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Get Wet Report

The mushroom bubble was taken from below. A fish tank was used provided a clear glass bottom of the tank for a view from below looking into the tank. Initial, the final image was aspired to be a face blowing bubbles. Hopefully, this image would provide the view of a face under water and the bubbles a human can provide blowing air directly into the water. The camera did want to leave to focus point onto the person over the bubbles that led to face overshadowing the image's purpose. Setting the focal point became difficult with multiple subject matter ultimately leaving only bubbles forming in the frame. The image provided shows a bubble at the moment of formation at a bellow view before its rise towards the top.

The formation of the bubble is air that has less density begin placed in a central location with in water with a high density. Air will become trapped within the water and rise to the top because of the differences in this property. This illustrates the formation of a bubble similar to the effect of a mushroom cloud. Mushroom cloud is the interaction of high-level temperatures with comfortable temperatures. Figure 1 shows the high temperature begin trapped around the lower temperatures and cycling within itself. This is comparable to the differences in densities. The air trapped with in the water and will cycle within itself to create a spherical shape.

QuickTime™ and a decompressor are needed to see this picture.

Figure 1

Figure 2 shown demonstrates how the water traveling through different fields will deform into a stem shape and travel beyond the draft formation. The body traveling

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Figure 2

through will escape and create its own spherical shape. Force of the air is applied through the water. There is a trail begin created as it travels into this different form. The size of the bubble correlates with the volume of air traveling into the water and speed entering into the water. The image captured show that the bubble is about to be formed with a great about of trail beyond. This trail will release the bubble and create bubbles following it because of its greatness in diameter compared to the bubble being formed.

The set up of the tank was at least half full of water. The tank was propped by two chairs to create a bridge allowing the photographer to lie below the tank and look up into it. The lighting included a warming light the shined a softer gold light instead of the sharp white light environmental conscious lights provides. The photographer while taking the pictures formed bubbles in the tank. A long tube led below the bridge able to reach the photographer's mouth with the other end coming in from the top of the tank resting at the bottom. There were white papers towels lining around the side of the tank except the side where the light shined. The white provided reflecting light, so each side could provide a source of some light.

Capturing moving water requires a fast film speed and a fast shutter speed. The goal was to use the given light to be able to capture the forming bubble. The film speed had to be at the highest on the camera of 3200 ISO. This can eliminate the softness of the image that is comes with lower ISOs but can help capture objects moving at great speeds. Not only the ISO needed to be high, but also the camera needed to capture it fast. The shutter speed needed to be at least 1/1000. This is for multiple bubbles forming at different times that is impossible for the human eye to identify this forming time. The amount of images taken required this to be a digital camera, Cannon Rebel T1i. Over 500 images were taken under different camera settings to find the correct image. The focal point was surrounding the tube and the water exiting the tube. This is so the water will be focused as the bubble is formed, and the tube will be in focus to show how the bubble is formed and the difference between the solid of the tube and freely movement of the

liquid. The photo shop involved in this image included removing white specs in the images that could have been from scratches on the lens or on the tank that was used.

The image given was based on how long and how many times I can arrive to the point of retrieving this image. The odds of capturing a bubble at the moments of formation are low, so this requires a high volume of photos taken. The goal of this project was completed to capture the formation of a bubble. As soon as this photo was captured, there were not many more taken because the bubble was directly captured exiting the tube and was believed this could not be captured again within a reasonable amount of frames. The idea could be developed further with more light a focus on the bubble from within. This could be taken with coloring possibly exiting the tube within the water, or a small light placed within the tube. The light is only shining onto the bubble and the bubble focus coming out will possible show different dimensions that are internal.

Works Cited:

Magnaudet, J. "The Motion of High_Reynolds_Number Bubbles in Inhomogenous Flows." *Ann. Rev. Fluid Mech.*. (200): 29. Print.