

Nick Beato  
Team 1 assignment  
Flo-Vis 2012

### First Team Assignment

For my Team One assignment, I wanted to try an experiment that I had been pondering for the past few weeks. I wanted to see if you shined a laser through a clear liquid and inside the liquid was a bubble of foggy gas, if the laser would not be seen in the liquid but would appear in the gas. The phenomenon I was trying to portray, dealt with the nature of light reflection and refraction. Density in this image plays a part because the gas will obviously rise in the liquid.

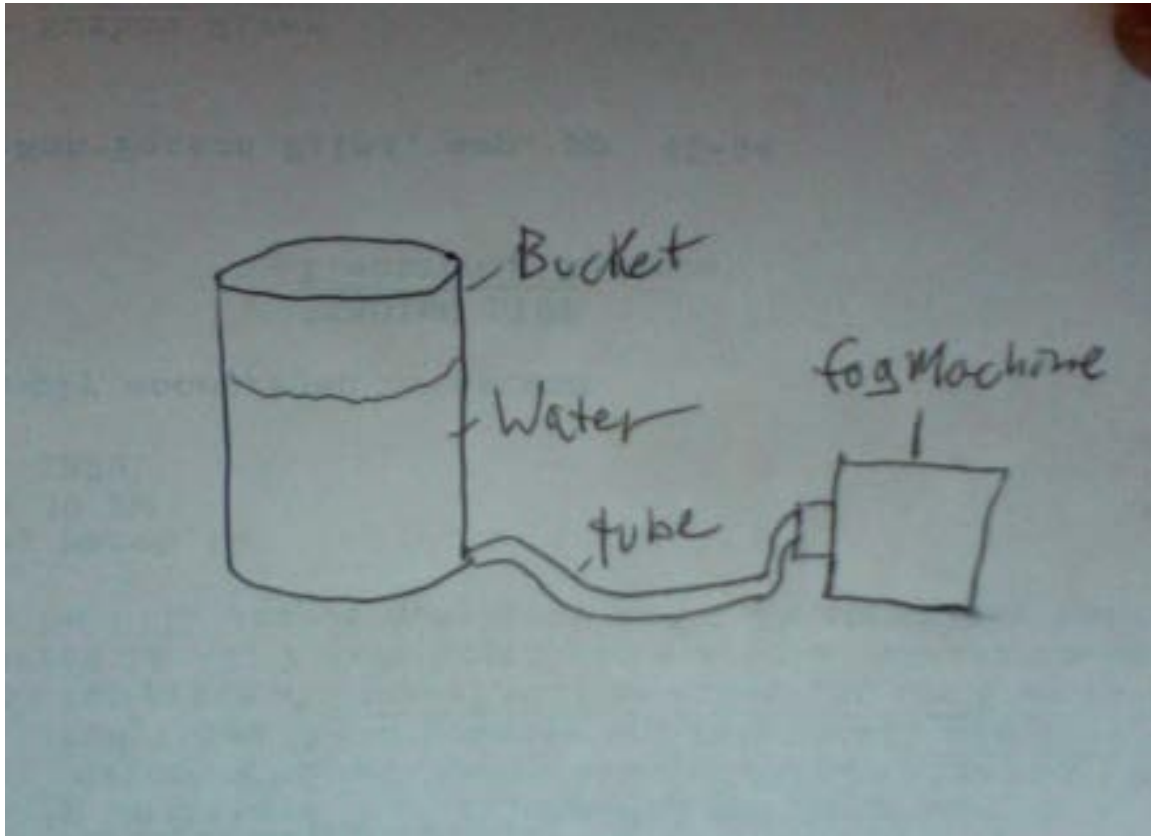
In this image, which was very hard to capture, I had to set up an apparatus that was big enough for my camera. Also, I did not have a macro-lens so I had to be close up. I connected a tube to a fog machine, and the other side of the tube to the bottom of a clear glass bucket. I filled the bucket with water and turned on the fog machine. The fog created in the machine began to bubble through the liquid. To see the effect of light on the fog inside the water I shined a laser through the bucket, which would then hit the fog bubble as it rose. (see sketch) Density made the fog rise through the liquid very quickly, so the experiment effect differed throughout time. To re-enact this experiment is quite easy, however the hard part lies in capturing the image.

For this image I really wanted the laser to stand out in the fog. In order to do this, it had to be in a low light situation, with basically the only light source being the laser itself. The materials used were; a fog machine, a tube (like the tubes used to clean a fish tank) a clear bucket with a hole in the bottom, some water and a laser pointer. To connect the tube to the bucket glue or tape may be required. I did not use the flash on my

camera because it would have washed out the image and the flash itself would have reflected off of the bucket.

The approximate scale of this image is very small. The image itself is only about 1 x 3 inches, making the bubble less than an inch big. I put my camera as close as I could get to the apparatus while still keeping it in focus. This brought my camera about 5 inches from the bubble itself. I used a rather nice Nikon camera with no lens attachments. As this was a low light situation, which required a fast shutter speed, I had to bump up the ISO as high as it would go, making the image very grainy. The exact ISO was up in the 10,000+ range. The shutter speed was about 1/200 fps and the aperture was all the way open at about f5.6. The only photoshopping I used was to crop the image.

Overall the experiment was a success. My hypothesis was correct. The laser shown through the water, with only small particles in the water reflecting the light. The only problem I had with this image is that it needed the extremely high ISO, which made the image very grainy. Also I would have liked to use a macro-lens so I would not have to crop as much. To take this idea further, I would have to change my lighting situation so I did not need such a high ISO. As the shutter speed had to be fixed, because of the fast moving bubble, I could only experiment with ISO and aperture. I think if I did this experiment again, with my acquired knowledge from it, I could make an ever better image.



Name(s): Nick Beato

Assignment: Team 1

Date:

Scale: +, ! = excellent √ = meets expectations; good. ~ = Ok, could be better. X = needs work. NA = not applicable

Art	Your assessment	Comments
Intent was realized	√	
Effective	√	
Impact	√	
Interesting	√	
Beautiful	~	
Dramatic	√	
Feel/texture	~	
No distracting elements	√	