

Caligula - Term 3 Project Proposal



For my final project I will create a 6 track EP for my band. Caligula are a three piece blues/alternative/hard rock band drawing influences from acts like Queens of the Stone Age, Radiohead, Oasis, Royal Blood, The Black Keys and Kasabian.

We believe the market has plenty of room for a UK rock band with big riffs and tight hooky songwriting. Royal Blood proved it was possible for that kind of act to break globally and nobody else in the UK mainstream appears to be doing what we're doing.

The aim is to have a polished EP to present to a record label in order to request funding for a tour, marketing and further recordings. While it's perfectly possible to break independently as an artist, I'd prefer to leave promotion, PR, marketing, radio plugging and tour management to professionals who specialise in those fields.

Project Scope

My minimum success criteria is to record 6 songs to a desk mix standard, with everything well recorded, EQ'd, compressed and balanced similar to a session Sean Hargreaves would send to a mixing engineer. This presents a huge technical challenge as everything needs to be recorded live in a studio. Due to constraints on studio hours these sessions need to be planned and executed with military precision. Furthermore, the songs need to have been road tested and sculpted within an inch of their life prior to recording.

Although there are merits to having someone else mix your work and give an outside perspective, this project also presents an opportunity to take a step towards becoming a pro-level mixing engineer. I therefore also intend to mix the tracks myself, although I will still deem the project a success even if I end up with 6 well recorded tracks that are easy for someone else to mix. I will seek plenty of advice and guidance along the way so I'm getting lots of 3rd party feedback regardless of who mixes the tracks.

Research & Underlying Theory

My research for this project involved both primary and secondary sources - the primary research included face to face interviews with professional producers, engineers and recording artists including Sean Hargreaves, John Kelly, Adam Moseley, Alessandro Favero, Paul Whalley, Ricky Damian, Kim Chandler and Martyn Ware. I also conducted several controlled experiments to test preamps, mics, compressors and guitar amps, as well as testing songs at open mic nights and noting where the audience reaction falls flat. Secondary sources included books, articles and online video tutorials.

Theory: Drum Recording

As part of my research for this proposal I conducted an interview with Alessandro Favero, an experienced recording and mixing engineer who's worked with the likes of Ricky Damian and Fab Dupont. His domain knowledge around recording and mixing rock drums was especially useful and key takeaways from that discussion are reported below with supporting theory from other sources.

Takeaway #1: Commit early

The likelihood is I'll be recording bass and drums in the same session at Sean's studio. Given the preamps, mics and outboard compressors at our disposal this presents an opportunity to make some world class drum recordings. It is therefore important that we get the vibe right there and then, as not only will this make life easier than leaving the processing for the mixing stage, but will almost certainly provide better results.

Furthermore, getting a great vibe at the recording stage means it forces you to slot everything that comes later around those initial recordings and there's little risk of that vibe being lost due to over-tweaking later on.

Takeaway #2: Plan the session like an F1 pit stop

In order to track drums for 6 songs in one session we need to be fully rehearsed and ready to go - that applies both to the performance and also to the mic setups and making changes to the drum kit.

The main challenge is that we'll likely want different drum sounds for different songs. Some of the songs will warrant drier and tighter drums like No One Knows by Queens of the Stone Age (2009, released 2002) while others may suit big roomy drums with epic sounding toms like Morning Glory by Oasis (1995). We may also want to experiment with drums stylistically - Shoot the Runner by Kasabian (2006) has a very meaty and forward drum sound which

adds punch to the record, while Radiohead tend to have very tight and dry sounding drums which sit at the back and form part of the sonic landscape, eg: Bodysnatchers (2007)

The mics need to be set up to easily capture both big-room and tight drum sounds without setting up / breaking down mics each time as this will eat into valuable recording time. My proposed solution involves the following:

- **Two Overhead Setups:** One setup would be for a very tight drum sound, the other for a very wide sound. Creative Sound Lab (2015) covers a number of overhead mic techniques which could be used. The tight drum sound could warrant a coincident or near-coincident overhead setup (eg Blumlein or ORTF), while a spaced pair would provide a wider stereo image and an Asymmetric technique like Glyn John would be more of a compromise.
- **Room Mics:** These can be dialled in or muted at the mixing stage to make the room seem bigger or smaller depending on the song. Creative Sound Lab (2018) outlines techniques to make the room seem even bigger, including pointing the room mics away from the sound source so they only capture the room reflections as well as physically placing an object between the mics and the sound source.

Before entering the studio we also need to have decided what drum sound and tuning each song should have. When interviewing Adam Moseley he discussed some of the questions he'd ask himself, eg: "do I want a mid-level kick to make room for a warm bass underneath that doesn't poke out, or a low kick supporting a scratchy bass that does?" Use of reference tracks will be crucial for this step.

Furthermore, we need to run a few practise recording sessions in the Alicia Light studio to rehearse the mic setups, practise tuning the drums and troubleshoot any potential issues ahead of time. Some of these takes may even be perfectly usable, thus reducing the workload when we get to Sean's studio.

Once all of these things have been planned and practised, we can enter Sean's studio knowing exactly what we're going to do and what to listen out for in the control room.

Takeaway #3: Make physical adjustments to the kit and the drummer's attack

Re-tuning the drums

The producer should be vigilant for whether a given drum sound isn't working and unafraid to ask the drummer to tune or play differently.

Using objects

We unfortunately don't have the luxury of a selection of different tom and snare drums. One workaround is the use of objects placed on top to control the resonance of the drum. Moon gel is commonly used for this, although there are a lot of other innovative methods. In a

video by Reverb (2015) Mark Guiliana demonstrates how to use an extra skin or mini cymbal to completely change the sound of a snare drum.

Adjust playing style

If the drummer finds a perfect attack or groove but isn't consistent with it then he should be called into the control room, shown the clip where he's nailing it and the engineer should explain that regardless of what the drummer can hear in the room that's the sound that will work on the record. The drummer should then re-enter the control room and keep adjusting his stick attack until the engineer tells him he's got it.

The same principle applies for when the cymbals are too loud or there are too many kick drums muddying a part up. Thankfully I have the luxury of working with a drummer who will understand when these things are pointed out to him.

Takeaway #4 - Be militant when checking for phase issues

Alessandro Favero, John Kelly, Sean Hargreaves all emphasised the importance of checking phase in their interviews. Creative Sound Lab (2015) gives a useful step by step process:

- What to listen for - is the low end of two mics working together or are they fighting each other?
- Firstly pan the overheads to mono and see if they're fighting - if so then the mics should be moved. For any mic adjustments Adam Moseley recommends using the EHHE method - Ears, Hands to move the mic, Hands to adjust the compression settings then Ears to see if it's the right sound.
- Bring up the kick - if there's phasing issues then flip the overheads
- Then check the snare - if it's out of phase then move the overhead mics until both kick and snare are in phase
- Now check snare top vs snare bottom and flip snare bottom if need be
- Then check tom mics and flip where needed
- Finally when checking high hat mics, the engineer should listen for the snare bleed and decide whether it sounds better flipped or not

Takeaway #5 - Try using a kick brick

Placing a heavy (but padded) object inside the kick drum helps to add a bit of flab to the kick sound. Alessandro suggested this would be a good technique for recreating the kick drum in No One Knows by Queens of the Stone Age (2002).

Drum Mic Selection

Sean Hargreaves provided lots of pointers around mic selection and placement for the drum recording, including:

- Kick in: Dynamic mic Inserted at a 45 degree angle looking at the beater
- Kick out: Padded condenser mic placed just at the spot where you can't feel the air move with your hand anymore when the drummer plays the kick
- Snare top: Sm57 taped to a pencil condenser. John Kelly also recommended using a starlight.
- Snare bottom: KMS105 hypercardioid vocal mic. Adam Moseley also recommends a Neumann as it's warm and filters out the buzz. The purpose of this mic is to capture the rattle.
- High Hat: Point at the hat and null everything else
- Crush mic: condenser or ribbon mic capture equal amounts of kick and snare which then gets heavily compressed
- Overheads: Glyn Johns 40 inches from the snare. Coles are great mics for this but make sure they don't get too close to the ceiling. Adam Moseley also recommends vintage ribbon mics as they are warm sounding and prevent issues with too many highs
- Floor tom: RA20

Theory: Vocal Recording

Mic, Preamp and Compressor Selection

I conducted a controlled experiment in Sean's studio in order to establish the best vocal chain to use during the recording session. I tested the following:

Mics:

Soundeluxe Condenser

Shure SM7B Dynamic

Preamps:

Germanium

Neve

API

Compressors:

1176

Distressor

The mics were both very pleasing and there was no clear winner. However it became apparent very early on that the 1176 was too aggressive sounding - this was a surprise as I assumed an aggressive compressor would suit an aggressive vocal performance, but the clean sound from the Distressor was much better for my voice. I tried a variety of settings and found that it sounded best at a 6:1 ratio and the indicator lights on the box staying in the orange range with occasional red for loud notes. My voice sounded very smooth in this setting and sat well on top of a distorted guitar track.

The Neve didn't seem to suit my voice while the API performed very well. The Germanium also sounded good but I will probably opt for the API in the actual recording session.

Mic Placement

Adam Moseley recommended asking whether you want the vocal sibilant and up close or further away to bring out more ambience. The proximity effect could be taken advantage of to increase low end by singing right into the mic. Paul Whalley also suggested recording vocals at a 45 degree angle to make the sound darker and remove sibilance. Also, he suggested recording stacked vocal takes recorded at different angles which makes the vocal sound fatter - this can also include singing into the back of the mic. These are all things I will have to consider and test ahead of the recording session.

Vocal Performance

The quality and vibe of the vocal performance will have a much greater bearing on the quality of the recording than any mics, mic techniques, preamps or processing after the fact - these things simply serve to elevate the performance. Vocal performance is therefore one of the most important considerations when producing this album. There will be two factors at play in order to lay down vocals I'm happy with - vocal technique and coaxing vocal performances out of myself much like an engineer would do for their client.

Below are the results of a "Vocal MOT" I had a while back which will form the basis of my vocal training.

TECHNIQUE	A	B	C	D	E	MUSICAL/PERFORMANCE ASPECTS	
1. DYNAMIC POSTURE: http://voicecouncil.com/unlink-your-pipe/	☐	☐	☒	☐	☐	13. INTONATION: (Tuning) ☐ ☒ ☐ ☐ ☐	
2. SUPPORT: (Core Stability) http://voicecouncil.com/breathing-support/	☐	☐	☐	☒	☐	14. RHYTHM: (Phrasing/Groove) ☐ ☒ ☐ ☐ ☐	
3. BREATHING EFFICIENCY: ☐ A. over 25 seconds ☒ B. 20-24 seconds (23 seconds) ☐ C. 15-19 seconds ☐ D. 10-14 seconds ☐ E. under 10 seconds In-breath: some chest breathing Out-breath:						15. RANGE: ☒ A. 3 octaves + (3.1 oct) ☐ B. 2.4 to 2.7 octaves ☐ C. 1.5 to 2.3 octaves ☐ D. 1 to 1.4 octaves ☐ E. less than an octave Bottom F# to Top G	
4. NATURAL ONSET (on "Ah"):	☐ A. Simultaneous ☐ B. Light Glottal ☒ C. Glottal ☐ D. Very aspirate ☐ E. Harsh glottal						16. AGILITY (Speed): ☐ A. Very fast/accurate ☐ B. Fast ☒ C. Moderate ☐ D. Slow ☐ E. Very slow/inaccurate
5. Tongue Root Tension?	Yes					(In repertoire): Some nice licks ☺ (5-note scales): Unfamiliar exercise	
6. BASIC QUALITY:	☐	☒	☐	☐	☐	17. CREATIVITY: (In interpretation) ☐ ☐ ☒ ☐ ☐	
Nice grit ☺							
7. VIBRATO:	☒	☐	☐	☐	☐	18. DYNAMICS: (Variation in soft/medium/loud singing) ☐ ☒ ☐ ☐ ☐	
Distinctive!							
8. RESONANCE:	☐	☐	☒	☐	☐	19. EMOTIONAL CONNECTION: ☐ ☒ ☐ ☐ ☐	
9. Nasality?	No						
10. LARYNX SIZE:	small ☐	medium ☐	large ☐			20. CONTROL of NERVES: ☐ ☒ ☐ ☐ ☐	
11. NEGOTIATION of "BREAK" (Chest voice to Head voice):	☐	☐	☐	☒	☐	21. CURRENT EXERCISE REGIME (if any): Weights at gym (40-60 mins) 1-2/week	
12. ARTICULATION: Could be more percussive http://voicecouncil.com/tips-for-the-tongue-lips/	☐	☐	☒	☐	☐	22. DESCRIPTION of VOCAL STYLE: A stylish, vibey singer/songwriter ☺	

In brief, the main areas for improvement are as follows:

- Singing posture (ears in line with shoulders, chest open, torso long) - Kim Chandler (2011c)
- Breath support (abdominal contraction at the start of each phrase similar to laughing, be mindful that the loudest notes should use the least air, engage lat muscles if extra support is needed) - Kim Chandler (2011a)
- Articulation (the percussive element of singing - form fixes include stretching the tongue to alleviate tension, tongue touching teeth for all vowels, consciously using lips to articulate consonants) - Kim Chandler (2011b)
- Vocal agility and accuracy exercises
- Smoothing out gear change between head and chest voice
- More Resonance ("m", "n" and "ng" exercises)

Psychology of Vocal Recording

Paolo De Gregorio (2011) recommends a light Aerobic warm up before singing to get the heart going and connect with breathing. Other techniques he suggests to keep the energy up in a vocal session include drinks, rest between takes and positive reinforcement.

Kyle Bagley (2012) says that low level lighting can relax a singer but also may make them feel tired after a while. A loud headphone mix will help a singer sing louder but may lead to fatigue. A headphone mix that's too quiet can cause the singer to go flat. He also recommends starting with the easiest song, then going after the hardest ones next once the singer is warm as they won't have as much energy later in the session.

Vocal Comping

If the previous step is adhered to and the vocal parts are well rehearsed then very little of this will be required. Paul Whalley recommended picking takes based on vibe and manually pitching words using Protools rather than using pitch correction. A pre-requisite for this approach is of course recording a good performance to begin with.

Bass

Bass will likely be recorded DI in Sean's studio using the chandler preamp as per Sean's recommendation. This can then be re-amped later if need be.

Alessandro Favero suggested a technique of using a real bass for the low mids and a synth for the sub bass, then using dynamic EQ to filter the low mids out of the synth and sub bass out of the real recording. The result is a fat and even tone.

Paul Whalley advocated layering lots of different bass sounds, as well as varying the bass tone between sections. Things to avoid when layering include the low end becoming muddy or the bass disappearing completely - for both he stressed the importance of checking phase.

Conclusion

To conclude, I have my work cut out. My first priority is to get the songs as polished as they can be, as well as record guide guitar and vocal tracks so the other band members can write and rehearse their parts over them. Readily available guide tracks are also important for receiving feedback and enabling impromptu recording sessions. In the meantime I also need to train my vocals daily and practise the songs so they can be recorded with minimal takes. Once the parts are written we then need to rehearse the drum recording sessions to get the process tight. Finally I will mix the songs which should be straightforward with access to professional mentoring, provided the earlier steps have been done correctly.

References

Creative Sound Lab. (2015). *Drum Overheads - Recording Drums without Samples - Part 1 - Mastering Drum Overheads*. [Online Video]. 17 March 2015. Available from: <https://www.youtube.com/watch?v=wbM5mFEKtw8>. [Accessed: 31 May 2019].

Creative Sound Lab. (2018). *5 Ways to Make Your Room Sound Larger Than it Really Is*. [Online Video]. 10 January 2018. Available from: <https://www.youtube.com/watch?v=tpj5ul34FeU>. [Accessed: 31 May 2019].

Kasabian 2006, "Shoot The Runner", on "Empire", Album. RCA. UK.

Kim Chandler. (2011a). *Breathing And Support*. Available: <http://www.voicecouncil.com/breathing-support/>. [Accessed 2nd June 2019].

Kim Chandler. (2011b). Tips for the tongue and lips. Available: <http://www.voicecouncil.com/tips-for-the-tongue-lips/>. [Accessed 2nd June 2019].

Kim Chandler. (2011c). *Unkink Your Pipe*. Available: <http://www.voicecouncil.com/unkink-your-pipe/>. [Accessed 2nd June 2019].

Kyle Bagley. (2012). *How to get the best vocal performance from your singer*. Available: <https://www.audio-issues.com/recording-tips/recording-vocals-best-performance/> [Accessed 2nd June 2019]

Queens Of The Stone Age. (2009). *Queens Of The Stone Age - No One Knows*. [Online Video]. 10 January 2018. Available from: https://www.youtube.com/watch?v=s88r_q7oufE. [Accessed: 31 May 2019].

Oasis 1995, "Morning Glory", on *(What's The Story) Morning Glory?*, Album. Epic. UK

Paolo De Gregorio. (2011). *The secrets of recording great vocals*. Available: <https://pedals.thedelimagazine.com/the-secrets-of-recording-great-vocals/> [Accessed 2nd June 2019]

Radiohead 2007, "Bodysnatchers", on *In Rainbows*, Album. XL Records. UK

Radiohead 2003, "There, There", on *Hail To The Thief*, Album. EMI. UK

Reverb. (2015). Mark Guiliana: Making Acoustic Drums Sound Electronic | Reverb Drum Tricks. [Online Video]. 27 July 2015. Available from: <https://www.youtube.com/watch?v=qDQ7eHNufNs> [Accessed: 31 May 2019]