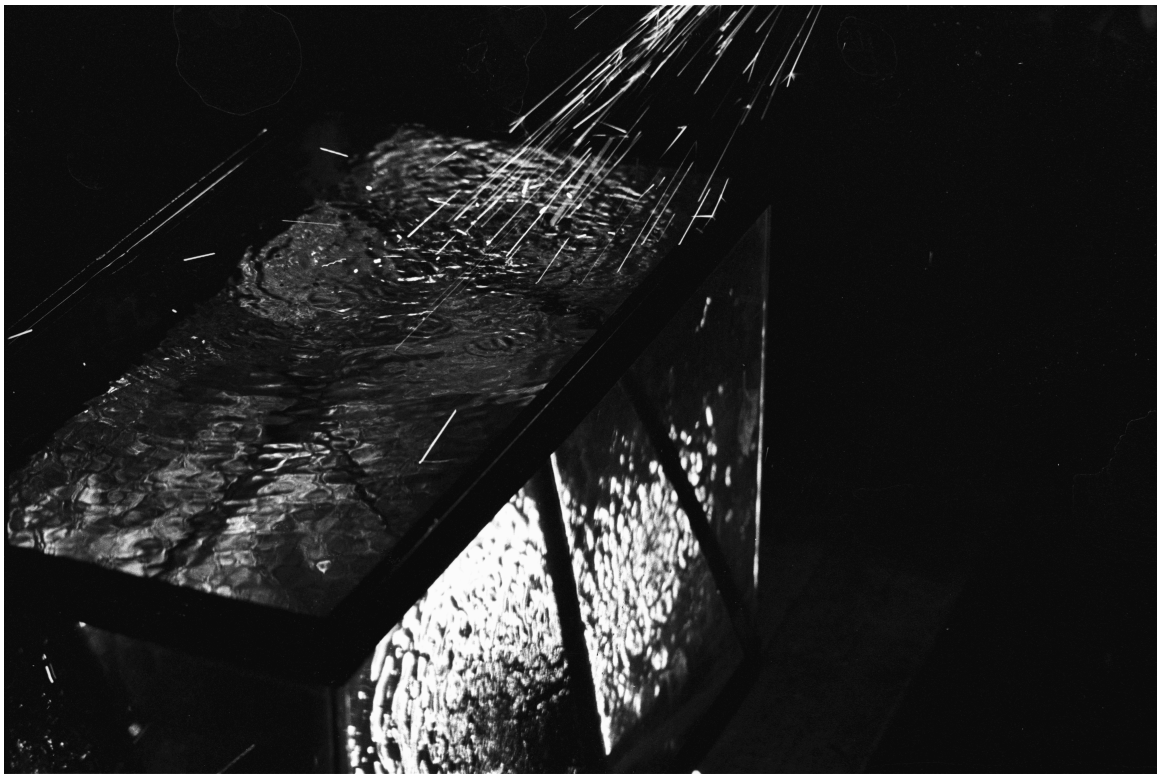
Droopy Sparks



Lotem Sella

FILM 4200

Flow Visualization

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Purpose:

Before starting our excavation for flow visualization, my group and I met together to discuss aesthetics of the project. In our pre production we discussed our desire to use sparks in order to show depth in a composition. Eventually we concluded that our image would be composed of sparks flying diagonally at a downward angle towards a tank of water that would have a mirror within it. The thinking behind this was that the sparks would be reflected by both the mirror and water, but that each reflection would look different.

Approach:

In order to complete this project we experimented and planned. First we went to Target in order to buy a cheap mirror. The object was about five feet tall so we used a glasscutter in order to file the mirror down to the size of a fish tank. We kept the other side just in case we wanted to experiment with different sizes or cracking of the glass. At this point we grabbed a fish tank out of the ITLL and filled it up with water. The experiment was about ready to be executed at this point but we had to find a piece of metal first. I think Paul found an old piece of scrap metal in the lab and so we used that along with a mechanical grinder.

Visualization Technique:

Our visualization technique was a manipulation of physics and chemistry, if you will. The part derived from physics is the use of light and mirrors in order to witness the flow. The chemistry comes from the use of water reacting with hot metal sparks in order to show different sparks. We were mostly excited about the mirror; not only for its artistic qualities, but also for the abstraction it would create. We knew that if we had just looked at a dry mirror with sparks flying at it, that we would just see a straight reflection of nature. However placing it in water would have a few effects. First we would see the natural sparks in the reflection, but depending on how close they would get to the tank their figure would have a more rippled effect. On top of that reflection, the water was also able to reflect the sparks, which eventually created a superimposition effect of two reflections whose qualities, are

inherently different. Other than this physical phenomenon, the chemical one was quite fascinating too. When the sparks hit the water, for a very short while you could actually see the spark flying underwater while quickly fading out. This other phenomenon added to the layers of manipulation in which the viewer would be able to experience the sparks.

Photographic Technique:

In order to capture our experiment we had to record the photons. Kelsey brought his high-speed camera, and I brought my Pentax SLR. We set up the experiment in a lab in the engineering building, but tucked away in a closet like area that would have minimal light leaking through. At first we tried to take pictures with the lights off, but eventually we moved on to closing the lights in the room, relying solely on the light coming from the sparks. Once we figured out the lighting in the room Kelsey and I moved around the room trying to capture different angles of perspective. Wayne eventually took over Kelsey's camera differentiating between stills and videos. All while this was happening Paul was creating the sparks with the grinder, reminding me of a mad scientist.

While operating my camera I was using Arista Premium 400 ISO B&W 35mm film, in conjunction with my 50mm prime wide-angle lens. I could figure out exposure with the room lights on, but when the room was dark I could not see the light meter reading. So what I did was open the aperture all the way down to a 2.8 F-Stop, and then bracket by two or three stops from each angle. Also since this was black and white film I experimented with color filters in front of the lens in order to add contrast, but not change hue. The main colors I used were green and orange due to the color of the sparks. Logic would say to use a blue filter in order to get the greatest contrast with the orange sparks, but due to the nature of orthochromatic film, which is highly sensitive to red but not to blue, I decided against using that particular filter. I think that the green created the best contrast because the sparks were a reddish-orange and due to the additive color theory, green would be the closest opposite color.

Conclusion:

As always, my group's process is highly collaborative. While we all try to implement our own unique vision, the means to reaching the end is always a product of our joined perspectives. By combining all of our different knowledge in terms of aesthetics and science, I was able to eventually create the piece "Droopy Sparks". I like the composition because it follows some formal composition techniques, especially with the rule of thirds. That said, the aspect that delightfully surprised me was the texture of the ripples on the water. Due to 35mm celluloid huge sensor space a whole lot of information could be recorded, thus those tiny ripples could be seen. Another aspect I thought was nice was how still the tank was in terms of focus, but due to the sparks speed they created a streaking affect. I think seeing motion within a still picture really gets the viewer thinking about the whole process. This working with art is what I really strive to due because I think it is fun when a viewer first admires the composition for how it looks, and then they work with it the qualities within the frame in order to understand how the feat was accomplished. I hope "Droopy Sparks" actually achieves this, and if not at least its another creepy high contrast image that we can see.