

TEAM PROJECT 1

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PURPOSE

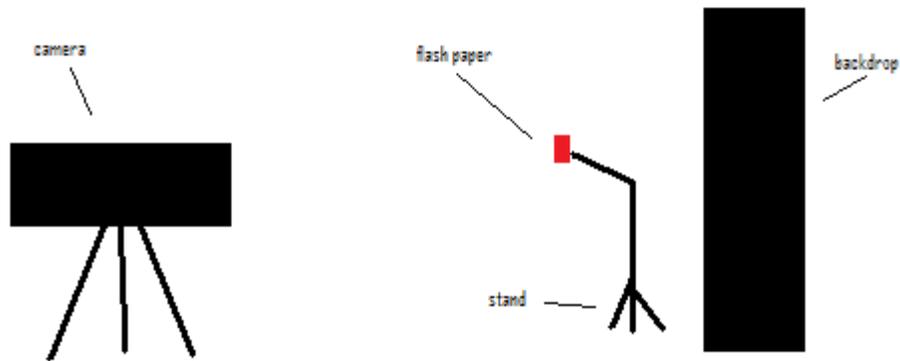
The purpose of this assignment was to capture an interesting image of fluid dynamics accurately portraying a fluid dynamics phenomenon. Due to the fact that this was a team project, the collective creativity of the team was used in coming up with the flow visualization example that was filmed. The artist and his team members set out to capture a piece of flash paper burning with a high speed camera.

FLUID DYNAMICS

The flow phenomenon observed is a burning piece of flash paper, also referred to as guncotton. Guncotton is a highly flammable and very fast burning paper. Nitric acid is combined with starch or wood fibers. The nitric acid then converts the cellulose into cellulose nitrate and water upon being ignited (Wikipedia).

VISUALIZATION TECHNIQUE AND METHODS USED

A Vision Research Phantom series camera was used. The frame rate was set at 5,000 frames per second. The camera was propped up on a tripod two feet away from the flash paper which was held up by a metal arm. A black cloth was used as background in a darkened room. Originally the stand that held the flash paper was designed to ignite the paper, but this method was abandoned in favor of using a disposable lighter.



Due to the artist's inability to access video editing software that could deal with the video format of the high-speed camera, he decided to take a still shot from one of the frames. This was edited using Photoshop. Minimal work was done to the image; the contrast was slightly increased and the image was cropped.

ARTISTIC ELEMENTS

This project went through many phases of ideas. Initially the artist intended to create a video of the slow motion burning with the Bob Dylan song "It's All Over Now, Baby Blue" playing in the background. In order to fit more with the song, the video would have had inverted colors or altered so that the flame was blue. However, due to the artist's inability to figure out how to add music to the video's format, this idea was abandoned. Instead a single frame was used. Fire as a symbol is overloaded with meanings. The artist did not have a particular reason or choosing fire for this project, intending for the viewer to come up with their own interpretation of the burning sheet.

SOURCES

"Nitrocellulose." *Wikipedia, the Free Encyclopedia*. Web. 25 Apr. 2011.

<<http://en.wikipedia.org/wiki/Nitrocellulose>>.

Substantial help was contributed by team members Grant Meaux, William Murray, Travis Oschner, and Shane Weigel.