Group 3 Report

Cameron Misegadis

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For the third group project, the team was very scattered academically. Two of the members were preparing for a competition project and a third was on a brief business trip. For these reasons, each member worked on their own for this photograph. After experimenting with a couple of fluid phenomena and not being able to successfully recreate them, I decided to learn from observing objects splash into carbonated liquid: beer.

A 8” x 6” clear Pyrex dish was used to hold old beer, and this was placed outside for optimal natural lighting. Many household items were then photographed and dropped into the fluid one at a time, such as washers, bolts, spoons, bouncy balls, and protein shaker spiral mixing balls. Each had a unique splash effect depending on how the item was oriented upon impact, and also depending on the items geometry and mass. The mixing ball, which is essentially a wire shaped into a spiral shape that forms a sphere, simply agitated the fluid and did not cause any major disruptions. The washers were excited as well, as they would create a circular wave expanding from the outer diameter of the washer, while the inner hole created a fluid fountain. My personal favorite, and the one that I selected for this submission, is the photograph of the spoon.

A spoon has a center of mass much closer to the spoon end than the handle end, and therefore prefers to fall with the spoon end first. In this shot, the spoon end contacted the water before the rest of the handle, and displaced the water in an outward and upward direction. Once the projected fluid was propelled above the surface of the sitting fluid, it creates a thin, continuous sheet. The upper edge of this sheet is thicker and shows drops that have formed. Beneath the spoon is a cloudy section of fluid. Although this was old, room temperature beer, I believe this cloudy section is a result of carbonation. Much like shaking a soda, the impact of an object will excite the carbonation in a fluid. On an artistic note, the reflection of the sky in the spoon is interesting. This image was shot with a Fujifilm at an F-stop of 5.6, exposure time of 1/150 sec, and an ISO of 400.