**Mix Rescue: Audio Files**

The audio files available on this page accompany my Mix Rescue article in SOS July 2015 about mixing two albums I recorded for the band Spektakulatius. The filenames are fairly self–explanatory, but here are some additional notes to describe exactly what you’re hearing in each case. For complete details about the setup of the ‘Wayfaring Stranger’ recording mentioned below, see [www.cambridge–mt.com/rs–ch10–case1.htm](https://www.xn--cambridgemt-ug3f.com/rs%E2%80%93ch10%E2%80%93case1.htm" \t "_blank), and there are also a selection of full multitracks from this session available for download at [www.cambridge–mt.com/ms–mtk.htm#Spektakulatius](https://www.xn--cambridgemt-ug3f.com/ms%E2%80%93mtk.htm" \l "Spektakulatius" \t "_blank) if you fancy having a go at mixing them yourself. A three–part video series showing all the basic processing I used for many of the Spektakulatius mixes can be found at [www.cambridge–mt.com/rs–ch10–case1.htm#Mix](https://www.xn--cambridgemt-ug3f.com/rs%E2%80%93ch10%E2%80%93case1.htm" \l "Mix" \t "_blank).

**BassResonance01**

One bit of necessary mix troubleshooting resulted from a sporadic low–frequency resonance within the upright bass instrument itself, which you can hear in this audio example. It’s most noticeable in terms of the unmusical emphasis it gives to the fundamental frequency of the ‘E’ note at 0:04 and 0:06, but it also affects the fundamentals of adjacent pitches a little too.

**BassResonance02\_DynEQ**

To tame the sporadic resonance in the bass part, I trained a single band of dynamic EQ on it using Melda Productions’ MDynamicEQ plug–in. The band was set to a frequency of 78Hz, with a moderately narrow Q value of 2, and it attenuated up to about 5dB at its maximum gain reduction, using an attack time of 37ms and a release time of 432ms. The effect is still quite subtle, though, if you compare this example with the BassResonance01 file directly.

**Enhance01\_DryMix**

The following eight examples demonstrate how I used effects and bus compression to enhance many of the Spektakulatius recordings at mixdown. This first audio file comes from a song called ‘Wayfaring Stranger’ and so far I’ve just put together a dry balance of it in the Cockos Reaper DAW. The only processing I’ve used so far is six high–pass filters, four bands of EQ, two compressors, a single transient processor, and some level automation. Although the balance is now fairly creditable, the vocal part sounds a little dislocated from the mix. This is because the singer recorded her part in a DIY isolation booth, so she generates no ambient spill on the rest of the band’s mics.

**Enhance02\_BlendVerbSolo**

To draw the singer back into the mix and blend her with the rest of the band, I’m going to add a short ambience reverb, roughly designed to emulate the early reflections of the room the band recorded in. You can hear this effect in isolation in this audio example. To hear it in the mix, listen to the Enhance03\_BlendVerbMix file.

**Enhance03\_BlendVerbMix**

If you compare this audio example with Enhance01\_DryMix, you’ll hear how the singer now sits more comfortably as part of the band, on account of the added reverb showcased in the Enhance02\_BlendVerbSolo file. Notice, though, that the effect is deliberately quite subtle, to avoid it sounding like an obviously artificial addition. (To hear the differences more clearly, import the audio files into your DAW so you can switch instantaneously between them on the fly.

**Enhance04\_SpaceVerbSolo**

The effect that I’ve soloed in this file is designed to expand the perceived dimensions of the recording room slightly, so that the small–room signature of the raw recordings themselves is less apparent. The reverb is still fairly short, but in this case it’s added to all the instruments in the ensemble, not just the vocal. To hear this reverb in context, check out the Enhance05\_SpaceVerbMix file.

**Enhance05\_SpaceVerbMix**

Mixing in the reverb you heard in the Enhance04\_SpaceVerbSolo audio file subtly expands the apparent acoustic space. Again, though, it’s not designed to be a massive change, because the aim is to enhance the natural musical event, rather than making it sound like we’ve added something artificial.

**Enhance06\_SustainVerbSolo**

Another reverb effect that can flatter acoustic music is a longer–decay patch without appreciable early reflections, of the type you can hear in this audio example. This kind of reverb helps add warmth and sustain without supplying too much conflicting spatial information. Notice that I’ve deliberately biased the effects send levels to emphasise the piano in the reverb sound, because I feel that this instrument will benefit most from the enhancement. Listen to the Enhance07\_SustainVerbMix file to hear how this reverb sounds within the full mix.

**Enhance07\_SustainVerbMix**

Now you can hear the mix with the sustain–enhancement reverb (isolated in the Enhance06\_SustainVerbSolo audio file) added to it. Although this reverb is slightly more audible in its own right, it’s still subtle enough not to distract from the nuances of the musical performance, especially given that the end listener won’t be comparing this mix with the dry version as we can here.

**Enhance08\_BussComp**

Some master–bus compression from Cytomic’s The Glue plug–in provides a further gentle cohesion, using a slow–attack (30ms), fast–release (100ms) setting to trigger 2–3dB of gain reduction at a 4:1 ratio. A 75Hz high–pass filter was engaged in the compressor’s side–chain to make it less sensitive to low–frequency information from the upright bass and kick drum.

**Sustain01\_AllOut**

Although the Enhance07\_SustainVerbMix file has already demonstrated the kind of subtle reverb processing I used to enhance warmth and sustain on many of the Spektakulatius mixes, some of the songs demanded more assistance of this kind. The following audio examples demonstrate some of the other strategies I used for this, in order to avoid washing the mix out with too much reverb. This audio example contains a section of the song ‘Forever Young’ without any artificial sustain enhancements — just a subtle Hammond organ pad I suggested the band’s keyboard player add during the tracking session.

**Sustain02\_ParaComp**

For this example I’ve added in a pair of parallel compression channels fed from the acoustic guitar and piano parts respectively. Both of these channels use Stillwell Audio’s fast–acting The Rocket compressor plug–in to duck attack transients, but the two are then EQ’ed differently: the guitar has a high–pass filter rolling off the low end below 300Hz, and a further shelving cut focusing the remaining energy into the sub–3kHz band; whereas the piano is high–pass filtered below about 200Hz to emphasise the sustain of upper–spectrum frequencies. Compare this example to the Sustain01\_AllOut file to more clearly hear how this affected the mix as a whole.

**Sustain03\_ParaCompDelays**

For this audio example, I’ve added in tempo–sync’ed feedback delay effects on the lead vocal, backing vocals, and acoustic guitar. To prevent the echoes drawing too much attention to themselves I’ve reduced the HF levels of all three effects, as well as de–essing the send to the vocal delay and transient–processing the send to the guitar delay to duck the instrument’s picking noises. Line this file up against the Sustain02\_ParaComp file to hear a before/after comparison.

**Sustain04\_ParaCompDelaysReverbs**

Now I’ve added in my sustain–enhancing reverb, although in this case it’s a combination of two patches: a long plate emulation on the lead vocal, and a slightly shorter hall reverb primarily for the vocals, piano and guitar.

**TrackingRoughs\_Overview**

This audio file contains a selection of the rough balances I put together during the Spektakulatius tracking sessions. Not only does this indicate the wide variety of instrument line–ups and musical styles the band covered, but also demonstrates how much of the sound was already in place before any real mixing occurred — these balances were put together with negligible processing within the Roland VS2480 multitracker we used for recording purposes. Compare this file with the FinalMixes\_Overview audio example, where you can hear my final mixes of all these song sections.

**FinalMixes\_Overview**

Here’s a some snippets of my final mixes from the Spektakulatius session, all mixed within the Cockos Reaper DAW. On average, each of the 28 songs we did on this session took about three to five hours to record and edit, and a further three to five hours to mix.

**Mixing A Whole Album**

When you’re mixing a whole album, it’s human nature to look for some ‘economies of scale’ by copying settings from one song to the next. This tends to work best with plug-ins aimed squarely at technical troubleshooting tasks such as reducing pick–noise, hiss, sibilance, or undesirable spill. It can also make a lot of sense to duplicate generic reverbs/delays (like the vocal–blending, room–enlargement and sustain–enhancement reverbs mentioned above) and master–bus processing across all the songs on an album, as this can help give the different songs something of a ‘family sound’.

But the copying approach can also be taken too far, in my opinion. Things like channel polarity, compression and EQ settings tend to be very arrangement–dependent, for instance, so I definitely wouldn’t copy, say, my kick–drum chain from one song to another without carefully reevaluating the appropriateness of every plug–in within its new context. Another big reason why I don’t like copying too many settings between songs is that rebuilding my processing from scratch encourages me to experiment with new approaches to similar problems, and frequently yields better solutions — and even if it doesn’t the exercise will still improve your mixing chops for your future work.

Finally, it’s important to realise that mixing an album is usually something of an iterative process, if only because some late–in–the–day mix decisions are better made by comparing all the different mixes. This is why I always set up a separate DAW project containing all my mix–in–progress bounce–downs, so I can switch between them to check for balance and overall–tonality inconsistencies that would be extremely tough to spot in any other way. In this specific project, lead–vocal and solo levels were tweaked a fair bit at the final moment, as were the relative levels of the kick drum and bass. Some might say that this kind of work is best left to the mastering engineer but I disagree, for two reasons. Firstly, you’ve got more scope to fix problems at the mixing stage than at the mastering stage. And, secondly, I think the aim (however unattainable) of any mix engineer should be to create sonics that require as little mastering work as possible. Besides, the less remedial work you leave for mastering, the more time the engineer can spend concentrating on niceties.

**Editing Recordings With Spill**

I think a lot of people worry too much about recorded spill limiting their post–tracking editing capabilities. In reality, there’s still plenty you can do at the editing stage to improve the end result. The most obvious thing, of course, is to do several takes and then stitch the best ones together, as we did for several of the Spektakulatius songs. But that same kind of editing approach also gives you masses of scope to repair smaller performance blunders. There was one occasion here, for instance, where the bass–player played the wrong part for three beats of the master full–band take! It was no problem to patch that up by extracting those beats from an alternate take. Similarly, I could usually replace the odd mis–hit snare drum or sloppily timed ensemble stab with a snippet copied from a similar musical section elsewhere in the same take.

The main thing you have to bear in mind is that it’s always best to edit across the whole multitrack, rather than on individual tracks: that way, the phase–relationships between direct sound and spill remain consistent. And, of course, that does mean you have to keep your ears open while tracking to be sure that you have enough material to edit from — if some important fill is fluffed on all your takes, then you won’t have anything suitable to patch it with.