**Session Notes: Selwyn Jazz Part 2 | Media**

Mixing A Jazz Big Band Recording

* [Recording](https://www.soundonsound.com/techniques/recording)

By Mike Senior

The audio files available on this page accompany the [Session Notes column for SOS January 2013](https://www.soundonsound.com/sos/jan13/articles/sessionnotes-0113.htm%22%20%5Ct%20%22_blank), featuring the song 'Much Too Much' by Bill Ashton, performed by the Selwyn Jazz big band and vocalist Emily Sherwin. The filenames should be fairly self-explanatory, but the descriptions below should help you understand a little more about what you're hearing. In addition to these demonstrations, you can also download both the raw multitrack files and my full Cockos Reaper mix project from the 'Mixing Secrets' Free Multitrack Download Library at [http://www.cambridge-mt.com/ms-mtk.htm#SelwynJazz](http://www.cambridge-mt.com/ms-mtk.htm%22%20%5Cl%20%22SelwynJazz%22%20%5Ct%20%22_blank).

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**Room\_EQOut**

This audio example features the raw stereo room-mic recording (captured using Sennheiser MKH40 cardioids) without any EQ, and there are two main things to notice: firstly, the levels of kick and bass spill are quite high because of the sheer volume of these instruments in the room, as well as the lack of any baffling screens; and, secondly, the saxophones sound a bit nearer to the listener than the trumpets and trombones, presumably on account of the frontal mic placement.

**Room\_EQIn**

A high-pass filter at 120Hz reduces the kick-drum and bass spill on the room mics considerably, as you can hear if you compare this audio example with the Room\_EQOut demonstration file. However, the balance/distance issue between the different instrument sections remains, something which directly influenced the way I balanced the close mics and their effects.

**Trombones\_EQOut**

In order to give more flexibility control at mixdown, Hugh had deliberately miked the trombones very close, using a Neumann TLM103 large-diaphragm cardioid condenser mic. While this was a godsend when it came to adjusting the ensemble balance, the downside of this kind of mic position is that it almost inevitably tends to overemphasise the instrument's high frequencies, as you can hear in this audio example, which features the raw trombone close-mic recording without any equalization.

**Trombones\_EQIn**

Returning the trombone close mic to a more natural timbre involved nothing more than a dose of EQ from the Cockos ReaEQ plug-in: 1.5dB boost with a 375Hz peaking filter, and 7.5dB cut at 2.8kHz with a high shelf. A high-pass filter was also inserted at 100Hz to keep any low-frequency kick-drum or bass spill at bay, especially in the light of the low-midrange boost. Compare this with the Trombones\_EQOut file to hear the tonal change.

**Guitar\_EQOut**

This audio file contains a section of the raw guitar amp recording. Again, the mic (a Neumann KM185 small-diaphragm hypercardioid condenser) was placed very close to the cab to keep spill to a minimum, and although this captured a decent midrange tone, the microphone's proximity effect had unavoidably overblown the low end.

**Guitar\_EQIn**

Taming the proximity-effect bass boost heard in the Guitar\_EQOut file involved a 325Hz high-pass filter as well as a further 3.3dB of low shelving cut at 415Hz, both bands provided courtesy of the Cockos ReaEQ plug-in.

**Bass\_LFMaxPunchOut**

Here's the bass recording after I'd already pulled out a mild honk at 535Hz with a 3dB notch cut from Cockos ReaEQ and also tamed some performance inconsistencies with 2-4dB of gain reduction from Variety Of Sound's freeware ThrillseekerLA. However, despite the excellent low-end reach of the CAD E100 large-diaphragm cardioid condenser mic used, there isn't very much low end, simply because of the nature of the specific amp used.

**Bass\_LFMaxPunchIn**

An instance of Voxengo's specialist bass processor LF Max Punch saved the day on this occasion, allowing me to make the most of what low end was actually present in the bass recording. The settings involved a 93Hz crossover, and then a combination of heavy compression and moderate saturation in the low-frequency band. To hear the difference

**OHDry\_Background**

This is a section of my final mix, but with all the global reverb effects muted so that you can hear the way drums sit fairly convincingly back with the rest of the ensemble in the basic balance. The processing of the overhead mics in particular helped contribute to this, specifically the following steps: a 5dB high-shelving cut from Cockos ReaEQ; a -24dB Attack setting above 1kHz using Melda's MMultiBandTransient plug-in; and a further layer of transient reduction from the Cockos ReaJS plug-in's Transient Controller module.

**OHDry\_Foreground**

To demonstrate what the drums would have sounded like without the distance-related processing you heard in the OHDry\_Background audio example, I've deliberately bypassed all the three plug-ins mentioned (ReaEQ, MMultibandTransient, and ReaJS) for this demonstration file. The effect is quite subtle, but the drum kit clearly gives the impression of being in front of the brass in the depth perspective — especially if you focus your attention on the cymbals.

**Snare\_CompOut**

Here's the snare recording, EQ'ed with just a single super-narrow 5dB notch cut at 535Hz to stifle an over-zealous pitched resonance. Beyond some phase-adjustment I applied using 2.46ms of delay from Variety Of Sound's PreFix plug-in, the only other processing this track needed was some dynamics adjustments to increase the consistency in the performance slightly — notice, for instance, how the hit at 0:06 here leaps out a bit.

**Snare\_CompIn**

Compression from Cockos ReaEQ helped reduce a little of the performance inconsistency from the close-miked snare recording. A few decibels of gain-reduction with a high threshold setting and a ratio of 4.7:1 did the trick, and I also dialled in 4ms of lookahead so that the fast attack time wouldn't tamper with the rise profile of each hit's onset transient. Compare this demonstration with the Snare\_CompOut audio file to hear how this setting managed to give the performance a little more evenness without substantially altering the subjective character of the individual drum hits.

**Reverbs1\_AllIn**

The following set of audio examples showcases both the soloed sound and in-context contribution of each of the three main reverb send effects I used for this mix. All of the files feature the same section of the arrangement and, for comparison purposes, here's that section of the final mix complete with all of the effects.

**Reverbs2\_BlendSolo**

The reverb I used to blend the ensemble and adjust each instrument's front-back depth perspective was provided by Universal Audio's DreamVerb plug-in, running on the UAD2 DSP platform. This patch featured mostly a 50ms-lond burst of early reflections, preceded by 20ms of predelay in order to keep comb-filtering side-effects at bay. Some reverb tail was also in evidence, but it was very low in level, very slow in terms of attack envelope, and shortened to a 350ms decay time. I rolled of the low end of this effect return progressively below about 500Hz using Cockos ReaEQ, partly to avoid cluttering the low of the mix in general, but also because the omnipresent spill from the bass and kick-drum low frequencies meant that they needed no additional blending.

**Reverbs3\_BlendOut**

This example shows what a section of the final mix would have sounded like had the Universal Audio DreamVerb mix-blending patch heard in the Reverbs2\_BlendSolo file not been used. Compare this with the Reverbs1\_AllIn audio file to hear the difference. Although you still get a sense that there's a 'room' around the instruments, the ensemble doesn't gel properly together, so it feels rather disjointed.

**Reverbs4\_SizeSolo**

This reverb from Lexicon's Pantheon II plug-in was designed to simulate the sound of a larger and more flattering acoustic space around the ensemble than the one in which the session was recorded. The specific setting I used was the plug-in's Large Hall preset, a 24m-wide simulated chamber with a decay time of 1.57 seconds and a 32ms predelay value. Although brighter than I'd use for this kind of application in many modern commercial styles, the additional high-frequency 'splash' happened to suit this particular recording from a subjective perspective.

**Reverbs5\_SizeOut**

Although bypassing the Lexicon Pantheon II effect you heard in the Reverbs4\_SizeSolo example doesn't significantly compromise the sense of an ensemble playing together, it does cause the apparent dimensions of the performance space to contract, something that I hear especially in the 'height' dimension implied by the effect's high frequencies. Line this demonstration up alongside the Reverbs1\_AllIn file in your DAW and switch back and forth between them to appreciate this change fully.

**Reverbs6\_SustainSolo**

My final global send effect was provided by the Lexicon 224 emulation available on the Universal Audio UAD2 processing platform. By virtue of its less convincing simulation of a natural acoustic space it didn't significantly undermine the spatial effects of the Lexicon Pantheon II reverb effect showcased in the Reverbs4\_SizeSolo file, but instead served to thicken the ensemble's midrange sustain — a purpose I deliberately assisted by focusing the return channel more into the midrange using a chained instance of Cockos ReaEQ.

**Reverbs7\_SustainOut**

To highlight the mix impact of the emulated Lexicon 224 reverb you heard in the Reverbs6\_SustainSolo file, this current example shows what the mix would have sounded like without it. If you compare this with the Reverbs1\_AllIn file you'll hear how the instrument sustains are lengthened and warmed, especially those of the rhythm-section instruments. A side-effect of this effect is also that the emsemble as a whole is pulled slightly further into the virtual room simulated by the Lexicon Pantheon II reverb, which seemed to me no bad thing in practice.

**Vox1\_FinalMix**

The lead vocal on this multitrack was the only track that was overdubbed, and the absence of any spill from this part on the rest of the tracks made it trickier to blend with the ensemble. For my final mix, a section of which I've selected for this example file, I used a variety of additional mix tweaks to push the vocal closer to the horns in the mix's front-back dimension. Compare this file with the following examples to appreciate the degree to which each of these adjustments contributed to the final result.

**Vox2\_SendsOut**

Two additional send effects were applied to the lead vocal part alone, both of which have been bypassed for this example compared with the Vox1\_FinalMix file: the first was an 83ms slapback delay with zero feedback, from The Interruptor's freeware Tape Delay plug-in, chained with a 5dB low shelving cut at 465Hz from Cockos ReaEQ; and the second was an early-reflections only patch from the Ambience algorithm of Lexicon's Pantheon II reverb, set for an 8m room size with no predelay and then high-pass filtered at 24dB/octave with dual high-pass filters at around 340Hz in Cockos ReaEQ.

**Vox3\_SendsFerricOut**

A tape-emulation effect from Variety Of Sound, their freeware Ferric plug-in, helped to smooth off some of the vocal's high-end transient information, which I felt was partly responsible for bringing it too close to the listener. Its effect was quite subtle, as you can hear if you directly compare this file (where it's bypassed) with the previous Vox2\_SendsOut file, but there's a definite increase in edginess to the vocal when it's not in circuit. For this application I didn't use any of the plug-in's saturation options, but relied entirely on the dynamics facilities, using the fastest Recovery Time available.

**Vox4\_SendsFerricEQOut**

The brightness of the vocal mic's on-axis response (a large-diaphragm Beyerdynamic MC740 was used, which has a broad HF lift in the 6-12kHz zone) was also partly responsible for bringing the vocal too far out front, to my ears. A simple 6.6kHz high shelving cut of 3.5dB from Cockos ReaEQ helped to compensate for this, and I've bypassed this EQ band for this audio example so that you can hear the difference it made — compare it with the Vox3\_SendsFerricOut file.

**FinalMix**

This is my final mix of 'Much Too Much' carried out in Cockos Reaper using its bundled processing in conjunction with a handful of freeware and payware third-party plug-ins.