

Berklee College of Music

# A Mixing Engineer's Portfolio

Submitted in Partial Fulfillment of the Degree of  
Masters of Music in Music Production, Technology and Innovation

Supervisor – Pablo Munguia

**by Srikar MN**

Valencia Campus, Spain

July 2018

# Table of Contents

<b>Abstract.....</b>	<b>iii</b>
<b>1. Introduction.....</b>	<b>1</b>
<b>2. State of the Art Review.....</b>	<b>2</b>
<b>3. Description.....</b>	<b>3</b>
3.1 Introduction Stage:.....	3
3.2 Engineering/Tracking Stage:.....	5
3.3 Mixing Stage:.....	6
3.4 Special Reverb technique:.....	7
<b>4. Innovative aspects.....</b>	<b>7</b>
<b>5. New skills acquired.....</b>	<b>8</b>
<b>6. Challenges.....</b>	<b>8</b>
6.1 Recording and mixing stage:.....	8
6.2 Reverb capturing and re-recording stage:.....	9
<b>7. Conclusion.....</b>	<b>9</b>
<b>Bibliography.....</b>	<b>11</b>

## **Abstract**

The project is a cooperation of engineering and mixing skills with the talents of student artists on Berklee Valencia campus. Collaborations with student musicians of various genres and musical backgrounds is the main course of the project. The goal is to enhance mixing skillsets to be able to deliver world-class sounding music of various styles and genres in terms of the soul of the music and the sound of it. The approach for mixing music is totally dependent on the creative and technical aspects of the music, the purpose and also the market it is focused to cater to. To be able to capture the essence of the artist's creative vision with the state-of-the-art methods and technology has been the main focus of the project. Innovative techniques, based on the old tried-and-tested methods to record and mix have been explored for future prospects. A variety of mixes of varied genres have been accomplished throughout the course of the project.

## 1. Introduction

‘Mixing’ is an integral part of the music making process. It’s the art of combining various elements/instruments that are performed together into a track that can be reproduced by a variety of music players, in various formats. The main goal of this project has been to enhance the skills that are required to mix music of various styles, as the approach for mixing different musical styles varies depending on the creative aspects and the elements that actually make up that particular style. For example, ‘pop music’ or ‘popular music’ is generally recognized to having some consistent and noticeable rhythmic elements, simple harmonic accompaniment and with a focus on melodies and catchy hooks. Contrary to that, Classical music is art music produced or rooted in the traditions of Western culture, including both liturgical (religious) and secular music<sup>1</sup>.

With the past experience of working as an assistant mixing engineer and a freelance mixer, there was already a foundation laid in the work process but without a going through a formal education or training system. This was in fact one of the main reasons to have become a student in Berklee, Valencia. Knowing that the master’s programs consisted of artists from a variety of musical backgrounds, this collaborative project was envisioned with an aim to step up the quality of what a mixer or a recording engineer can offer in the music making process. Also, considering the fact that the past experience was in a continent different from where the goal was to reach, this project was aimed to get exposed to the cross-cultural work styles, expectations, processes, communication and explore the synergy that can be created out of an international environment. Lastly, given the facilities to hone technical skills required to work hands-on on the music, the culminating experience needed to involve

---

<sup>1</sup> (Wikimedia Foundation, Inc. 2018)

experience which would improve the know-hows of the process in order to deliver industry standard output.

## **2. State of the Art Review**

There are various mixing engineers whose work has been very influential in this field of study. This work is in the form of their recording or mixing approaches, techniques to process sounds, workflow, software and hardware tricks and tips, innovative hybrid approaches and their philosophies about the music making process. A few favorites in particular have been followed from a long time. *Michael Brauer* for his ‘Brauerize’<sup>2</sup> technique, *Serban Ghenea* for ‘ITB’<sup>3</sup> mixing, *Manny Marroquin* for his urban-grit sounding mixes and *Shadab Rayeen* for his Indian Film and pop mixing. These mixers are responsible for a majority of my favorite artist’s work including Coldplay, John Mayer, Adele and Taylor Swift. The techniques shared by the mixing engineers have been very revealing in terms of how they work with different material from different artists. They take into account everything starting from the inception idea of the music by the artist to the finalizing the mix, while deciding their workflow. In other words, they all have a common belief, which is that mixing actually begins at the tracking<sup>3</sup> stage or even at the arrangement stage according to some mixers.

In the more technical side of things, all of them have over 2 decades of experience mixing records in a studio set up, which means they have their own formulated processes for treating the sound in order to achieve the artists vision perfectly. Brauerizing is a parallel vocal compression technique devised by Michael Brauer while mixing Coldplay’s music, which resulted in how Chris Martin’s vocals sound. Another process he came up with is a multi-bus compression at the mixbus compression stage that results in a counter-pumping effect between the various grouped elements of the track, which amounted to a more tightly glue-d

---

<sup>2</sup> (Donnelly 2014)

<sup>3</sup> ITB – In the Box

mix. Al Schmitt is another legendary mixer who explains that his mixing starts with choosing the right microphones and the right pre-amps. Bob Dylan's 'Shadows In The Night' was one such album where Al Schmitt engineered it in a way that the tracks were release ready as they were recording<sup>4</sup>.

Another innovative method for using reverbs in mixing was considered based on The Wall of Sound<sup>5</sup>, also known as 'Spector Sound'. It was a sound production formula that was created by Phil for a specific reason. In the era of AM and the jukebox, sometimes the music did not sound good enough mainly because of the poor quality of the material, poor recordings or various technical inadequacies. Phil's idea was to make a sound production formula to create a dense sound aesthetic that could carry the record even if there were lapses in the source/material. In Spector's words, as he explained in 1964 – "I was looking for a sound, a sound so strong that if the material was not the greatest, the sound would carry the record. It was a case of augmenting, augmenting. It all fitted together like a jigsaw."

### **3. Description**

#### *3.1 Introduction Stage:*

The process began with meeting artists from various programs and listening to each other's music. There was natural inclination and affinity to the artists who made rock music, pop, alternative, funk and disco style and acoustic ballad styles music. Since the main agenda of the project was to enhance mixing and engineering skills, the required course work was also focused in that very direction. As part of the Interactive studio mixing and engineering course the first collaboration was made with a performance major student, who made fantastic rock music. His influences were Nick Drake, Pink Floyd and The Beatles.

---

<sup>4</sup> (Tingen 2015)

<sup>5</sup> (Wall\_of\_Sound n.d.)

Subsequently, 2 other collaborative projects took off. One with an Americana-roots singer-songwriter and another with a film scoring major for mixing video-game score. As the course went on, 2 production projects were also undertaken. This involved working with musicians and instrumentalists, producing tracks around Acapellas and delivering final mixes. These projects were in Funk and Trance genres. The table below lists all the collaborations made with all the artists in all the genres.

**Table 1. List of Collaborations with artists and genres**

S No	Type	Artist (Program)	Track(s)	Genre
1	Engineering & Mixing/ Mixing	Tommy Champion (CPPD)	1. Smile Again 2. Rainy Moon 3. Rabbit Hole	Acoustic Rock, Psychedelic Rock
2	Engineering & mixing/ Mixing	Ido Goldberg (MPTI)	1. Edge Of The World 2. Nothing To Do But To Be 3. Coming Home	Rock, Americana- roots
3	Engineering & mixing/ Mixing	Jasmine Olinga (MPTI)	1. Oceanside 2. Amenhacer 3. A Tu Lado 4. Waves of The Sea	Acoustic Indie Pop
4	Mixing	Dhaval Kothari (GEMB)	1. Aa Ja Re 2. Dil Ki Bagiya	Indian Pop
5	Engineering & mixing/ Mixing	Nehir Akansu (CPPD)	1. Bluegrass 2. Klezmer 3. Esmirna 4. Flamenco 5. Tango	Folk
6	Engineering & mixing/ Mixing	Daniel Caton (CPPD)	1. Cookie Jar 2. Bourbon In The Rain	Folk, Light Jazz
7	Mixing	Sarah Martinson & Alasdair Mcleod (CPPD)	1. We Should Stick Together 2. Georgia On My Mind 3. Lullaby 4. Forget Me Not	Disco, Big Band, Pop, Acoustic

8	Mixing	Casper Jones (MPTI)	1. Jupiter	Hip Hop/ Pop
9	Mixing	Naomi Weekes (CPPD)	1. Bloodlust	Pop
10	Mixing	Soo Wincci (MPTI)	1. Inwinccibles	Pop
11	Engineering & mixing/ Mixing	Mckinley (MPTI)	1. Energy Digest 2. Show Me Love	Pop/ Dance
12	Engineering & mixing/	Nathan Smith (CPPD)	1. Run Home Charlie 2. Gratitude	Marimba music
13	Engineering & mixing/ Mixing	Anisha Lakshmanan (CPPD)	1. Kadal 2. Piya Mora	Indian Pop
14	Engineering & mixing/	Shaudi Vahdat (CPPD)	1. Go Back Home	Theatre/Song Writer
15	Mixing	Luka Lebanidze (SFTV)	1. Witcher Wild Hunt	Video game score
16	Production & Mixing	Srikar MN (MPTI)	1. Headlock-Funk	Acapella/ Pop-Funk cover
17	Mixing	Erella Atlan (SFTV)	1. Budapest Orchestra	Film Trailer score
18	Engineering & mixing/	Mouhannad (CPPD)	1. Lullaby (Arabic)	World Soundtrack

### 3.2 Engineering/Tracking Stage:

The main objective of mixing is to re-produce the artist's vision in terms of sound. In others words making the track sound like how the artists hear it in their head. Following the guidelines and philosophies of idol mixers, conversations were had with all the artists about their vision for the songs. The talks covered matters regarding their nature of the composition or music, influences, references, ideas for sound, preferences for their style of production (E.g. recording together or separately; with or without isolation) and their imaginations of how they heard the song in their minds. This process always gave insights and pointer for what methods could work best to capture the soul of their music in the simplest but most effective manner. All the decisions related to production style were made keeping in view the artist's stylistic choices and impressions; choice of mics, preamps, space, etc. Some of the

sessions that were already engineered by others were also discussed for the same details and understanding.

Usually, the tracking session went on for 6-8 hours, depending on the number of elements to be tracked. There were a lot of 3-4 hour sessions also for tracking any overdubs, like vocals, guitar overdubs, horns, etc. Most of the music done as part of this project was well structured in terms of tempo changes, key changes, arrangements, rehearsing and performances of musicians. Hence, the tracking was very systematic and organized in order to make it easy for the producer to edit and comp. Other projects which were more improvisation based had to be discussed more to arrive at an efficient way of going about the whole tracking/recording process. Sessions were backed up by the engineer and the artists themselves.

### *3.3 Mixing Stage:*

Mixing the tracks was the most challenging part of the project. The artist had a sound in their minds. Achieving and matching up to that was no easy task but also the most satisfying job. The method adopted to mix was the hybrid studio mixing approach. Berklee, Valencia's well equipped studios aided in achieving the characteristic analog flavor one would imagine to have in their sound. This was inferred by the references and descriptions provided by the artists during the discussions and chats. On the other hand, there were certain plugin processors that were purchased earlier as personal copies, which were not available in the studios. This issue was dealt mainly in the way of committing tracks, which again is characteristic to producing and mixing music back in the, advocated by the idol mixers.

Taking cues from the artists regarding the crux and essence of their music, combining with certain philosophies of experienced mixers, a certain methodology was followed for mixing all the tracks – identifying the main elements, getting the right balance, having the right effects (at least in the ballpark). Once this stage was reached, more attention was given

to nit-picky side of the mix – EQ-ing, compression and using various time based effects to polish, enhance and glue the individual elements better. On an average, about 30 hours, spread across 2 weeks was spent on each track. Some of them took lesser time while some others took more.

#### *3.4 Special Reverb technique:*

As part of mixing, there was a special technique used to add space and reverberation in the mixes. Berklee has some spaces that have amazing sonic characteristics. These were captured using ‘Altiverb’<sup>6</sup> in the form of Impulse responses and used in the mixing process. Also, an experimentation was done with an objective to further enhance the space/reverberation aspect in the mix. The belief is that the reverberation can add more depth and density to the sound of the mix. So, some individual elements of a session were replayed through a high-quality speaker in any of the rooms/spaces with special acoustic properties and re-recorded back into the session using stereo mics. This served as adding more space and depth in a more unconventional way, rather than using the regular reverb processors, plugins or external processors. The track was then mixed with these re-recorded elements.

#### **4. Innovative aspects**

The re-recording process for adding reverb in the mixes was based on a process that was done in earlier days; placing a microphone in a room or a chamber or a nice space and recording it onto another channel, as reverberation. This process was done with a small change. High quality monitors were used to play back in the particular space and that was re-recorded using high end mics by positioning them according to the amount of reverb that was desired. To arrive at ideal levels, tone of the reverberation and depth, the mics were moved around until the desired sound was achieved. This was an innovative way to choosing the

---

<sup>6</sup> Altiverb – Convolution reverb plugin for audio processing

space, working out the tone and blending in the ideal amount of reverberation. It really enhanced the specialization aspect of the mix, in some cases drastically when compared to using algorithmic reverb processors.

## **5. New skills acquired**

The two most important developments have been soft skills and patience. As mentioned earlier, one of the main objectives of this project was being exposed to working with international talents and artists. The importance of interpersonal skills and being patient could not be stressed enough. This meant listening to what was being expressed by the artists and musicians, planning to communicate clearly, being able to politely convey the problems and issues with certain demands, trying to understand the point of view of others and getting your point across precisely and effectively.

On the technical side of things, listening to audio critically has been improved a lot. Know-hows about mic placements, choice of mics based on the purpose, relation of mic pre-amps with the mics and the resulting sound, nuances of using analog processors and external reverb processing units, better understanding of the regularly used tools and updated tech aspects.

## **6. Challenges**

### *6.1 Recording and mixing stage:*

During the tracking stages the main challenge was how to optimize time and space availability. In some cases, where the style of music or the artist's preferences demanded to be present in the same space, compromises were made in terms of having multiple acoustics instruments in the same space, committing to the risk of audio bleeding into each other's tracks. In most such cases, temporary walls were built with 'gobos' for isolating as much as

possible, giving the post processing more freedom. The last thing to be compromised was the comfort and preferences of the musicians and artists that would affect their performance.

While mixing, due to the time availability of the studios and the hybrid nature of the set-up, the main challenge was to process and commit some elements with external processors and continue mixing with the committed tracks. In other words, there were times when there was a need to revert back to preceding settings or versions and it was tough to do so because of hybrid nature of the set-up and time limits.

### *6.2 Reverb capturing and re-recording stage:*

The main challenge in the process of capturing Impulse responses<sup>7</sup> was to have a high signal to noise ratio and placing the mics in a position to simulate the space as accurately as possible. While re-recording the tracks, the stereo mic placement needed to be done very carefully to avoid phasing issues. It was found that the elements that were re-recorded to make them sound wider by placing the stereo pair of mics farther away from each other, more phase-y it sounded especially when summed to mono. This needed to be worked out and balanced out in terms of width and mono-compatibility with precision and careful listening.

## **7. Conclusion**

In sum, this project was undertaken to develop the skillsets, technical and interpersonal, needed by a mixer and recording engineer to be able to deliver high quality industry standard output. The process brought to light many nuances of the music making process regarding which choices were made in order to move forward. Depending on those choices the original plans were tweaked but all in the trust that the goal will be attained. The experience of going through the whole process was most rewarding due to the nature of work, love for the art and

---

<sup>7</sup> Impulse responses enable the acoustic characteristics of a location to be captured. (Wikimedia Foundation, Inc 2018)

forming relations the people involved. Every collaboration made and every individual project undertaken had something to be benefitted from, be it related to work or personal growth that would be immensely useful in all walks of life.

## **Bibliography**

Wikimedia Foundation, Inc. 2018. *Wikipedia*. June 9. Accessed June 10, 2018.

[https://en.wikipedia.org/wiki/Pop\\_music#cite\\_note-18](https://en.wikipedia.org/wiki/Pop_music#cite_note-18).

Donnelly, Jamie. 2014. "Brauerizing: Techniques and Concepts." *Wordpress*. March 19.

Accessed June 10, 2018. <https://brauerizing.wordpress.com>.

Tingen, Paul. 2015. "Sound On Sound." *Sound On Sound*. 2015 01. Accessed June 11, 2018.

<https://www.soundonsound.com/techniques/al-schmitt-recording-bob-dylans-shadows-night>.

n.d. *Wall\_of\_Sound*. [https://en.wikipedia.org/wiki/Wall\\_of\\_Sound](https://en.wikipedia.org/wiki/Wall_of_Sound).

Wikimedia Foundation, Inc. 2018. *Impulse response*. May 25. Accessed June 13, 2018.

[https://en.wikipedia.org/wiki/Impulse\\_response#Acoustic\\_and\\_audio\\_applications](https://en.wikipedia.org/wiki/Impulse_response#Acoustic_and_audio_applications).