, all of which were trimmed with 2″x 3″ molding, created more protrusions to break the smooth flow of water. We also added an awning over one of the windows. This worked extremely well because it not only provided a large surface for the water to bounce off but also created large puddles under its corners for the actors to splash in.

Light trickling through the water cascading across the large windows also helped enhance the illusion of realistic rain. We used heat-shrink plastic for window glass, the kind used to provide some window insulation in winter, because it was lighter and less expensive than Plexiglas.

Water was pumped to the top of the sixteen-foot wall unit through garden hoses where sprinkler hoses running across the top of the wall sprayed fine streams of water downward and onto the face of the wall. We used two redundant systems—two pumps, two garden hoses and two runs of sprinkler hose—just in case one of the systems failed we would still have at least half of the rain effect. A baffle hid the sprinkler hoses and their plywood supports from view of the audience. Much of the water hit the baffle and as it dripped down helped add texture to the rain. When we first tested the system, we discovered that the holes in the sprinkler hose were not sufficient, so we drilled ⅛″ holes at selected spots to spray heavily on the windows and trim. Drilling through the hose at different angles helped direct the spray somewhat but precision directionality couldn't be achieved.

The rain wagon unit could be moved by two people, although four made it easier to precisely hit its spike location. Prior to moving the unit, the running crew poured a bucket of water on the front to prepare the muslin (the muslin wouldn't drain the water into the trough until it had been saturated) and this created puddles for the actor to play with. Once rolled into place, the crew ran a standard extension cord to a power strip into which the pumps and the streetlight were plugged. The rain began immediately because the system was primed during a pickup rehearsal before each performance. It took less than twenty seconds to fill the hoses prior to spraying.

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As planned, after the rain fell for a minute and the muslin became saturated, the water began to refill the trough. The self-contained rain unit held enough water that it didn't need refilling between performances. The heavy-weight muslin protected the plastic undercoating—we didn't experience any leaking through to the platforms, and the rain flowed smoothly under the façade. The texture of the muslin created natural puddles for the actor to stomp and splash in.

Tips and tricks: An extra long hose will facilitate bringing water to the rain wagon and also removing it. I first filled the unit by rolling it into place, put one of the pumps into a bucket collecting water from a faucet in the scene shop, and let it rain onto the unit and into the trough. After matinee performances, we used a different hose to pump the water out into the sink, so the unit could dry before pickup rehearsal. The header/baffle worked well to keep the water from spraying off the front and sides of the platform. Keeping the hose within six inches from the façade wall adequately allowed the water to fill the platform.

The water needs to be treated *right away* with some type of fungicide or algaecide. It's amazing how quickly standing water begins to smell. The fact that the water picked up dirt and dust from the floor of the platform contributed to its deterioration. We purchased water clearing solution at a hot tub store, avoiding chlorine to save costumes and scenic paint.

Originally, I planned to heat the water to a comfortable temperature by pumping the water from the collecting trough into a garbage can equipped with a heater. However, this extra step was never taken, partly because the cost of a temperature regulating system was prohibitive and partly because the short scene in which the actors get wet takes place immediately before an intermission so they were able to quickly get out of the wet clothes and dry off. Side light worked best to highlight the water, though a gobo wash, some fog, and backlight through the windows also helped.

The cost of the materials in this rain wagon was approximately $600. We used stock platforms and we kept the technology simple, requiring only inexpensive hardware found in local stores.

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