

# Team Third 2015

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This image is a submission for the third team assignment in MCEN4151 Flow Visualization at the University of Colorado, Boulder. The purpose of this image was the capture fog in the shape of clouds indoors. The image in consideration shows fog resting above a light fixture. Though the goal of capturing an “indoor cloud” was not successful, the image portrays the flow of fog indoors really well. The following report describes how the fog captured within this image is formed within fog machines. Additionally, this report will explain how the experiment was set up, as well as the camera and photography techniques used to capture this fog. The teammates involved in this experiment were William Vennard and Ian Durkin.

Aside from the common uses of a fog machine, as seen in theater performances and party décor, it was used in this experiment as a tool to portray a cloud in an unsuspecting environment. The fog machine used in this experiment was also used in my team’s second report. **It uses a mixture of propylene glycol, triethylene glycol, and water.**<sup>1,2</sup> A coil inside of the machine is heated, the fluid passes over a coil, and the fluid mixture creates smoke. Smoke is then captured in a chamber and blown out by the small electric fan. In this image the light fixture was included in the frame to give an artistic ambiance. Additionally, it was intended to reflect light off of the fog in order to capture a more detailed flow. The dark background contrasted with the white fog created a visually pleasing aspect.

### Figure 1: Setup

This image was taken in the lobby of the Discovery Learning Center (DLC). The lighting was minimal and it was dark outside. Apart from imaging techniques, a floodlight was used to capture more detail of the flow. The floodlight was located below the flow and pointing in a direction perpendicular to that in which the fog was traveling. The fog machine was to the right of the light and not captured in this image. The setup can be seen in Figure 1. The fog machine was borrowed from a friend of William’s and the floodlight was Ian’s. No other materials were used in the setup. Since this was taken in the DLC at the University, the temperature was approximately the average room temperature, 70° Fahrenheit.

During this setup all the directions suggested by the manufacturer were followed. That said, the machine was allowed to heat until ready to produce fog. The camera used is a Nikon D3000, and the lens used is a Nikon 50mm manual lens. The camera settings were as follows: aperture 5.6, ISO 250, and shutter speed 1/80. The photo is 3872 pixels wide by 2592 tall. The flow was approximately 2 feet from the lens. No post processing of the image was done.

**Figure 2: Final Image**

I like the colors captured in the photo. The red hue reflecting off the fog makes the flow look like fire. The dark smoky background gives a campfire feel to the setting of the photo. I dislike that the flow captured does not resemble a cloud. If I were to capture an indoor cloud again I would use a fog machine that produced a denser fog, or one that had a larger mass flow rate. This would have allowed for a slower moving fluid that would theoretically be easier to image. In conclusion, I learned how not to take a photo of a cloud indoors. In future experiments I will follow those suggests mentioned above.

Works Cited

1. Brain, Marshall. "Entertainment: How Stuff Works." Web. 15 Nov. 2015.
2. Wybaczynsky, Andriy. "Team Second 2015." 18 Nov. 2015.