



Deep Dive 4: Advanced Audio Engineering & Mastering

Forensic Audio Cleanup, Mastering Chains, and Broadcast Standards

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You've treated your space, mastered the mic, and learned how to price your work. But once you begin delivering paid work to top-tier clients, broadcast networks, and audiobook publishers, basic editing is no longer enough. High-end clients don't reject auditions because of a cheap microphone—they reject them because of mouth clicks, inconsistent dynamics, poor equalization, and uncalibrated loudness.

This guide takes you past basic presets into forensic cleanup, tailored EQ, transparent dynamic control, and industry-standard delivery specs.

Surgical Cleanup: Eliminating Distractions

Before you apply an ounce of compression or EQ, your raw dialogue must be spotless. Processing bad audio only amplifies the flaws.

1. Taming Mouth Clicks & Saliva Noise

- **The Root Cause:** Dehydration, coffee, tea, and citrus dry out your mouth, making saliva sticky. Sensitive condenser microphones pick up every micro-click.
- **The Fix:** Drink plenty of room-temperature water hours before recording. For clicks that slip through, use spectral editing tools (in Audacity, Reaper, or iZotope RX) to manually attenuate high-frequency saliva clicks between **2 kHz and 12 kHz** without dulling the vocal tone. Avoid heavy de-clicker plug-ins that make you sound like you have a lisp.

2. Managing Breaths: The Human Element

- **Never Delete Breaths Entirely:** Dead silence between lines sounds robotic, unnatural, and jarring to the listener.
 - **The Attenuation Rule:** Instead of cutting breaths out, lower their volume by **-6 dB to -10 dB**. This maintains the natural human pacing and rhythm of your read while preventing the breath from distracting the audience.
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Tailored Vocal EQ: Carving, Not Boosting

Equalisation (EQ) is about cleaning up problem frequencies to let your natural vocal characteristics shine through — not drastically reshaping how you sound.

- **Below 80 Hz (Rumble / HVAC):** High-Pass (Low-Cut) Filter. Roll off everything below 75–80 Hz with a steep curve.
- **200 Hz – 400 Hz (Boxiness / Mud):** Gentle Cut. Dip by -1 dB to -3 dB with a narrow bell curve to clear up room resonance.
- **2.5 kHz – 4.5 kHz (Intelligibility / Cut):** Subtle Lift. Add +0.5 dB to +1.5 dB if your read lacks punch or clarity.
- **5 kHz – 8 kHz (Sibilance):** De-Esser. Use a dynamic de-esser to catch harsh 'S' and 'T' spikes without dulling overall brightness.
- **10 kHz – 14 kHz (Air & Sheen):** High-Shelf Boost. A wide, gentle +1 dB boost adds sparkle (only in a well-treated room!).

Strategic Compression: Transparent Dynamics

Compression narrows the volume gap between your quietest whisper and your loudest shout, creating a solid, professional presence.

- **Low Ratio (2:1 to 3:1):** Keep it subtle. Heavy compression destroys dynamic acting and makes your voice sound squashed and fatigue-inducing.
- **Attack & Release Times:** Use a medium attack (approx. 20 ms) so your initial consonants remain crisp and clear, paired with a natural release (approx. 60–100 ms).
- **Gain Reduction Target:** Aim for no more than -2 dB to -4 dB of gain reduction on your loudest peaks. If the needle drops further, adjust your input gain or step slightly back from the mic.



Delivery Standards: Getting the Specs Right

Every sector of the voiceover industry has strict technical delivery parameters. Submitting a file that fails compliance checks can result in immediate rejection by automated QC systems (like Audible/ACX) or sound engineers.

Industry Loudness & Format Checklist:

- **Auditions & Casting:** Target: -18 to -14 LUFS | Peak Ceiling: -1.0 dB True Peak | Noise Floor: Below -55 dB | Format: MP3 (320 kbps CBR, Mono, 44.1 kHz).
- **Commercial / Radio Broadcast:** Target: -16 to -14 LUFS | Peak Ceiling: -1.0 dB True Peak | Noise Floor: Below -55 dB | Format: WAV (24-bit PCM, 48 kHz, Mono).
- **Corporate / E-Learning:** Target: -19 to -16 LUFS | Peak Ceiling: -1.0 dB True Peak | Noise Floor: Below -60 dB | Format: WAV (24-bit or 32-bit Float, 44.1 kHz).
- **Audiobooks (ACX / Audible):** Target: -23 dB to -18 dB RMS | Peak Ceiling: -3.0 dB Peak | Noise Floor: Below -60 dB | Format: MP3 (192 kbps+ CBR, Mono, 44.1 kHz).

File Exporting Rules:

- **Never Send Stereo Tracks for Single-Voice Work:** Always record and export voiceovers in Mono. Stereo files simply double the file size with identical data on left and right channels.
- **Naming Conventions Matter:** Always follow the client's file-naming instructions to the letter (e.g., ClientName_Project_Take1_SimonLewington.wav).

Building Your Mastering Macro

To speed up your daily workflow, build a standardized macro or processing chain in Audacity or Reaper that executes your core mastering steps in the correct order:

1. **High-Pass Filter:** Roll off sub-frequencies at 80 Hz.
2. **EQ Curve:** Apply your custom vocal correction curve.
3. **Gentle Compression:** Smooth out dynamic peaks (2:1 ratio).
4. **De-Essing:** Tame harsh sibilants between 5 kHz and 8 kHz.
5. **Limiters / Normalization:** Set final output ceiling to -1.0 dB True Peak (or -3.0 dB for ACX/Audible).



Conclusion: Professional Sound is Your Calling Card

Mastering advanced audio engineering doesn't just make you sound better—it makes you a dream to work with. Audio engineers and producers remember voice actors whose files require zero cleanup and fit straight into a broadcast mix.

With your booth treated, your script performance dialled in, your business strategy running, and your mastering chain perfected, you now possess the complete toolkit of a working voiceover professional.

Special Tip:

Create an A/B reference track of your favourite broadcast commercial or audiobook. Drop it into your DAW alongside your own recording and compare the frequency balance and loudness. Use your ears and reference meters to bridge the gap between your home recordings and industry-standard commercial releases!

I'm currently building a series of workshops and deeper guides that will turn these foundational skills into career longevity.

Don't let your training stop here! Keep visiting www.simonlewington.com, where I'll be releasing advanced tutorials, email templates for direct marketing, and exclusive insights to ensure your voiceover career doesn't just start—it thrives.

Your success story starts now. Stay tuned!