
A471

Project 2



Post Session Documentation



JACOBS SCHOOL OF MUSIC
Audio Engineering and Sound Production

INDIANA UNIVERSITY
Bloomington

Session Preparation Form

Engineers: Heoliny Jung Session date: 09/09/2020
 Artist: Emma Walsh Song title: One
 Instrumentation: Acoustic Guitar, vocals, chimes, bells, marimba,
 vibes, crotales, aluminum trash can

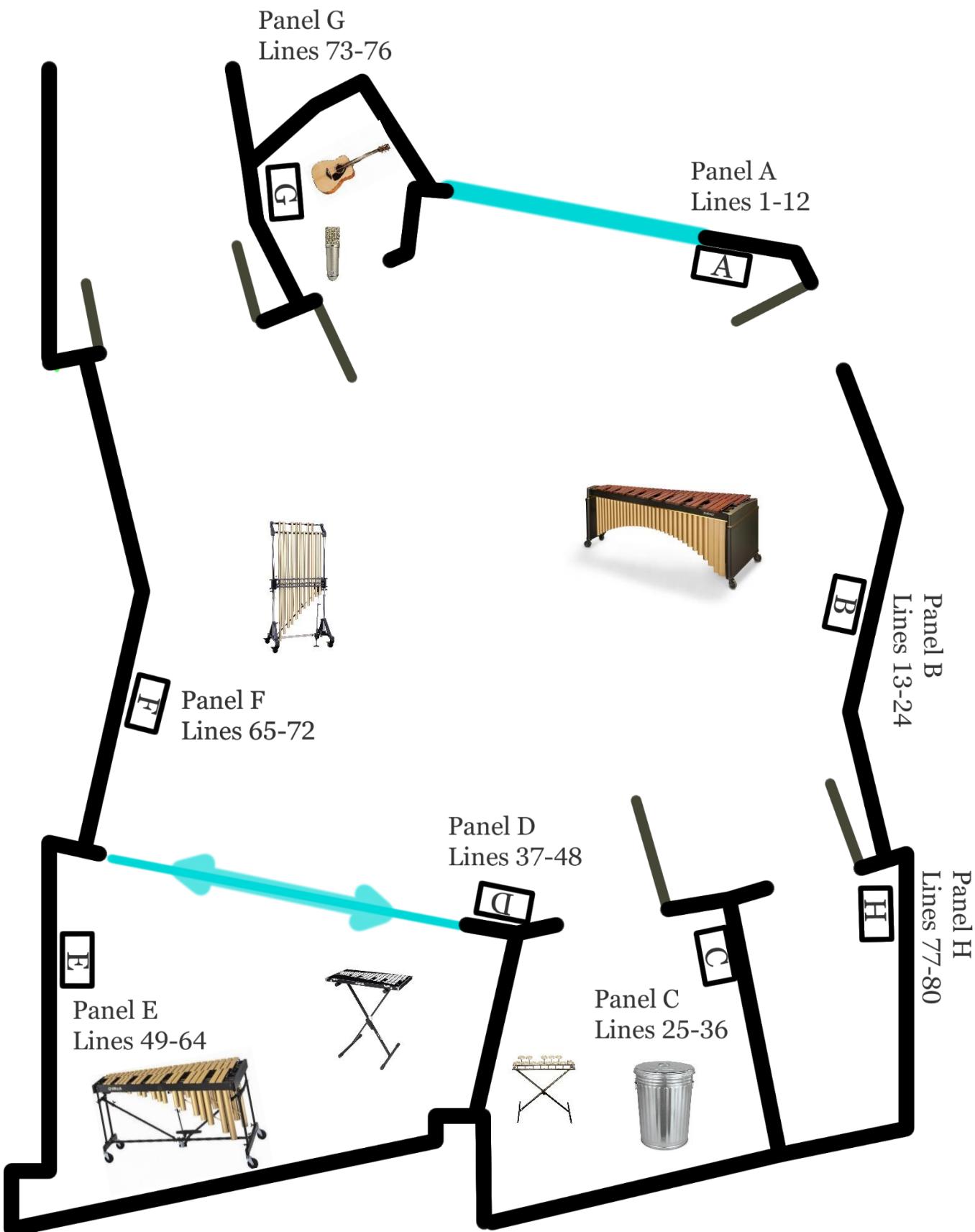
start time		end time	description
6:00 pm	until	7:30 pm	engineers arrive and set up mics/headphones
7:30 pm	until	8:00 pm	band arrives
8:00 pm	until	9:30 pm	get sounds/ set-up headphone mixes
9:30 pm	until	10:00 pm	Record gtr & vocals basic
10:00 pm	until	10:30 pm	Marimba, trash can, vibes
10:30 pm	until	11:00 pm	Bells, crotales, chimes
11:00 pm	until	11:30 pm	rough mix/ band tears down and loads out
11:30 pm	until	11:59 pm	studio cleaned and empty/ board cleared

Mic input list

Mic Pocket	Preamp	Room	Mic	Instrument	Outboard	Basic /OD	PT input#
25	MTX 5	Drum	8020	Trash Can Room		OD	M/L 5
26	MTX 6	Drum	SM7B	Trash Can Top		OD	M/L 6
1	MTX 1	Live	CMC6 MK4	Marimba A Lo		OD	M/L 1
2	MTX 2	Live	CMC6 MK4	Marimba A Hi		OD	M/L 2
3	MTX 3	Live	RE-20	Marimba B Lo		OD	M/L 3
4	MTX 4	Live	RE-20	Marimba B Hi		OD	M/L 4
13	MTX 9	Live	414	Chimes A		OD	M/L 9
14	MTX 10	Live	KM184A	Chimes B		OD	M/L 10
51	MTX 11	Piano	TLM107	Bells Mid		OD	M/L 11
52	MTX 12	Piano	TLM107	Bells Side		OD	M/L 12
49	MTX 7	Piano	414	Vibes Lo		OD	M/L 7
50	MTX 8	Piano	414	Vibes Hi		OD	M/L 8
27	MTX 15	Drum	8090	Crotales		OD	M/L 15
76	Neve 5	Vocal	TLM 170	Scratch Vox		B	Line 5
	Neve 1	Vocal	FET 47	Scratch Guitar		B	
	SC1	405	414	Guitar A		B/OD	
	SC2	405	141	Guitar B		B/OD	
	Audient	405	CV-95	Vox A	dBx 160x	OD	
	Audient	405	414	Vox B		OD	

Aviom Assignments

1-2	3-4	5-6	7-8	9	10	11	12	13	14	15	16
Gtr	Marimba	Chimes	Bells	Vox	Crotales	Trash Can				C	TB





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Project Information Document

(Use Adobe Acrobat to complete)

Artist/Band Name: Emma Walsh

Producer: Heoliny Jung

Engineer: Heolny Jung

Does this recording contain samples? No Yes (List sample sources in Notes field)

Studio: Joshi 405 Auer Ford Recital Mac Other

Sample Rate: 44.1 48 88.2 96 176.4 192 All sessions must be 24-bit

Song Title	Composer/Lyricist/Arranger
One	Emma Walsh

Musician	Instrument
Emma Walsh	Vocals/Acoustic Guitar
Lucy Ritter	Trash Can/Chimes
Robbie Darling	Marimba/Crotales
Sebastian Moneyron	Vibes/Bells

Add Session Details



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Session Details:

Date: 2020-10-03 Start time: 18:00 End time: 11:59

Tracking Overdub Editing Mixing Mastering

Notes:

Update this field with additional info. from each session including what was recorded/mixed, additional musicians, artist comments and all pertinent information about the session. Add new pages as needed.

- Tracked trash can, marimba, vibes, bells, chimes, crotales, and scratch guitar/vocal
- Tracking was separated into two phases, with marimba, vibes, and trash can first, then chimes, crotales, and bells. Three performers simultaneously in separate rooms
- Vibes mic switched to Royer R121
- Bells Side mic unused



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Session Details:

Date: 2020-10-16

Start time: 09:30

End time: 11:30

Tracking

Overdub

Editing

Mixing

Mastering

Notes:

Update this field with additional info. from each session including what was recorded/mixed, additional musicians, artist comments and all pertinent information about the session. Add new pages as needed.

- Decided not to use Bells Side mic, since M/S processing did not seem to make much difference compared to mono signal
- Decided not to use Trash Can Top mic, since I felt I got everything I needed from the bottom mic.
- Comped vibes, bells, and crotales takes
- Basic levels and panning mix



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Session Details:

Date: 2020-10-19 Start time: 22:00 End time: 23:59

Tracking Overdub Editing Mixing Mastering

Notes:

Update this field with additional info. from each session including what was recorded/mixed, additional musicians, artist comments and all pertinent information about the session. Add new pages as needed.

- EQ/Compression on basic tracks
- Heavy compression used on vibes, chimes, and bells to reduce transient and make the sounds more consistent
- Added R2 reverb



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Session Details:

Date: 2020-10-20 Start time: 09:30 End time: 13:30

Tracking Overdub Editing Mixing Mastering

Notes:

Update this field with additional info. from each session including what was recorded/mixed, additional musicians, artist comments and all pertinent information about the session. Add new pages as needed.

- Overdubbed vocals and guitar in 405
- Comped takes



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Session Details:

Date: 2020-10-21 Start time: 09:30 End time: 11:30

Tracking Overdub Editing Mixing Mastering

Notes:

Update this field with additional info. from each session including what was recorded/mixed, additional musicians, artist comments and all pertinent information about the session. Add new pages as needed.

- Mixed in 354
- Added EQ, compression, and general levels to vocals and guitar
- Added basic mastering to master track (limiter, EQ)
- Bounced first rough mix



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Session Details:

Date: 2020-10-21

Start time: 22:00

End time: 23:59

Tracking Overdub Editing Mixing Mastering

Notes:

Update this field with additional info. from each session including what was recorded/mixed, additional musicians, artist comments and all pertinent information about the session. Add new pages as needed.

- Moved mix back to Joshi
- Did mix adjustments for listening in Joshi for mentoring



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Session Details:

Date: 2020-10-28 Start time: 21:30 End time: 23:30

Tracking Overdub Editing Mixing Mastering

Notes:

Update this field with additional info. from each session including what was recorded/mixed, additional musicians, artist comments and all pertinent information about the session. Add new pages as needed.

- Mixed with revisions from mentoring session
- Worked mostly on reverb and EQ on trash can
- Lots of automation
- Minor revisions to vocal EQ



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Session Details:

Date: 2020-10-29 Start time: 12:15 End time: 13:15

Tracking Overdub Editing Mixing Mastering

Notes:

Update this field with additional info. from each session including what was recorded/mixed, additional musicians, artist comments and all pertinent information about the session. Add new pages as needed.

- Minor automation adjustments
- Finalized mastering, top and tail, etc.
- Bounced final mix

1. Overall, how did you feel the session went?

Terrible	Not well	OK	Good	Great!
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2. What was different from what you had planned?

This session went almost exactly as planned this time, since I prepared a lot better and left a lot more time for what needed to be done, especially getting sounds. The things that changed were kind of calculated into my planning, and I felt very comfortable the whole time, which was a great feeling. I changed out the vibes mic a few times, ended up landing on a ribbon, and changed it to a mono instead of lo/hi. I also ended up not using the side mic for the bells, as it didn't really add much, and in the mix I didn't feel any compelling reason to have a stereo bell set. One last thing that didn't go according to plan was recording overdubs in 405, but overall that turned out to work pretty well, and I was actually really happy with the sounds I got up there.

3. What could you have done in planning that would have made the session better?

I could have come in with a pre-made Pro Tools session like I usually do, which would have sped up the set-up process, however I had assistants to help me so it ended up not being a big deal.

4. Did the band feel good about the session when they left? Have you spoken to them since the session to confirm how they felt it went? What did they feel went well and not so well.

The band seemed satisfied with the session when they left. We did some quick comps for a few of them to get the best takes, but some of them needed a bit of heavy work on comping, so we couldn't get all the best performances to listen to simultaneously before they left. Also, a few in this group were not used to the studio recording process. Mainly, the bowed vibes was rather difficult, so that band member was a bit skeptical of his performance quality, but I assured him that we had enough takes to piece together a good comp. I've spoken to the band about how they felt it went and they said they had a great time, and like the mix that I sent them (this time, I waited until I had an almost finished mix to send it out to the band, and I think that went much better). The overdub session went particularly well, as the artist Emma and I were able to work together smoothly, creatively, and respectfully. She seemed very happy after the overdub session.

To answer the next questions you need to have listened to your session and created a rough mix AFTER the day of the session. Make sure to do so BEFORE answering these questions.

5. What is the best sounding track you recorded? Describe why in DETAIL!

I really liked my vocal sounds funny enough. I used the Aventone through a Neve clone Seventh Circle and the dBx 160x (which I have always loved on female vocals) and it came out great, needing very little compression in mixing. It sounded very smooth and natural, and fit right in with the rest of the mix.

6. What is the worst sounding track you recorded? Describe why in DETAIL!

I had to work a lot on the vibes track. In tracking, I had a hard time trying to find a position and/or mic that would reduce the piercing high frequencies of the instrument and mellow it out. In the end, we ended up getting as close as I think we could have, however I would be curious to hear even more mics in the same situation and hear how that sounds. I also didn't like how I only put one mic on it, as the part is large and swelling, but it was restricted to a mono space in the mix.

7. What would you do differently for the track above?

I would stereo mic the instrument, probably with a coincident stereo technique. I would also try dynamics, since I only tried condensers and ribbons on it during the session. I ended up getting a nice sound out of it with what I put up,

however, so I would not be upset if those other options didn't work out and I had to fall back to what I did here.

8. What did you learn from this session?

I learned to trust my instincts and believe in my ears. I have never had incredible confidence in my ability to play the role of producer or judge sounds super critically, but this session I pushed myself to try and take on those roles as much as I could, and it worked out incredibly well. I think the artists felt more engaged knowing that the engineer was thinking hard about the sounds and performances and giving advice and opinions to them. It also allowed me to feel more involved and comfortable as part of the process rather than just the guy pushing buttons. I know it will not always be my role to produce or be as involved as I was, but I was really glad that I could do it if I tried and trusted the years of experience I've built up over my years here. I still have a lot to learn, but this felt like the first session where I was in control and fully competent.

Session Pictures

Here, you can see my trash can top and bottom mics. As stated before, I ended up liking the sound of the bottom the most and didn't feel like the top added anything worthwhile. Like a lot of the instruments in the session, miking this was quite an interesting task, as I wasn't sure whether to approach it like an orchestral bass drum or a snare drum. I landed on the spots seen here after lots of moving and listening.



the RE-20's got more of the resonance of the tubes and a wider spread, but were a bit chaotic and hollow in the middle. I was really happy that my efforts in getting good sounds allowed me to use both in the mix almost equally.

Next up is the Marimba, where I had a lot of success with the setup seen here, comprised of two Schoeps CMC6/MK4's in a rough ORTF and the two RE-20's as a spaced pair closer to the bars. I fiddled a lot with the mic positions to make sure they captured what I wanted out of the instrument. The Schoeps gave a more stable, narrower stereo pair that was a bit brighter, whereas



My chimes were a similar situation, where lots of moving and experimentation was required to get a good result. The 414 started off to the side of the instrument and much closer, which was a method I had seen when researching chimes mic positions. That position, however, felt very thin and favored the high notes, and even after moving it further away still didn't sound very good to me. So we moved it to the front (or back?) of the instrument. I liked how it sounded more even across all the notes there, but it still sounded thin and emphasized the transient, since it was closer to the hammers than the resonant tubes.

That's where the lower small diaphragm condenser came in to play. It got all the

nice resonance of the chimes I was looking for, but it also got a lot of the mechanical noise of the pedal and dampening mechanism. They worked well together in the mix, as I could balance the resonant but noisy lower mic with the thinner but cleaner 414.

On the right you can see my setup for the bells and vibes. As stated before, I set up an MS pair for the bells but ended up not using the side.

The vibes mic was moved, changed, and moved again many times, but the R121 at about 5-6 feet above the center of the instrument ended up sounding the best to me. I tried both 414's and small diaphragm condensers on it before the ribbon. The condensers were much too sensitive and produced some very piercing frequencies. In the future, I think the real key with vibes is distance and space. I would put them in the live room instead of the piano room.



Unfortunately, I did not manage to get a picture of the setup for crotale, but the mic was in a similar position to the one on the vibes, about 4-6 feet away from the instrument facing down.



For my overdub session in 405, I set up two mics on the acoustic, a small diaphragm at the 12th fret-ish and the large diaphragm closer to the sound hole. I experimented with various positions before landing on these and was very satisfied with the blend of the two. When adjusting, I spent a lot of time trying to make sure they sounded good together which allowed me to use both almost equally in the mix.

I placed her in the corner of 405 with the acoustic treatment and then surrounded the area with the gobos. Both mics were going into the Seventh Circle pres (first four, Neve clone).

Vocals were placed in front of the window to the control room with gobos around the area. I used two mics because I had the Aventone going in to the dBx 160x and wanted to make sure I had a cleaner FET signal as well as have a second mic for doubles or BGV. In the end, I really liked the sound of the Aventone and dBx, and used the 414 for the background vocal tracks, which worked out perfectly. Both mics were patched into Audient pre amps.



Pro Tools Session Screenshots



For this mix, I decided to try starting out only using the SSL E-Channel Waves plugin on every track. I used the Matrix pres for all the percussion tracks coming into Pro Tools, so all the signals were squeaky clean and allowed me to really hear the effect of the plugins. I ended up enjoying this method a lot, as it gave me consistency across every track and kept me from diving into a plugin rabbit hole. In general, I used the SSL Channel as much as I could at first with EQ and compression and the occasional gate, then instantiated a Neutron EQ afterwards if I felt the channel needed some more broad or surgical changes that the SSL bands could not achieve. All the SSL plugins had the "Analog" switch turned on.

Trash Can



The Trash Can needed a good bit of processing, and as you can see I did use a Neutron after the SSL. I was tasked with trying to make the can fit in as kind of both a kick and snare, as it was the only thing in the track that could really give a nice pulse to the piece. I used Beat Detective to snap all the hits to the grid, and then used the SSL EQ to make it a bit boomy-er and add more punch and snap. Staying on the SSL, I used the compressor to even out the hits a bit, then after guidance from the mentoring session, used the gate to take out some of the click bleed and resonance.

It had some weird-sounding tinniness in the high end, so I put the Neutron on there and moved around the band until I found a nice spot to cut that made it less intrusive on the rest of the mix.



Additionally, I used a separate reverb for the can because when I sent it just to the main reverb, it became much too boomy and muddled up the low end of the track. I used the same reverb as the main reverb but put an SSL EQ before it and took out a lot of the low end to keep in that shimmer.

Marimba



The marimba is the first example of a broader theme in this project: close-miking mallet instruments captures lots of transient, high-end, and overtones. For the marimba specifically, the sounds coming into the board were very good, but in the mix with many other instruments it took up too much spectral space, much like a grand piano can in a rock tune. To prevent this, I used somewhat drastic low-pass filtering and a decent amount of compression, evening out the sound and pushing it to the back of the mix so it could fit in with the rest of the instrumentation.



After processing each pair separately, I then bussed both of them to another SSL Channel with some more compression, a low pass filter, and a low band cut EQ at around 200-300 Hz to prevent some of the muddiness the track was producing in the mix.

Chimes

The two chime mics were a bit tricky as close-miking them meant there was an excess of transient from the hard hammers hitting the tubes, but also a lot of the lower fundamental frequencies as the instrument resonated after being hit. I put a fast attack compressor on both to reduce the transient a bit and focus more on the resonant tone, then I made substantial EQ cuts on frequencies where there was heavy resonance build up.



These two channels were also both output to a bus track, but no processing was done on that aux.

Bells



The bells got a similar treatment to the chimes, as they were extremely bright and present coming into Pro Tools. I didn't need to worry about resonances in the low-end, but I did do a lot of work in the mids and highs to keep the sound nice and bright rather than piercing.

I tried experimenting with the fast attack compressor on the SSL, but I ended up liking the slower attack compression. It kept their snappy transient that cuts through everything intact but mellowed out some of the harsher resonances that built up in the sustain.

Crotales



As the crotales are incredibly similar sounding to the bells, they ended up having close to the same treatment. One major difference is that I used the fast attack compressor instead of the slower one. Since they played a simpler part than the bells but would often be performed at the same time, I wanted them to sit a bit further back and not overshadow the bells.

Vibes



The bowed vibes were by far the most interesting sound to work with out of the bunch. I wanted to have them float in the mix, almost like ambience or a pad synth. Coming into Pro Tools, they had a lot of harshness and huge dynamic range, overtaking much of the mix and often seeming to be out of time. To deal with this, I used a substantial amount of compression, and EQ'd out a decent amount at around 4-6 kHz.

Extra Perc Verb



This track I added in after the mentoring session because I thought the three higher-frequency instruments - bells, crotales, and vibes - still sounded rather dry and present in the mix even when sent to the main reverb. I used Lustrous Plates to try to get more shimmer and sparkle in the higher frequencies.

Guitars



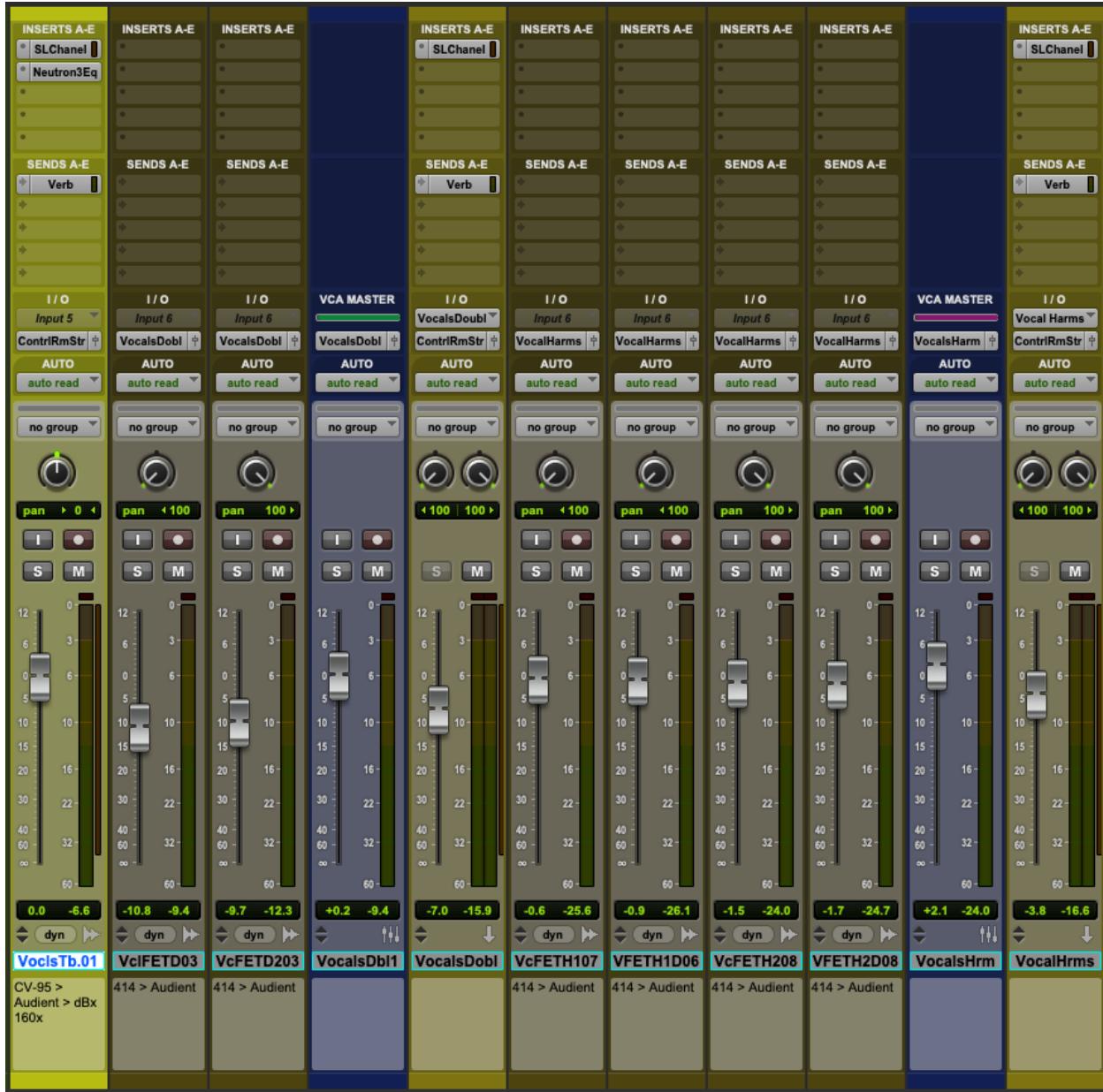
For my guitars, I tried treating the pairs of LDC and SDC as one unit by sending each pair to their own mono bus and then doing my processing on the bus. These busses were then sent to an acoustic guitar stereo bus with another SSL Channel.

My main goals with the acoustics were reducing the low frequency noise/hum and keeping the transients under control. The noise and hum was coming from the Seventh Circle pre-amps' high noise floor, which was a bit hard to recognize at first, but I liked the tone they gave the guitar so I let it slide and just filtered out a lot of the very low end in the SSL Channel. I also put a fast attack compressor on both busses to deal with catching those plucky transients that poked out just a little too much.



For the full guitar bus, I had a bit more filtering out of the low-end and also a tiny amount of a low shelf cut at around 400 Hz.

Vocals Part 1



To run down and quickly explain which channels are which here, I have the lead vocal on the left, followed by two vocal double tracks and their respective VCA and mix bus, then four vocal harmony tracks along with their VCA and mix bus. The vocal doubles came in at the bridge, and both the doubles and harmonies came in at the third chorus.



As you can see, I really liked my lead vocal sound coming into Pro Tools, so my processing was very minimal. I had a light amount of compression and very slight EQ cuts in the upper-mids. I also filtered out up to about 200 Hz with a high-pass to get rid of low frequency noise and de-emphasize Emma's fundamental frequencies a bit.



A similar amount of processing can be seen on the rest of the vocal tracks. From left to right, these are the channel strips instantiated on the Vocal Double bus, the Vocal Harmony bus, and, jumping ahead a little bit, the Vocal Ooos bus. They all had similar high-pass filtering and compression, and both the vocal doubles and ooos had a light high shelf boost in the upper mids.

Vocals Part 2, Verb, and Mastering

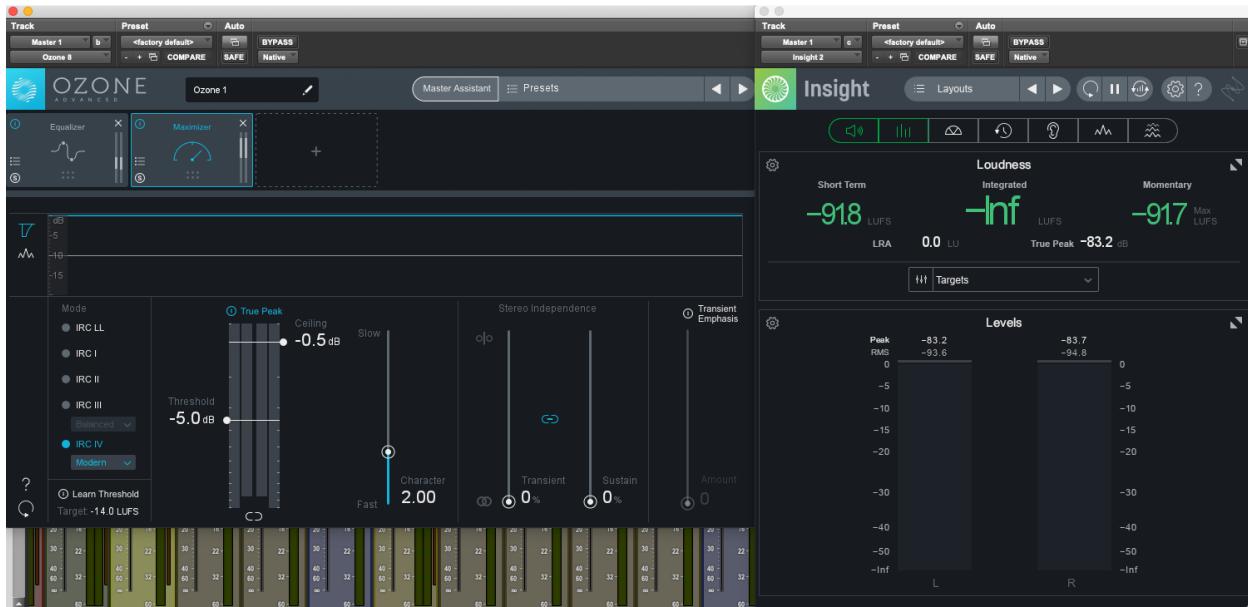


The four Ooos tracks were treated similarly to the harmony tracks, with a VCA and a bus.

For my reverb, I chose the R2Surround because I feel it does a good job at sounding natural and has a lot of useful presets that make the complex plugin a bit easier to digest. I liked the sound of the preset "Large Back Hall (Wide)", but thought it was a bit too resonant in the low end, so I put on a bit of a low shelf and filter to reduce some of that low frequency excitement. I tried it both before and after the reverb, and preferred the sound of it before.

Finally, below I have my Master chain, which consisted of an SSL Master Bus compressor, Ozone EQ, Ozone Maximizer, and iZotope Insight. I used the SSL to start off the process by aiming for gain reduction of around -3dB with a slow attack and fast release. Next, I used the Ozone EQ to give a gentle boost in the low-end and a gentle cut in the high-end. I then used the Maximizer with Insight to get a loudness around -14/-16 LUFS. Since this was a quiet piece to begin with, I wasn't upset to have a LUFS reading of around -16.





Automation

My automation runs were mostly focused on bringing out the solos in the bells and chimes and swelling the ensemble behind the vocal when needed. With the bells and guitar especially, I tried to bring them up and down in between vocal phrases. My vocal rides were very subtle, as it did not need much smoothing out in the first place.