HOW TO MIX AND MASTER A SONG

By Dave Heffner

- “Save As” frequently while going through the steps below.
- Aux Send tracks (ex. Reverb, Delay, Saturation) can be used at the time of recording since the effect is not part of the audio file; thus, can be changed later in the mixing process. For example, many singers like to hear reverb while singing, but may be reduced later while substituting slapback delay.
- Arrange tracks: from the bottom up and group where appropriate. Drums, Bass, Strings, Guitars, Keys, Vocals at the top. Consider double or triple lead vocals.
    - Color code the tracks by similar function and assign descriptive names.
    - Freeze tracks if there are many virtual instruments.
    - Consider creating a Routing Folder for all vocals and vocal Sends.
    - Is every track contributing to the song at every bar? Remove, if not.
- Audio tracks: Trim front and back, etc. Use pitch tuners such as Melodyne. Fix volume discrepancies and audio aberrations such as breaths and apply fades.
- Gain stage: Leave 6 - 10 db headroom on the Master track. Raise or lower volume on individual tracks. Adjust as a Group, then reset Aux / Master tracks back to 0 dB.
- Pan: Lead vocal, bass, and kick (if separate track) in center. Consider having two rhythm guitar or other support tracks panned 10 and 2 o’clock. Pan left to right, narrow to wide. Pads and strings pan wide in stereo. Place sounds across the stage. Quick adjustment of track volumes if needed.
- Add a Desser to all vocal tracks. Use the appropriate preset and tweak to desired effect.
- EQ (after recording) as an insert on every track or group.
    - C1 = 64 Hz, C2 = 128 Hz, C3 = 266 Hz, C4 = 512 Hz, C5 = 1.024 kHz, C6 = 2.048 kHz)
    - HPF on every track. 30 Hz Kick, 60 Hz bass.
    - Additive and Subtractive EQ. adjust Q and db depth < 3 db.
    - Create a broad frequency spectrum (use spectrum tool). Don’t pile everything around 250 Hz. Goal is to enhance the track and give it a unique frequency range.
- Compression (after recording) as an insert.
    - Input should equal output. Adjust the gain. Use presets, then make adjustments.
    - Try to avoid compression beyond 3 db unless looking for a special effect.
    - The input volume should equal the output volume. A/B the effect.
    - Quick adjustment of track volumes if needed.
- Send busses

    - Reverb: unify but create a spectrum of less on vocals to more for a string section. Imagine how a room is laid out. Have some reverb on every track. When you explicitly hear it, pull back slightly. Very little on lead vocals.
    - Delay (slapback) Substitute for reverb on vocals. Increase until doubling, then pull back a bit to create a thicker sound. Careful using it with drums. Instead use Saturation.
    - Saturation (drums and vocals especially)
- From this point onward, consider using the Ozone mastering tool.
- Volume (MONO) fine tune and apply automation.
    - Carve out space for the vocals. Reduce rather than boost.
    - Consider a Mix AUX track for everything other than vocals.
    - Set back to Stereo with widening tools on tracks such as Choir.
- Reference tracks. Ideal if added as an additional track to the song.
- EQ Master track: Boost lower and upper shelves < 3 db
- Limiter on the loudest part of the song. Goal LUFS < or = (-11)
- Bounce as WAV 44.1kHz/ 16 bit and MP3 for emailing.
- Test on small speakers, such as a cell phone.
    - May have to boost upper bass. If big bass loss, make a duplicate track an octave higher or change the sound.