



The songs for this session had been well rehearsed, as they'd formed part of a community play about the Luddite protests of the early 19th century.

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In this month's Session Notes, I'll describe how I recorded some English industrial folk-music performances. The songs were drawn from a show celebrating the 200th anniversary of the Luddite protests, and were sung by a community choir called the Rise Singers, accompanied by the Army Of Redressers, a folk trio of accordion, fiddle and guitar. You can learn more about the project in the 'Recorded This Month' box, and find audio examples at <http://sosm.ag/feb15media>.

Live & Dangerous

Mindful of the fact that the arts company responsible for the show had asked for a 'simple recording' of the songs, and of the time constraints — coordinating the diaries of 30 people is no easy thing, so we had a single day in which to record all nine songs — I soon wrote off the idea of attempting a full multitrack recording. As a production-music composer, I'm used to the calm and controlled environment of the studio, in which musicians come and go one at a time, and where different takes can be carefully edited together to create the tracks. This, then, would

Rise Singers & Army Of Redressers: Our engineer goes on location to record a full choir and band all in one room...

be new territory for me, and the idea of miking up a choir alongside a selection of unfamiliar acoustic instruments and recording them all together in one take initially filled me with terror! But I've always enjoyed a challenge, and the terror soon gave way to curiosity. I was keen to have a go at recording the old-fashioned way, where everyone plays together, and where the aim of the recording is to capture what you can hear in the room. I was confident that if I did enough preparation, stuck to first principles and didn't over-complicate things, I'd be able to get something pretty decent in the can. Hopefully my experience will

help some of you who plan to embark on similar adventures!

Selecting A Venue

Given the nature of the ensemble, my first tasks were to find a good room with a suitable acoustic, and to create a timetable everyone could work to. The band members were all seasoned gigging musicians, but the choir consisted of amateur enthusiasts who weren't used to recording. They would probably not want to be doing take after take (or be able to give their best if they were asked to), and it would be important to make sure the order of the songs was right for their

voices, and that I keep time-consuming equipment problems to a minimum. In short, I needed to ensure that they could get in, warm up, sing and get out as quickly as possible!

There weren't too many venues of sufficient size locally, but by a stroke of luck, the Recital Hall at the University of Nottingham was available on the day of recording. It pays to check out your chosen venue in advance: on a quick visit to assess the hall's suitability, the natural reverb seemed just a little 'dark' to my ears, but the adjacent orchestral rehearsal space was light and airy, and I felt its tight, crisp acoustic should make it suitable. With the space booked, I drew up a schedule which, given the number of performers, might be described as tight, ambitious or optimistic, but I did at least allow enough time for all the technical faff before the players arrived.

Mics & Miking: Back To Basics

My plan was to organise the performers in such a way as to achieve a good natural balance of the instruments and voices in the room, and to consider possible approaches for miking the ensemble. With no budget for microphone rental, my choices were limited to my own collection, and after a trawl through back issues of SOS for advice on recording choirs (and confirmation from the bank account that I couldn't afford that SoundField mic I really wanted!), I decided that my best bet would be to set up my two AKG C451b small-diaphragm condenser mics as a spaced pair to capture the main room sound, and then use spot mics for reinforcement where required.

I use the C451b pair in my project studio as overheads for recording drums, as they seem to capture the transients



For the choir — and the main room sound — a spaced pair of AKG C451b small-diaphragm condensers was used.

well and have quite a transparent sound character. Both features, I felt, would make them well suited to recording a choir in which the (many) words needed to be clearly heard. Their fixed cardioid capsule should also help to achieve the right balance of direct and room sound.

The plan I formed was to position the instruments in the room so that a decent picture was picked up by the stereo pair, but to reinforce this with a spot mic on each instrument, as I felt this would give me a little more flexibility when it came to mixing. The room had been purpose-built for orchestras and it seemed natural for the choir to arrange itself where the orchestra would normally be, and to place the stereo pair approximately in the position the conductor would occupy (it would be a very tall conductor whose head was as high as the mics, though, as they were positioned above the choir's heads). The instrumentalists were placed

behind the mics and played to the choir, as I felt the instruments needed to have a supportive, accompanying role in the mix.

I chose to use my three large-diaphragm condenser mics (an unmatched pair of AKG C414 B-ULS mics and a Neumann TLM103) to act as spot mics, as I thought that these would provide the least coloured, most flattering recordings of the acoustic instruments.

For the accordion, I placed one C414, set to cardioid, about a metre from the button end of the accordion; I knew from experience that this mic would be capable of capturing an honest representation of the bass frequencies and, there being no other bass instrument in the ensemble, I was particularly keen to capture this on a close mic. (Even with this in place, the bass issue would become very apparent at the mix stage.)

For the acoustic guitar I used the Neumann TLM103, as it has given excellent results on guitars in my studio. Despite its cardioid pattern, I knew it would capture some spill from the accordion that it was next to, but I was happy that this wouldn't cause too many problems.

Finally, I planned to deploy my other C414 B-ULS for the fiddle, as I felt it should give the strings a flattering, warm sound. However, I was delighted to find out that the player, Beth, had a high-quality transducer mic fitted to her instrument, from which I could take a DI feed. I'd usually prefer to mic an instrument such as this, but Beth liked to move around a bit as she played, and I felt that the DI would combine with the instrument's presence in the spaced stereo pair to give me what I needed

Recorded This Month

Most of us will be familiar with the term 'Luddite' as shorthand for someone who is anti-technology, but fewer will be aware of its origins and musical associations. The Luddite movement of early 19th-century Britain began when a group of artisan cloth workers from Nottinghamshire smashed the new textile machines which they felt were destroying their trades, undercutting wages and forcing them into unemployment and destitution. The Luddites declared themselves followers of Ned Ludd who was, like Robin Hood, rumoured to live in Sherwood Forest, and their protests spread to other newly industrialised areas including West Yorkshire and Lancashire.

Why the lesson in English history? Well, along with the protests of the industrial revolution went folk protest music and, to mark the recent 200th anniversary of the protests, participatory arts company Excavate (<http://excavate.org.uk/index.php/projects/the-hammer-of-defiance-2>) were commissioned to make a community play about the Luddites. The play, whose actors included descendants of some of the protesters, was staged in one of the Nottinghamshire towns where the protests first took place, and was peppered with English folk protest songs from the period — and shortly after the play's run had come to an end, I was invited to record the show's songs for posterity.

There was no control room as such, so the monitoring was done via headphones, with the recording setup placed well away from the choir and musicians.

» with minimum fuss. I ended up using the spare C414, also in cardioid mode, to capture an extra vocal part that was performed live by the guitarist.

The Recording Rig

Phantom power and preamp duties were taken care of by an Allen & Heath Mix Wizard mixer, and the multitrack signals were routed directly out of that into a Firewire audio interface, and thence to Logic Pro 9 on my MacBook Pro. The biggest drawback of the location was that there was nowhere to call a control room — I had to work in the same room as the performers. I therefore chose to monitor the mic signals using headphones. They were a closed-back model (Beyerdynamic DT770), which meant that I did at least have some degree of separation from the live sound, but if I'm honest it wasn't ideal. There was no monitoring for the



balance of voices and instruments in the room, and set up the mics. Once that was done, due to my nervousness about the amount we had to get through in

“I asked everyone to remove their shoes, knowing from bitter experience how easily a great live take can be compromised by the squeak of soles on a wooden floor.”

performers to hear their takes — they'd just have to trust my judgement — but given that they'd recently performed the play several times they were reasonably well rehearsed.

Given the time constraints, I decided to impose a working rule of a three-take-per-song maximum, so the pressure was on! I was to discover later that this approach would have consequences when it came to mixdown...

Stand & Deliver

The schedule kicked off at 9.30am, and I'd allowed the longest chunk of time (an hour and a half) to position the choir and the band so as to achieve a good

the day (and much to the amusement of the performers!) I used tape to mark out box-shaped areas from which the choir and the individual band members were forbidden to wander. I also asked everyone to remove their shoes, knowing from bitter experience how easily a great live take can be compromised by the squeak of soles on a wooden floor.

The choir and band kicked off with a song they knew well and could perform easily, before moving on to the trickier stuff. Four songs in, we took a lunch break, and by mid-afternoon we'd finished the songs that needed both the full choir and the band. We then recorded the songs that needed fewer

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The band were treated to their own spot mics. As with the choir, the musicians were asked to remain within a zone that had been marked out with white tape.



» performers, and finished the session with a small number of overdubs.

To make sure the overdubs would blend properly with the main performance, I decided to capture the same room acoustic with which we'd recorded the main tracks. So, rather than simply close-mic the overdubs, I left all the mics in the room 'open' when recording. By 5pm, somewhat sweaty and frazzled, we were done.

A Bottomless Pit

Back in the safe, warm embrace of my studio, I nervously opened the

files, hoping that my guesswork and assumptions had worked out and that I hadn't merrily recorded several hours of out-of-phase buzzing! Much to my relief, everything was intact, and only one mic source benefitted from 'flipping' the polarity. I'd recorded three versions of each track, and chose the best

performance of each as a starting point. Using Logic Pro's phase-locked editing, I comped a 'perfect' take.

Of the eight songs we managed to record in six hours, most involved the full choir and band (one of which contained the aforementioned overdubs), one involved the band with two singers duetting and one involved just four singers singing in close harmony. To illustrate the kind of problems one might run into when mixing this kind of project, I'll focus on two extremes: a song called 'Welcome Ned Ludd', which had everything bar the kitchen sink thrown in, and 'Song Of The Luddites', which featured just four voices.

Despite my initial relief, a couple of problems soon became apparent when listening to the first of these two tracks. First, there was an awful lot more room sound in the recordings than I'd noticed at the time on my headphones, and this gave the sound a slightly washed-out quality. Second, despite frantically hunting through the tracks, there seemed to be almost no bottom end to any of the sounds in the arrangements. I could attribute both to a combination of my compromised monitoring options on the day and the fact that I'd probably



A little touch of corrective work was required in post production, with level automation being the main tool used.

A lack of low end was compensated for by using a programmed acoustic bass part. The band liked it so much they decided they'd recruit a bassist!

acclimatised to the sound of the room. Whatever the cause, it was clear that I needed to do something about it!

After checking with the musical directors that they had no objection, I used Spectrasonics Trilian's wonderful

acoustic upright bass patch to play in some very simple MIDI parts to fill in the offending space, mixing the result low and unobtrusively in the mix. With these parts now taking care of the bottom end, I high-pass-filtered both the accordion and the guitar spot mics, so that there was no confusion as to which instrument was looking after the bottom end. I also applied a small dip to the guitar at 326Hz to tackle a little boominess in the close-mic recording.

To tackle the predominance of the room sound, I used Waves' C1 as an upwards expander, starting with a preset and tweaking the threshold. I applied it to both the overhead mic tracks, so as to bring the sound of the choir forwards in the mix. I combined this with a limiter, whose role was to catch the peaks of any particularly enthusiastic singing — some of which was inevitable given the monitoring arrangements and the pace of the session. In particular, I'd failed to notice that one of the male singers who had a tendency to sing louder than his female counterparts was standing nearest to one of the overheads. I applied the same expansion process to the accordion close-mic part, as this had its own battle going on with the spill from the acoustic guitar.

My final trick to coaxing a good sound for the whole ensemble from these recordings was to use automated volume and muting on the various tracks, just to help the arrangement come into focus as the songs progressed. The overheads, which I'd sent to their own stereo bus for easy handling, were dipped down at the start of the song, whilst the guitar and fiddle played the opening melody, so that the room sound didn't push the



instruments too far back, but they were brought up where the choir begins to sing. This had the pleasing effect of adding a big 'whoomph' to proceedings!

The accordion part was muted when not playing, so that the guitar spill from that channel didn't affect the clarity of the rhythm-guitar part, but it was brought back into the mix where its contribution begins. Some brief mutes later in the mix resolved the problem presented by the guitarist and accordion failing to agree on a common chord.

Volume automation was also used for the overdubs. The derabuka (a Turkish hand drum) and reco reco (a Brazilian kind of guiro, where you scrape long springs with a piece of metal) were tucked behind the vocals to begin with, but given a little lift for the final chorus. The only instrument that felt to me anything like my usual fare was the fiddle, and for this the DI track needed some gentle compression to control the volume, and a sympathetic convolution reverb treatment to help it sound more natural and blend into the mix.

A Simpler Song

After the challenge of mixing the full choir and band, the act of balancing the four solo voices in 'Song Of The Luddites' was a simpler affair.

At the recording session, I'd disabled all the spot mics for this number, and brought the overheads down and in towards the singers for greater intimacy, but still hoping to capture a little of the room sound. The performance was slightly compromised by the fact that it was the last song of the day, and thus recorded in rather a hurry; and because the singers

weren't quite so familiar with it, it was tracked verse by verse, with no time to check the mics.

Back in the studio there was a perceptible and annoying resonance to the recording that I regretted not identifying and correcting while tracking. In the studio, I swept a parametric EQ to identify the resonance, then used Logic's Linear Phase EQ to apply a sharp cut of 5.6dB at 220Hz, combined with a gentle boost at 10kHz with the UAD (now 'Legacy') Pultec EQ to add a bit of air. This kind of detailed EQ'ing can be difficult, as your ears adjust quickly to what you're hearing, so you can soon lose the necessary perspective to make corrections. But in this case it did the trick.

Final Thoughts

The process of planning and executing this recording proved tremendously informative for me, personally. I learned a lot and it provided a great boost to my confidence. My guess is that many SOS readers will find themselves in this position one day: with plenty of recording experience in the studio, but being confronted with the realities of location recording. So it's worth me saying a bit about what I gained from this session, and what I'd do differently next time.

One thing that stuck out was that my effort to identify the right recording space paid off. It enabled me to set the musicians and choir up for a desirable balance, and stamped a character onto the sound that I could not have matched with close-miking and artificial reverb.

I was also very pleased with the results that fairly modest equipment can achieve, even when the aim is for quick results, with little time to experiment with different mic placement. To my ears the final mixes have a clarity and warmth to them that sounds 'proper pro', as they'd say in my neck of the woods!

My one regret is not thinking through the monitoring environment more carefully, and that's something I'll definitely look to tackle next time. Had I been able to create more separation for myself from the performers, some of the mix issues I've described could have been tackled at source, and I'd have saved myself a lot of time and aggravation — although, having said that, the band liked the Trilian upright bass MIDI lines so much that they're now thinking of adding a bass player to the ensemble! ■■■

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