

High-fidelity

audiophile recording

David Johansen & The Harry Smiths

What does an Australian recording engineer, a small blues ensemble, and the front-man for a '70s glam/punk band have in common? And who the hell is Harry Smith? Greg Simmons finds out...



Born to be... an engineer: Barry Wolifson created an audiophile recording with attitude.

Every self-respecting sound engineer should own a couple of high fidelity audiophile recordings. Apart from their intrinsic musical value, they serve as good reality checks and provide welcome relief from the heavily processed sounds of popular music. They're also ideal for evaluating audio equipment. But what makes a recording worthy of the title 'audiophile'?

Audiophile recordings are made to appeal to hi-fi enthusiasts and lovers of the natural sound of acoustic instruments. They are typically recorded direct-to-stereo in churches and similar acoustic spaces, and use a very simple but high quality signal path. The purest of all audiophile recordings are made with a single stereo microphone and recorded in one take with no EQ, compression, reverberation or additional processing. Beyond this ultra-purist 'warts and all' approach, it is not uncommon for an audiophile recording to be edited together from multiple takes, allowing a perfect performance to be created. It is also not unusual to see one or two spot microphones reinforcing the sound of weaker instruments, or giving them more focus in the recording. A touch of reverb may be added if the

recording is too dry, but compression and EQ are usually avoided whenever possible.

In comparison to the heavily processed and exciting sounds of popular music, audiophile recordings tend to sound bland, uninteresting, and sometimes even sterile. Not surprisingly, many listeners find audiophile recordings to be quite boring. But every now and then an audiophile recording comes along that really grabs your attention. 'David Johansen & The Harry Smiths' [Chesky Records #JD196] is such a recording. Johansen's richly textured voice is well matched by the musical dexterity of The Harry Smiths, resulting in a collection of early American songs that is full of character and life, and seriously enjoyable. No wonder Rolling Stone magazine gave it a four star rating!

It's also exceptionally well recorded, courtesy of Barry Wolifson – an Australian engineer who lives and works in New York. He's managed to graft an element of rock'n'roll nerve into the sound, creating an audiophile recording with attitude. I caught up with Barry during a recent visit to Australia, and asked how he did it...

Greg Simmons: *Let's start by talking about the recording set-up...*

Barry Wolifson: For a typical Chesky recording session, we arrive in the morning, load in and start wiring everything up. We're doing high resolution [24-bit, 96k] and low resolution [16-bit, 48k] recordings, and we're doing surround mixes and

all sorts of stuff, so it gets quite complex and takes a while. We get in there at around 9:00am, and by 3:00pm we're ready to listen to some stuff – assuming there are no mixers exploding or anything else going wrong.

GS: *You're not ready to listen to stuff until 3:00pm? That doesn't leave much time to get anything recorded...*

BW: Well, the first day is normally just a sound check. The intention is to come in and set up, record a bunch of stuff with the musicians, and get what we think is good. Then we go back to Chesky Records and take a good listen, to make sure we haven't fooled ourselves. We make sure that the bass is sitting right, the vocals are in the right space, and so on. If there are any problems, we fix them the next day. So we're not worried if we don't get anything recorded on the first day. It's really just a sound check for us, and it gives the musicians a chance to settle in. But we record everything, of course...

GS: *Do you set up a temporary control room, or do you set up alongside the musicians?*

BW: We set up a control room. It's off to the side of the church, about 20m away – I know that because our minimum cable length is 20m. It's a miserable cubic box, about the size of a glorified toilet...

GS: *It's that small?*

BW: Well, it's bigger than the toilet in your house. Maybe a urinal in a pub or something... It's acoustically impossible, lots of parallel reflective surfaces, but we set up in there anyway. [laughs]

GS: *What do you use for monitoring?*

BW: We take monitors, although I try and do stuff on headphones as much as I can.

GS: *Headphones are one of my pet subjects at the moment. Which ones do you use?*

BW: I've got a pair of Revox 3100 headphones, they're fantastic...

GS: *3100s? I haven't seen those for years. I recently did a comparison of many different headphones for my own use. Revox don't make the 3100s any more, I'm sure of it...*

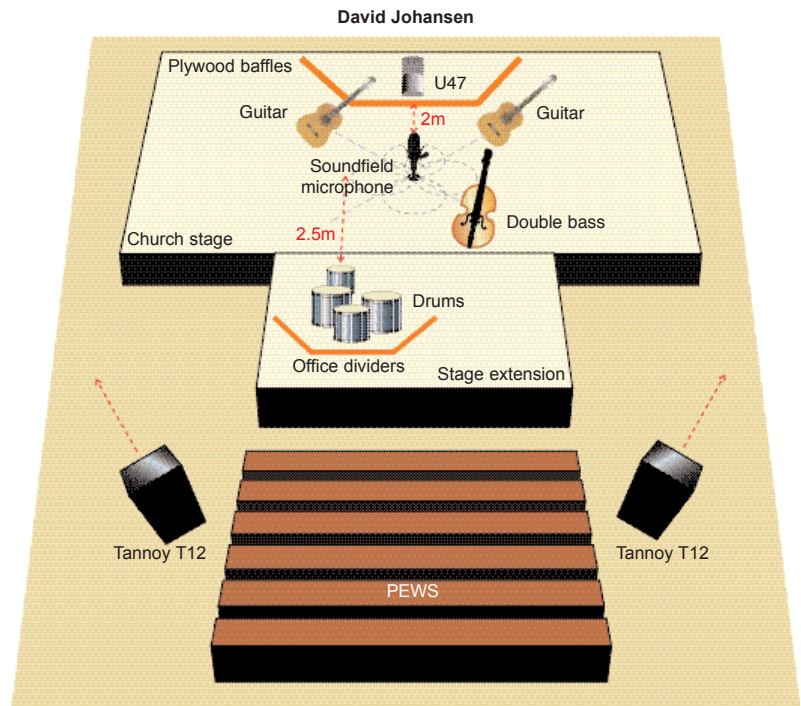
BW: They haven't been made for 10 years or so. They were actually made for Studer/Revox by Beyer, but they're not like any of the Beyers. Mine are 15 years old and I'm going to be very sad when they finally die, because they're just the best.

GS: *You obviously take your headphone monitoring seriously. What do you drive the 3100s with?*

BW: I have a custom headphone amp designed by Phil Sztenderowicz, makes a big difference. It uses Mosfet circuitry in a shunt-regulated push-pull design and has plenty of grunt to drive the 600 ohm load of the 3100s.

GS: *And what about monitor speakers?*

BW: We use little PMC LB1 monitors. They're a transmission line design, and they're not bad at all. They don't excite the room too much, which is good. You can't really have full range stuff going on in that room, it's



Floor plan for David Johansen & The Harry Smiths.

impossible. So I rely on the headphones a lot, but because they're an open-ear design I can't use them while the speakers are running. So I try to have the speakers turned off whenever I can, and take a good listen through the headphones.

GS: *When David Johansen & The Harry Smiths walked into the church for the session, what did they see?*

BW: There's a large 'stage' at one end – I don't know the proper church name for it, but it's about one metre high. We built a temporary stage extension to accommodate the drum kit.

I put my primary recording microphone, a Soundfield MkV, in the middle of the stage, and we set up the musicians around it. The room sounds great, but the stage has a porcelain tiled floor and I don't like the early reflection bounce it produces – especially when my primary recording microphone is sitting on it! So I put a large carpet, about 4m x 4m, on the stage to prevent comb filtering and related problems.

GS: *Floor reflections? The mic mustn't be very high up...*

BW: No, it's not high up at all. Somewhere between standing up and sitting down height. And you have to remember that it's a Soundfield microphone, so two of its capsules are pointing at the floor. Reflections from the floor are much more significant with a Soundfield than they are with conventional microphones.

GS: *The Soundfield is a very interesting microphone design, can you tell our readers a bit more about it?*

BW: It's hard to give a brief explanation. Perhaps it would be best to describe it in a separate item accompanying this interview?

GS: *Good idea. Readers wishing to know more can*

refer to the item titled 'The Soundfield Microphone'.
Okay Barry, please continue...

BW: Well, for this recording I used the Soundfield in Blumlein MS mode, as if it were two bidirectional capsules in an MS configuration. The musicians set up their instruments, and then we move them around until we get them all in the right 'space' when perceived through the monitor speakers.

GS: And then?

BW: And then we glue them down! [laughs]

GS: Right! The line-up for this session looks fairly simple – drums, double bass, two guitars and vocals.

Did you use any spot mics?

BW: Certainly not on the electric guitars, but on a couple of tunes I used spot mics on the acoustic guitars. I used old Neumann KM56 tube mics, little baby ones with nickel-plated diaphragms. Sensational things. They ran into an EAR 824M preamp.

GS: How about the double bass and the drums?

BW: No. In fact, I had intended to mic the bass – which I usually do in these recordings – but Kermit Driscoll, the bass player, asked if we could try it without the mic. And, of course, David Chesky and I are always up for experimenting, so we tried it without a spot mic. We just put

David Johansen & The Harry Smiths: Multitracks, Two Tracks & Harry's Tracks

David Johansen has often been described as a 'musical chameleon'.

Some readers may recall his lipstick-smudged days fronting the '70s glam/punk band The New York Dolls. Some may know him as Buster Poindexter, lounge-master extraordinaire and frontman for the Uptown Horns and the Banshees Of Blue. Johansen has spent plenty of time in multitrack studios and has a swag of albums to his credit, but *The Harry Smiths* album was his first experience with direct-to-stereo recording...

Greg Simmons: After doing so many albums in multitrack studios, what was it like to walk into a church and do a direct-to-stereo recording?

David Johansen: Well, it changed me, it spoiled me to no end. I've always been this guy who hates being in the studio. The first record I made, with the New York Dolls, took six days, so that wasn't so bad. But then, as time went on, records took longer and longer for some reason. I don't know why... I think the more technology they got, the longer it took!

Prior to *The Harry Smiths* record, guitarist Brian Koonin and I had worked pretty hard on a Latin record over the course of a year – it was a Buster Poindexter record called *Spanish Rocketship* – and we released it on Island Records. Chris Blackwell [Island Records' founder], said, "Oh, I love this record!" and we thought that was a good thing, because the boss was behind it. But he left the company about two weeks after the album was released, and the company kind of folded. We thought, "Oh man, what a waste!". So when the Chesky guys said "We want to make a record in three days", I was definitely keen. I didn't go in there with a lot of trepidation.

It's a nice way to record, you sit around and you play, and you just focus on the music. It was all done in an old medieval looking church, so it was a pretty cool experience.

GS: You recorded without headphones, did that affect your mic technique?

DJ: Recording without headphones was great, it was just like sitting around playing, you know? I don't think it affected my mic technique at all, I don't remember having any problem with it. And the band really got into it...

GS: They're a great band. How did you choose them?

DJ: When I decided I wanted to play this kind of country blues music, I knew I had to play with good musicians. I wanted guys who had, like, a 'jazz head', because if you get rock and roll guys they make every blues song sound the same. They have this "Oh, I know how to play blues" attitude, and it just sounds really generic, you know? I think that's what turns people off the blues...

Say you make a tape of your favourite old country blues songs. It's not all the same musicians, and when you listen to the tape you see that each song has such a personality and uniqueness about it. But essentially, when you get down to the roots of it, they're all really playing the same song, you know what I'm saying? To make each song different on an album takes some thought, especially if they're all going to be played by the same band.

So I wanted guys who had an intellect and a certain sensitivity towards what makes each song tick, in its own way. I told that to Brian, and he suggested bassist Kermit Driscoll and drummer Joey Barron. They'd recently done a project with jazz guitarist Bill Frisell, where Bill did some explorations into the music of Dock Boggs. Dock was a mountain banjo player from the early part of the 20th century, he's the guy we got that song 'Oh Death' from. Kermit and Joey knew how to do that stuff and bring something to it, so we got them in on the

project. And I've been playing on and off with guitarist Larry Saltzman for 20 years, in various incarnations. So that's pretty much how the band came together.

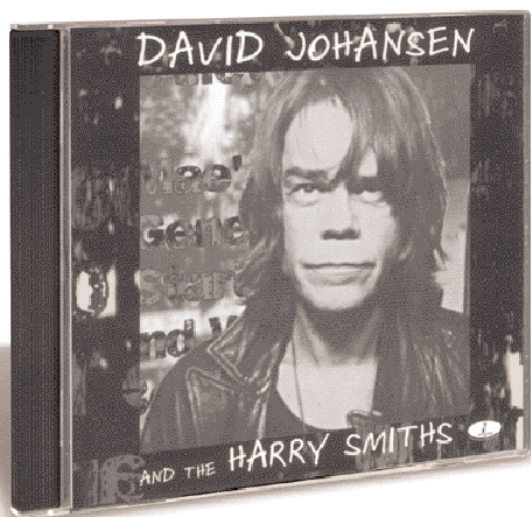
GS: And what about Harry Smith?

DJ: Harry Smith was an interesting guy. He put together the *Anthology Of American Folk Music*, a huge collection of roots music from the early 1900s. Those records – the LPs – have been floating around my whole life. When I was a kid there was a couple in my house, and I'd go visit somebody and they'd have a couple, too. They were recently released on CD, so there's been a new burst of interest in Harry Smith among the people who are into roots music and stuff. So, he's kind of like, back in the consciousness again of... um, what do I say? Of the *Glitterati!* [laughs] *Glittering* literate people!

When I started this act, I was only going to do one show. I was asked to put something together for the 30th anniversary of *The Bottom Line*, a club in New York. I figured I'd do something acoustic and simple – I knew all the songs, and it wouldn't take a lot of preparation. About a week before the show, Allan Pepper [owner of *The Bottom Line*] called me and said "Hey, I'm putting an ad in the paper, what are you gonna call your show?", and I just said "The Harry Smiths". I didn't really think about it, you know? It was meant to be a one-time thing, but it became a hit so we kept doing it. The name wasn't something I gave a lot of thought to, but it works for the music. Even though only a couple of songs on the album are from Harry Smith's collection, it gives people a shorthand description of what the music is about...

You know, there's a guy over here on the news called Harry Smith. People often ask me, "Why did you name your band after that guy?". And I say, "Oh, I dunno..." [laughs]

For more information on Harry Smith and his recordings, go to:
www.harrysmitharchives.com



directly at the mic.

GS: *Was it only the vocal signal that went into the PA?*

BW: On some sessions I'll feed other things into it – anything that is spot-miked often needs to be fed into the PA or it sounds stupid. But for this album it was only his voice. In fact, it wasn't the U47 mic signal that went into the PA for these sessions. I set up another vocal microphone, a Beyér M160 ribbon, specifically to feed the PA because our custom-made George Kaye recording consoles don't have auxiliary sends.

GS: *And you can adjust the level of the PA signal for the desired amount of room sound on his voice...?*

BW: Right, and it gets picked up by the Soundfield mic and blends with the other instruments. It gives a very natural sound, while allowing control over the vocal level and space.

GS: *Very impressive! How many hours were spent doing the recordings?*

BW: About 15 or 16, and that includes doing more stuff – what's on the album is about two thirds of what we actually recorded. It's a very simple process, conceptually, but sometimes simple things can become complex. Sometimes you have to deal with personalities and/or people who can't get into recording in this way.

GS: *That's surprising, because there is something very fundamentally 'musician oriented' about this style of recording. After all, you're recording everyone playing together, live, in the same space...*

BW: Yeah, there's something very 'musician' about it indeed – you're getting back down to what it's all about. And these guys settled into it almost immediately, no problems whatsoever. In fact, they didn't even wear headphones...

GS: *Were all the songs on the CD straight takes, or were some assembled from edits of numerous takes?*

BW: It's all edited from numerous takes...

GS: *So it was like an orchestral recording, with a pass through the whole piece then a few patches to be edited in later?*

BW: We tried to do at least two complete passes, and then the producers and musicians would listen and decide if there's anything that needs fixing. Like, if there were only one or two bars, we'd redo those and patch them in at editing. Otherwise, they might decide they can do a better take overall.

GS: *What happened in mastering and editing?*

BW: They spent a lot of time editing, because they got fairly pedantic about tunings and feels and tempo and stuff. I wasn't there while that was going on, but to the best of my knowledge Nick Prout [Chesky's mastering engineer] didn't do any DSP in mastering – no EQ, no compression, or anything. Just editing. There was some digital compression on the recordings, though... [laughs]

GS: *Huh?*

BW: It exists in the form of digital overs! I mean, during the recordings it was going over all the time, on purpose. It's like a very subtle peak limiter.

GS: *It's not audible...*

BW: Well, I could argue that it is audible, because it sounds good!

GS: *But I don't hear any clipping or crunching...*

BW: No, no, I wouldn't have done that.

GS: *There's a fine line between when it's noticeable and when it isn't...*

BW: Oh, there's a way fine line! And each converter is different. Like, when does the over indicator turn on? How many consecutive samples have to go over 0dB FS before it indicates an over on the metering? One sample? Four samples? Ten samples? On some equipment, like the Genex recorder we use, you can actually choose how many consecutive overs will trigger the over indicator. On other equipment, the manufacturer decides and you're stuck with their decision. But with a bit of experience with a particular piece of gear, you learn how far you can go before it is audible.

GS: *Well, this album has certainly got quite a bit of life to it. I suspect that's because, although it's an audiophile recording, it has a touch of rock'n'roll attitude – the compression on the voice and the subtle digital overs all contribute to that effect...*

BW: Absolutely, that was my intention during the recordings. I wanted to push it a bit.

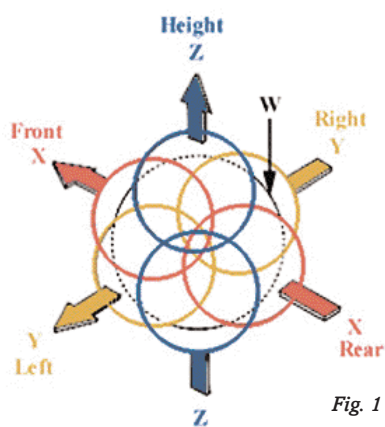
GS: *Were there any problems during the recording?*

BW: Not at all. With this album, it took the band about half an hour to get used to working that way. And then they were able to make it work for them, and play off the dynamics of having everyone playing together. In fact, I remember David Johansen taking a listen to the sound check recording of 'Katie Mae' and asking, "Do we have to do it again tomorrow?". And we all thought, "Forget it!", it was fantastic. About one third of the album is actually from the sound check recordings.

So, if there's any secret to this type of recording, this is it: get really good players, and record everything!

The Soundfield Microphone

The Soundfield microphone contains four microphone capsules precisely aligned in a tetrahedral array. The signals from the four capsules are matrixed into a four channel signal known as 'B format', which is conceptually similar to an MS stereo signal but in three dimensions – left/right, up/down and fore/aft. Imagine three bidirectional microphones positioned in the X, Y and Z planes, with an omni capsule providing a central reference (W), and you've got the basic idea of B format. (See Figure One)

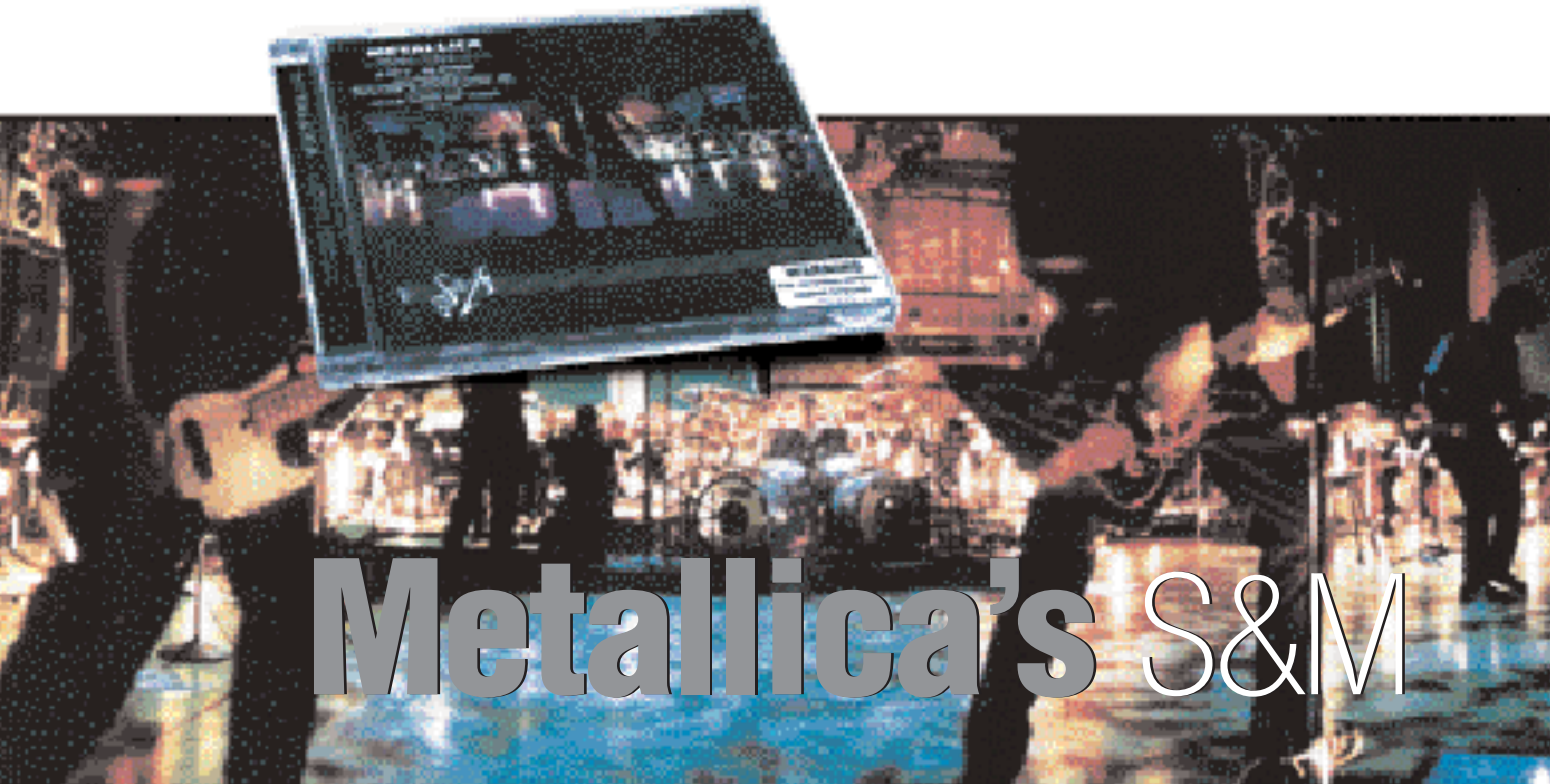


The B format signal can be decoded (either during recording or post-production) to create numerous stereo and multichannel surround sound signals. For the David Johansen recording, Barry decoded the B format signal into a stereo signal equivalent to two bidirectional microphones in

an MS configuration.

For further information on the Soundfield microphone, go to: <http://www.soundfield.com/>

For a good description of B format, it's worth looking at: http://www.soundfield.com/b_forum.htm



Metallica's S&M

One of the world's biggest hard rock leviathans up close and personal with a 100+ piece orchestra? A live album and DVD was always going to be on the cards. Metallica's long-time producer, Bob Rock, once again called on the services of his right hand ProTools man to bring this huge project together. Christopher Holder gains random access to Darren Grahn's thoughts.

Recording a Metallica album of any description was never going to be a walk in park. Their MO has always been one of countless hours of overdubs, comping, and rejigging. Now throw into the equation, a 100+ piece orchestra, a series of concerts and a resulting live album experience, released on DVD, DVD-A, VHS as well as the humble CD – and you could say the band's production and engineering team were always asking for trouble! But the band is nothing if not ambitious, and in producer Bob Rock, they have a studio luminary who shares that ambition.

For the project, two concerts were recorded. But with so many musicians on stage something extraordinary had to be put in place to capture the raw and powerful singularity that is any Metallica gig along with the multifaceted beast that is the San Francisco Symphony Orchestra. Two Sony 3348 24-bit 48-track machines were rolled into service. But, this was Metallica after all, and a further 96 tracks of Sony DASH technology was called upon for redundancy's sake. But, don't forget that this is Bob Rock we're talking about, so two 24-track machines were used to simultaneously capture (in analogue) what was going in digital land. But, lest we forget that Metallica is to minimalism what Pamela Anderson is to 'girl-next-door', natural good looks... a week's worth of full rehearsals were similarly recorded – just in case!

So it came to pass that an Antonov's payload worth of multitrack tape was airlifted to Bob Rock 'home' studio in Maui, Hawaii. Never one to be daunted by a challenge, Bob Rock and his long time partner in crime Michael Gillies, began the formidable task of auditioning countless hours of performances to put the million-piece

jigsaw together. But even that job would be too easy without a further caveat. Because the project was to be released on DVD and VHS the audio had to (at least loosely at this stage) match a provisional version of the video footage of the event – e.g. Kirk Hammett's solo on the second night may have been the preferable one, but it may not have matched the time-stamped video footage of him clocking the first viola over the skull with the back of his axe (I exaggerate, but you get the idea!). After a month or so of hard graft, Bob called upon the services of Darren Grahn. Darren's been involved with the Bob Rock/Metallica dream team for a good number of albums and, although an accomplished producer/engineer in his own right, it's his ProTools editing expertise that made him so invaluable in this context.

Christopher Holder: Darren, can you give me an idea of how your time was employed in the early stages of this project?

Darren Grahn: It would be a case of Bob going through the multi-tracks and choosing the best band and orchestra performances from the two nights of recording or, to a lesser extent, the rehearsals. So it might be a case of: "Night One for *Master of Puppets*, that's definitely the best band performance... now let's listen to the orchestra... well, Night Two is actually better for the orchestra." So my job, in that case, was to cut the orchestra from Night Two into Night One – the band performance being the main criterion upon which night was used.

CH: So that's obviously where ProTools came into play?

DG: That's right. We'd bring the required sections off the 3348 into ProTools digitally, via AES/EBU. (An Otari format converter was used to convert the Sony's S/PDIF protocol to the AES format used

by ProTools.) Once the audio was in ProTools I could get to work fine tuning, and tightening up the performances.

CH: *So you've got Metallica going hell for leather in one corner, and the orchestra, led by conductor and arranger Michael Kamen, doing their thing in the other. To 'tighten' things up, how did you decide on the definitive tempo?*

DG: I'd start by doing a tempo map in ProTools. Using Lars' drums I made a live 'click', which could be used up the road when it came time to move the orchestra about – the rationale being: at least it's exactly in time with what Lars is playing.

So when I was cutting the orchestra I would take all 48 tracks, and think, 'okay bar one is close', line that up, then listen to when it starts drifting – maybe at bar five or wherever – do another master cut and pull it forward or back. Then I would go in and do the fine tuning for the individual sections. But there's a limit to what you can do, because to preserve the phase relationship you have to cut the orchestra as a whole. It's like doing a drum edit, if a kick drum is early, you can't just isolate the kick drum track and move it about – you'll have a nightmare in the phasing.

CH: *I suppose isolation is the key, and there's little chance of getting much isolation in a huge auditorium with a PA and over one hundred performers on stage?*

DG: Actually the isolation they achieved, both on the band and the orchestra, was absolutely amazing. I couldn't believe it. Even [long-time Metallica engineer] Randy Staub was really surprised, he said, "man, there's even less leakage than on most studio recordings I've done". Really incredible... Admittedly, the fact that the band were all on in-ear monitors helped. While all the instruments in orchestra were close miked, including the strings. It all had a huge impact on the fidelity of the individual tracks.

CH: *After Maui, most of the work was done at The Plant studios in Sausalito, near San Francisco. Can you describe the scene?*

DG: During that summer The Plant was very hectic. S&M had to be mixed in 5.1 and stereo for CD, VHS, DVD and DVD-A release. We had a room devoted to editing the orchestra, a room for archiving (based on a smaller Macintosh G3 system), and a another room for band edits, drum replacement, addition of samples, etc. Finally, of course there was the main mix room based around a SSL 6000 G-Series 88-input console. There was very little additional recording done in terms of fixing up guitars or vocal overdubs. There may have been the odd guitar part overdubbed, and James did one vocal for *No Leaf Clover* – it was an original song never released before and he really wanted to nail it.

CH: *I understand you were also using Digidesign's ProControl at The Plant?*

DG: That's right. We had two systems. First up, Bob Rock had a ProControl in the main mix room alongside the SSL, while we also had another ProControl for premixing the orchestra.

So the way it worked was: after all the ProTools edits the band was dumped back onto Sony 48-track; meanwhile the orchestra was actually taken from 48-track, dumped into ProTools, edited and then submixed down to



'Tooled up: Darren Grahn.

eight stereo subgroups – strings, woodwinds, percussion etc. So in the main mixing theatre Randy and Bob had a ProTools system (with the orchestra mix on it) chasing a Sony 3348 (which had the band on it). That system was quite good because it reduced the complexity of the mix for Randy but if he did want to fine tune one of the orchestra subgroup mixes he could let me know and I'd call up the individual elements on my hard drive.

But ProControl was a real eye-opener. It was quite new at the time and being able to reach out and grab those faders was easy to appreciate.

CH: *When I first heard S&M I have to admit that I was expecting something pretty overblown and ostentatious but, to the credit of all those involved, it really sounds spontaneous and unforced. Was the band pleased?*

DG: It was never meant to sound overly processed or riddled with internal trickery. The band wanted it to come across as a performance on the night, and to preserve that feel. Naturally, it being a live show with an audience involved, you can't do any wholesale changes – even if you wanted to – but there was still some room for manoeuvre in terms of getting in there with ProTools and tighten things up a little. Like you, I think the results are very effective.

AT
Darren will actually be soon hosting a series of Studio Session seminars in Australia, where he will cover the use of ProTools in the recording process – from songwriting to mastering and 5.1 production. The studio-based seminars will be strictly limited to no more than 25 people and Darren will be bringing along plenty of real world examples of ProTools sessions – allowing attendees to see the process, step by step, from idea to finished product. Most cities will host a 'Pro' sessions and a more elementary one (for those not so far down the ProTools path). The seminars kick off in Perth on the 13th of July and will wend their way around the country to: Brisbane, Sydney, Grafton, Melbourne, Hobart, Launceston, and Adelaide. Use one of the numbers/addresses below to find out details of availability and pricing.

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