



Live Drum Micing Experiment

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Introduction

The drum set or drum kit is a collection of drums and other percussion instruments. Such as, cymbals, toms, hi-hats, and kick etc. Each of the drum and percussion instrument within the kit can produce its own sound. Some percussion instruments are made to sound higher than others and there for are mic'd differently. For this reason, there are specific microphones that are made to compliment and amplify each part of the kit. For this experiment I combined both my insight as a drummer and the technical knowledge I acquired about audio during my semesters at City Tech to show why this is the case. My goal was to collect and provide evidence that supports the idea that each microphone picks up specific frequencies differently. I used an fast fourier transformer called SMAART along with the manufacture frequency response chart to visually see the response of each microphone.

Thesis :

1. Why certain mics are used for particular part of the drum set.
2. Do the frequency response match with manufacture data.
3. Microphone comparison.

Methods & Material



Methods:

1. HOW Measurement was taking

- A drum kit was set up
- A Earthworks microphone and was set up near the instrument.
- Both the microphone that was being analyzed and measurement microphone was plugged into a MOTU
- The Motu connected to a laptop with SMAART Software donloaded on it.

2. How SMAART software was used.

- As the drummer played SMAART displayed the signal that was being picked up.
- Visual display of frequency response that Earth works microphone was picking up.
- Visual display of frequency response that the different manufactures microphones was picking up.
- Displayed low to high frequencies (100-8k)
- Take snapshots of measurement received for comparison.

Materials Example:

1. Dell Laptop
2. MOTU
3. Earthworks microphone
4. Shure SM57
5. AKG D122
6. SMAART Software
7. AT20202
8. AKG =C414
9. AKG Drum microphone set
10. Pdp drum kit.



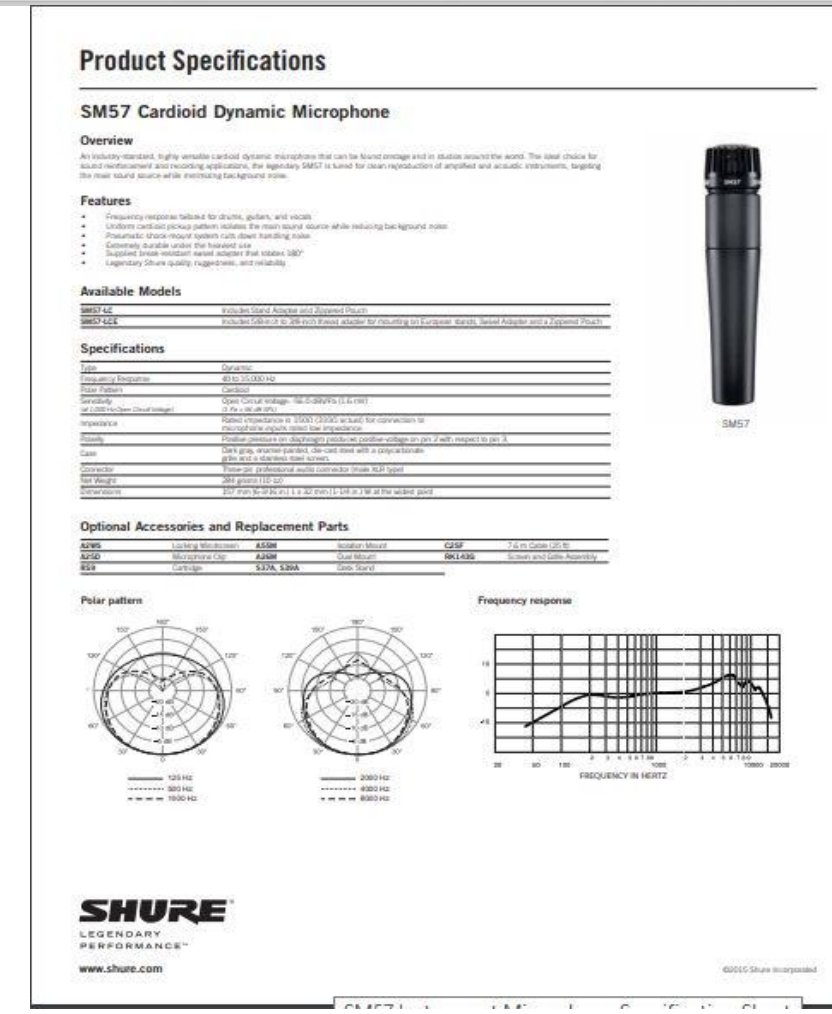
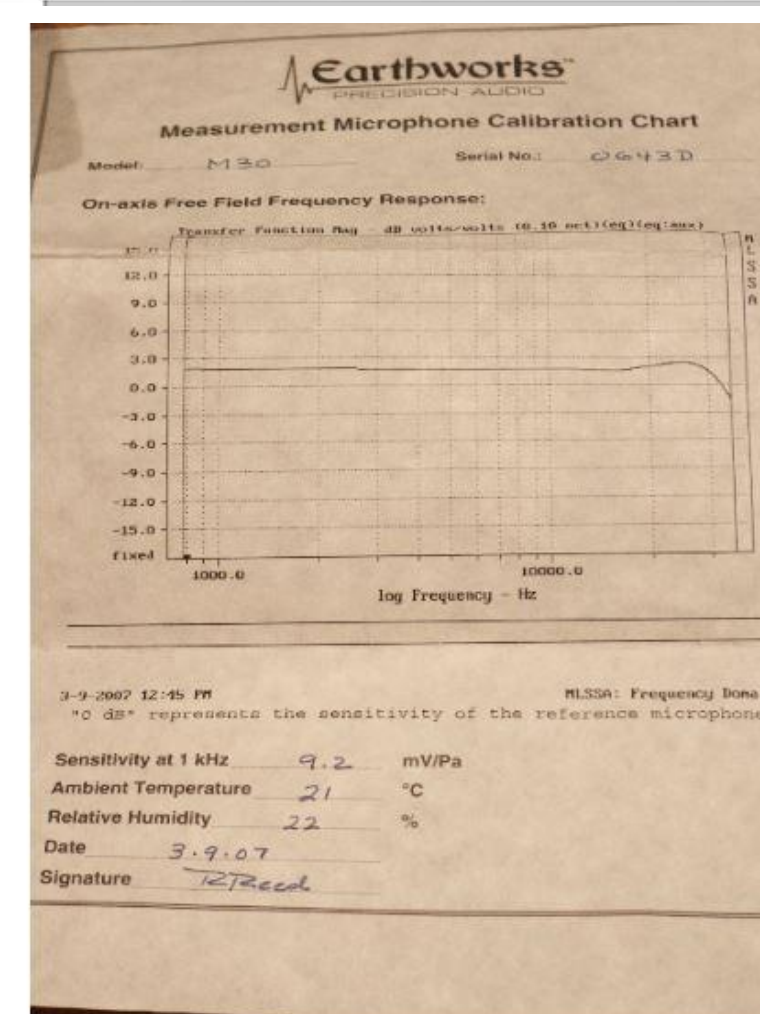
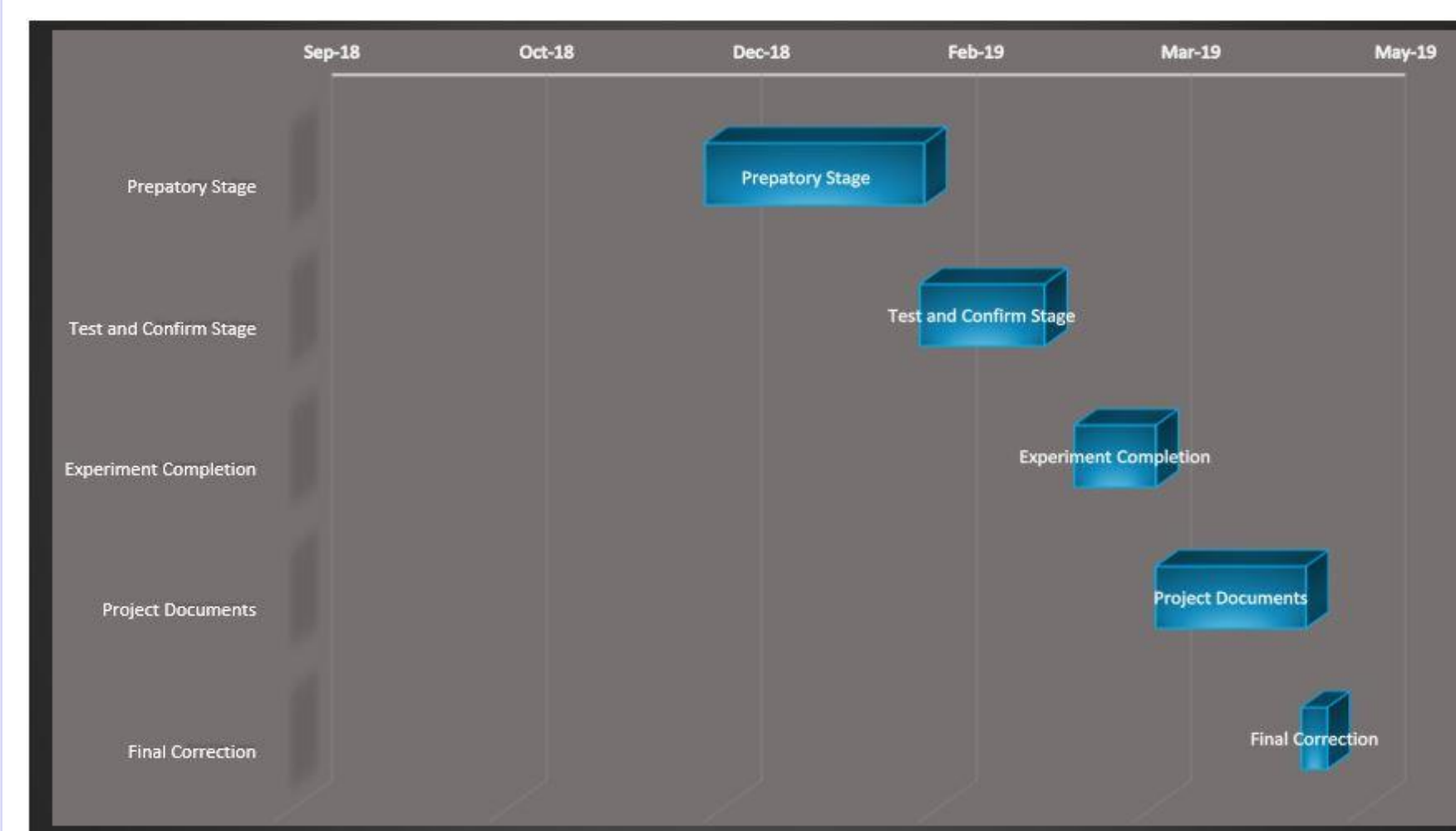
Conclusion :

In the entertainment industry the artist needs and vision for their project is equally important to the people who are working behind the scenes to provide the highest quality of that vision. As an audio technician my job would be the provide the high quality sound as each instrument is amplified. With more insight on the why certain microphones are commonly used for certain instruments, would allow a smoother and more successful event for you as well as the client. In fact, understanding the frequency response of microphones that can be used for a drum kit can even help save money and reduce un necessary expenses. The software SMAART is helping to make the process of analyzing a little easier by visually displaying the frequency response while there are live.

What I learned :

- How SMAART is used within the entertainment industry.
- Certain microphones are used because they emphasize on sound desired more than the others. Example; Kick drum, snare, etc.
- Kit microphone can give you the same or better results than the pro consumer microphones.

Calendar / Charts



Literature cited

- <https://www.mixonline.com/>
- <http://www.lightingandsoundamerica.com/>
- <https://www.shure.com>
- <https://www.shure.com>

Acknowledgements

1. Alex B
- 2.