

Workshop: Processing Field Recordings



Phonography Austin is dedicated to exploring phonography (the creation and presentation of field recordings as art objects) and acoustic ecology (the study of the effects of the acoustic environment on those living within it).

phonographyaustin.org



phonographyaustin.org

1. The aesthetics of processing in phonography (as opposed to field recording)

- a. *Introduce the ideas of framing & verite*
 - Make decisions in the field.
 - Accept what happens as part of your piece.

2. Problems

- a. *Frequency balance*
 - How to avoid harsh/boomy/honky recordings + add headroom.
- b. *Enhancing specific sounds*
 - How to bring out the bugs and squash the traffic.
- c. *Dynamic range*
 - If quiet bits need to be louder they can be.
- d. *Noise floor*
 - Dealing with the AC.
- e. *DC offset*
 - Why is it always hissy?
- f. *Phase issues*
 - Where'd the low frequencies go? Why does my head hurt?

3. Best practices when processing

- a. *Listen on a system you are used to*
- b. *A/B your process*
- c. *Use reference track*
- d. *Focus on preserving dynamic range*
- e. *Don't work on source track*
 - Consider version control methodology.
- f. *Use your ears!*

9. Last steps

- a. *Convert to final format*
 - Use good dither and SR.
 - Powr-1 for least dynamic source, Powr-3 for most dynamic.
 - Preserve source assets.
- b. *Avoid similar problems in future with technique*
 - Use your ears when recording.
 - 3/1 rule for multiple mics.
 - Change micing position.
 - Isolate recorder/mic from vibration + wind.
 - Don't record to lossy format.
 - Record at highest bit/sample rate available.
 - Make sure your recorder is not using dynamic processing.
 - AGC is bad.
 - Limiter can be OK.

7. Specialty (noise floor, DC offset, phase issues, etc)

a. RX denoise

- A/B carefully!
- Always use highest quality when rendering.

b. DC offset tools

- Caused by mic or electronics not using neutral air pressure as center.
- Go section by section if there are gain changes.

c. Phase tools

- Toggle monitor between mono and stereo to test.
 - Listen for bass dropping out.
 - Try inverting one channel.
- Tools typically will adjust time base of one channel.

d. Transients like LP surface noise, spit tics, etc.

- Again with RX, or manually edit.

4. First steps

a. Don't record to lossy format unless you did

b. Convert to lossless if you did

c. Convert to high sample rate/bit rate

- Artifacts generated during processing will be handled more smoothly.

d. Consider order of effects with regard to dynamic range

- Specialty for denoise/DC offset/phase (discussing last due to reasons).
- High pass.
- Dynamic processing.
- Cosmetic EQ/multiband.

8. Editing

a. If you are gonna edit process first

- If anything changes during recording you'll notice it more.

b. Equal power vs equal gain

- Equal gain better if material is phase coherent (other creates loud xition).
- Equal power better if not (EG creates quiet xition).
 - Use your ears if unsure.

5. EQ (frequency balance, enhancing specific sounds, add headroom)

a. *Low cut/High pass*

- Cuts low boomy.
- Adds headroom.

b. *High cut/low pass*

- Cuts high frequencies.

c. *Shelving*

- Adds overall lows or highs.
 - Won't add what's not there already.
- Like bass/treble knobs but with adjustable f + q.

d. *Bandpass/Notch*

- Cut or boost specific frequencies.

e. *RX*

- Cut or boost specific frequencies (section 7).

f. *In general (excluding RX)*

- Use linear phase when possible.
- Cut, not boost then compensate with gain change.

6. Loudness (dynamic range)

a. *Normalization*

- Brings everything up, including noise floor.
- Can change signal - check settings.
 - Peak vs RMS (vs LUFS, which is the future but not 100% standard - doesn't reference loudness against air pressure).
 - Threshold.

b. *Limiting*

- Squashes loudest parts of signal, bringing rest up.
 - Great for transients/wide dynamic range.
 - Creates higher noise floor.
 - Can sound aggressive/harsh.

c. *Compression*

- Cuts signal when threshold is exceeded, amount determined by ratio
 - Like a limiter but not as aggressive - limiter is >20 dB threshold.
 - Can cause pumping/breathing.
 - Listen for noise floor changes.

d. *Multiband compression*

- Compressors per frequency range.
 - Use diff attack times per range - lower/slower.

e. *Expansion*

- Cuts sounds *below* threshold.
- Worth exploring but not practical.
 - Also shitty.