Musician
- ON A MISSION -

VOCAL MIXING CHEAT SHEET

BEFORE MIXING

- We expect to hear vocals that are super consistent in volume - every word and syllable should be loud and clear
- This isn't achievable with compression alone
- Instead, automation is needed
  - Manually turn up quiet words/phrases and turn down loud words/phrases
  - Ideally, this automation occurs BEFORE compression, so the compressor gets a more level signal coming into it
    - Makes the job for the compressor much easier
    - Few ways of doing this
      - Automate the clip gain
      - Automate the lead vocal channel, send to a new aux track and add compression there
    - Can automate manually with mouse, or with a control surface
      - I prefer to do it with the mouse and draw in the automation
      - More accurate

- - - More detail
    - Listen to each section or word
      - Is anything too quiet/loud?
      - Are certain in-between words lost?
      - Do the opposite of the waveform
    - Do this before you start mixing, as part of the prep phase

EQ

- Surgical EQ
  - Remove ugly room resonances
  - Remove low end noise (high pass filter)
- Tonal EQ
  - Adjust the tone of the vocal to taste.
  - Keep it subtle and start with boosts and cuts of around 3dB or less.
    - We hear voices every day, so as soon as you start to apply heavy EQ moves the vocal will start to sound unnatural.
  - Top end boosts are the exception to this.
    - When mixing pop and other mainstream genres it's common to apply aggressive boosts to the top end of a vocal. This adds air and makes the vocal sound more expensive.
    - Start around 10kHz
  - Common adjustments
    - Removing muddiness around 200-500Hz
    - Boosting upper mids (maybe around 1kHz, or around 4kHz) to bring the vocal out in the mix

Compression

- Use two compressors
  - Sounds more natural than using one compressor doing all the work
  - Start with a faster, higher ratio compressor to catch peaks
  - Then use a slower, low ratio (2:1 or less) compressor to apply constant soft compression
    - Also use a slow attack time here to add more aggression to the vocal
- Tonal compression
  - This approach uses a lower ratio and slow attack times to shape the tone of the vocal, as well as controlling dynamics.
  - If you just use one compressor, use this approach.
  - Fast attack time for thick heavy vocals (but be careful), slow attack time for aggressive, punchy vocals (this is usually preferred).
  - Here are my go-to vocal compression settings for this approach:
    - Ratio: 2:1

- Attack Time: 15ms (but up to 30ms for more punch)
- Release Time: 40ms
- Threshold: -24dB
- Gain Reduction: 2-3dB
- Knee: Soft
- Makeup Gain: 2dB
- Dynamic compression
  - This approach is about catching the louder peaks.
  - Requires a faster attack time and higher ratio.
  - If you use two compressors, take this approach with one of them.
  - In terms of plugin order, this approach often works best BEFORE tonal compression.
  - Recommended starting settings:
    - Ratio: 3:1
    - Attack Time: 5ms (medium-fast)
    - Release Time: 20ms (medium)
    - Threshold: -24dB
    - Gain Reduction: 2-3dB
    - Knee: Hard
    - Makeup Gain: 1dB

REVERB VS DELAY

- Generally, you should rely more on delay than reverb to create space around the lead vocals
  - BUT reverb is making somewhat of a comeback in mainstream music
- My go-to effect busses for lead vocals
  - Stereo Delay
    - Slapback, low feedback (0-10%)
    - Different times on left and right (50-200ms)
  - Mono Delay
    - Timed mono delay
    - Can have higher feedback if desired (0-30%)
    - Whole note (crotchet) or minim
    - Time manually if you want it to stand out more
  - Plate Reverb
    - Really short decay time
    - For stereo width and sweetness, not noticeable reverb
  - Reverb Throw
    - Long decay time
    - Can cut all the highs and boost the lows for a deep 'sub reverb throw'
    - Use as a spot effect (automate the send on the lead vocal buss)

Effect throws

- Automate sends to bring in effects on the last word of a phrase or section
- Be creative - add flanging, chorusing and saturation to your effects
- Can also apply effects directly to the vocal for sections
  - e.g. the vocal telephone effect - cut all the lows and highs with filters, and add saturation

5 Techniques To make the Vocals Sit in the Mix

1. Volume Automation
   a. Use volume automation to smooth out vocals before applying compression
   b. Look for words or phrases that you can't hear well or that jump out of the mix
   c. Lower the volume of harsh sounds that distract from the lyrics
2. Serial Compression
   a. Using more than one compressor can take the heavy work from one compressor and spread it across two or more compressors
   b. Try setting a compressor with faster settings to tame peaks and a second one with slower settings to smooth out the rest of the track
3. Volume Balancing
   a. Vocals are usually the most important part of a mix
   b. Test that your vocals are sitting loud enough by turning down your volume and seeing if you can still hear your vocal clearly
   c. Next turn up the volume again and see how it sits there
   d. Adjust as needed
4. Range Allocation
   a. Carve out some space for your vocal using EQ
   b. Find the important frequencies in your vocal
   c. Make cuts in those frequencies on guitars, drums, synths, etc. to make room for your vocal
5. Reverb and Delay
   a. Use more subtle reverb and delays to make the vocal sit right
   b. Load up a reverb and/or delay plugin and listen to the different types of reverbs and delay types
   c. Once you find one you like, blend it in until you can hear it
   d. Once you can clearly hear the effect, back it off a bit and it should blend in nicely

3 Vocal Thickening Tricks

1. The Thick Reverb Trick

      a. Create a new reverb send with an EQ that is boosted in the low-mids with cuts to the sub-bass and upper-mids

      b. Look for a darker reverb to complement the warm EQ boost

      c. Send the vocal to the reverb and adjust the volume or EQ boost until you've reached the desired thickening

2. Waves Vocal Doubler/Pitch Shift Chorus Technique

      a. Waves Vocal Doubler

            i. Load up the plugin on an auxiliary channel

            ii. Slowly add the affected vocal to the mix and mix it in until you hear just a bit more thickness/interest

      b. DIY

            i. Manually create this by creating two auxiliary channels panned left and right and adding a pitch shift plugin to each channel

            ii. Set the pitch shift on each channel the opposite of each other (+6, -6)

            iii. Adjust the delay of each plugin until you are pleased with it

            iv. Blend the two channels into the main mix

3. Subtle Chorusing

      a. Add any chorus effect to the vocal

      b. Adjust the mix knob or blend of the plugin until you can subtly hear it

      c. Experiment with adding this with pitch shifting

Want to create professional, radio-ready mixes at home?

[Check out the free tutorials on the Musician on a Mission YouTube channel](#)