



Mixing INXS in 5.1

'I'm Only Looking' is a comprehensive package of hits and rare footage that is soon to be released by INXS on DVD. Andy Stewart headed into the studio to hear how Mark Opitz and his 'Best Seat in the House' production team pulled together this labour of love.

I've just come from Studios 301 in Sydney where I've been listening to some new 5.1 mixes of well-known songs recorded by one of Australia's most popular and successful bands, INXS.

In my car on the way over I found myself vacillating between the present and the past, wondering what the making of a *Greatest Hits* DVD collection meant to those involved, but more importantly, how any of this work was relevant to fans in 2004. Was this an attempt by the band to reclaim former glory, or was it a labour of love motivated by the desire to bring the expansive history of INXS together under one roof, one format? I really had no idea.

As I sat down in the 'hot seat' to listen and watch the new INXS DVD *I'm Only Looking* for the first time, while Mark Opitz and Tony Wall, the producers of the DVD, talked over my shoulder about different aspects of the project, something unexpected happened. The songs began stirring in me an emotional response that I hadn't anticipated: feelings of sadness and reflection that the songs had never engendered before. So why did I feel like this

now? What had changed? These were great songs back then sure, but they had never *meant* anything to me in the past. In my head at least, INXS had always been more of a 'phenomenon' than a group I could 'relate' to.

It wasn't the '80s fashion palette (which was far more ludicrous than I remember it being) that made me feel nostalgic, or the gobsmackingly self-conscious hairdos (which in hindsight should have seen far more hairdressers jailed), or even the multi-tiered keyboard stands, that made Andrew Farriss look like an aerobics instructor. It was the realisation that despite my ambivalence toward INXS over the years, their songs had been embedded in me, and resonated now in a way that was both emotional and intriguing. To see Michael Hutchence's incredible 'life's work' play out in front of me was a little overwhelming to be honest, but beyond this lingering sorrow, what confronted me at the studio was the band, the songs, the new surround mixes and *nothing* else. No bullshit, no press, no hype, just extraordinary vocal perfor-

mances and a refreshed memory of an incredible collection of hit songs laid down over almost two decades.

I'm Only Looking has been a massive undertaking for all concerned, and for Mark Opitz and Tony Wall in particular, who form part of the 'Best Seat in the House' production company along with Philip Deamer and Fred Balayan, the experience has been as much a technical journey as a nostalgic one. I spoke to Mark and Tony together about their experiences of mixing INXS in 5.1, and surround sound mixing in general: where it starts, and where it's likely to lead us. I began by asking Mark the obvious question of how they came to be involved in the INXS project.

Mark Opitz: I've been heavily involved in most of INXS's records over the years, [17 releases at last count...] and this project was always going to be a fascinating one to dive into. Our company, 'Best Seat in the House', has taken on a few significant DVD projects like this already, so I was never going to pass this job up. This is the official INXS *Greatest Hits* DVD; the one that all other DVDs will be judged by, so we've been determined to make it something really special. We're not just knocking up a DVD here, this thing is a monster.

Andy Stewart: *What I've heard so far certainly sounds pretty amazing...*

MO: What we've played you hopefully illustrates the fact that we've tried to be as true to the original mixes as possible using our own techniques we've developed over the last few projects. We've built the 25 songs on Disc One into a 3D panorama, effectively putting you in the room with the band. Not only are the mixes 'left to right', now they're 'north to south' as well.

The fact is, the marriage of music and vision is already here, and it's not going away. The DVD player has established itself now in nearly every home in Australia, and that's always the hardest part: getting the hardware into the lounge room. Now that people understand that a DVD player will also play CDs, CD players are out the window. For the time being DVD is the future – it has to be. It's only a matter of time now before people are mostly playing DVDs and expecting more from them. It's not so much the 5.1 surround sound angle – that's still a value-add... something people demand as an extra – but sound with vision is here to stay. We want to be part of that revolution because it excites us and ignites our enthusiasm. After so many years of producing records, it's nice to explore a new format, discover new techniques and confront a totally new group of challenges. That's why 'Best Seat In The House' was formed.

The Philosophy of Replication

AS: *Is the basic philosophy behind the 5.1 INXS remixes to essentially replicate the original mixes in 3D?*

MO: Essentially, yeah. Tony and I learned this on the last big project we did with KISS; that there's no point trying to reinvent the music or the mixes. I know that seems ironic, given that we're mixing in 5.1, but the fact is INXS fans want to hear the music the way they believe they heard it before, so that's our aim. The fans are the 'owners' of these songs now in a sense. Tampering with them is a can of worms which usually only upsets people. You can't change a song that's already in everyone's head; it's folly. So we've simply made the stereo mixes come to life, if you like, in 3D.

And these are all total ground-up digital remixes...

AS: *Mixed entirely in ProTools?*

MO: Yep, we're inside the 'Tools domain at all times; remastering in 5.1 as well. Tony and I designed the sound templates for the songs and the mixing was done entirely 'in the box'.

AS: *What does 'setting up a template' for these INXS mixes involve? What are the nuts and bolts of the process?*

Tony Wall: Well, we went back to the original two-inch analogue and 48-track digital masters and transferred those into ProTools. From there we recreated the stereo mixes to match the originals, and it was only after we'd 're-established' these stereo mixes that we endeavoured to build the third dimension into them. I spent several weeks with all the songs, just going back through them one at a time, with the stereo version of each song running in parallel with the multitrack file, literally building the mix again from the ground up: 'build that kick drum sound, build the reverb for it; get that snare sound, build the reverb for it; build the drum picture, pull the bass in...' And it's literally, step by step, building it up and just A/Bing back and forth – 'what's that sound, have I got that in my mix?' That was an important part of it because like so many recordings, there's stuff on the multitracks that didn't make the final mix, and in some cases there were sounds that *weren't* on the master tapes. We had to find those sounds elsewhere – on slave files or tapes that had flown the sound in during mastering – so there were all those challenges as well.

MO: And what we've found time and time again is that a project like this is all about preparation, preparation, preparation. It's absolutely fundamental to the outcome. Before you replicate anything you've got to make sure you have the 'assets' in line, and constructing them so they work together long before you get to the



Tony Wall (left) and Mark Opitz are 'the men in the grey suits' – but not this day.

replication point is paramount.

TW: And that preparation includes spending an afternoon down at the lockup going through tape after tape, going "Is that the one? No, that's got something on it that this one doesn't have... Is this it? Yes, that's the one"... All of that stuff was really time consuming.

AS: *So in recreating these mixes you also become a bit of a historian at the same time?*

TW: Exactly. An archaeologist in some senses.

AS: *Do you reach a point in this 'replication' process where you can A/B the original with the ProTools multitrack file and they*



The control room is powerful well beyond appearances. The system includes ProTools HD, Dolby converters, a Control 24, Genelec 1039s & Mackie 824s.

sound virtually identical, and only push on from there once that's achieved?

MO: That's right.

AS: *Do you disregard the original at that point or are you constantly referring to it right to the end?*

TW: Constantly... you're constantly referring to it.

AS: *How do you make your panning and effects choices, given that the territory's uncharted from there?*

TW: What we found is that the original song will largely demonstrate to us what you can and can't get away with. It'll either provide your imagination with a sound that makes you go, 'Right, that sound can be used in the field', or make you realise that 'Nup, that's got to be static.' Some of the songs are actually quite plain in their use of the 5.1 spectrum because they didn't give us much to grab hold of without the mix becoming gimmicky.

MO: And that's one of our big mantras: no gimmicks. We've used panning subtly. On *Need You Tonight*, when Michael whispers, "Come over here", we pulled that line totally off axis so it draws the listener around. We've done a few little things like that but there are no 'shooting stars' if you will, flying across the place or anything like that.

TW: There were very few opportunities to use the surround panning explicitly like that and those moments

Preparation...

Mark Opitz: Preparation is not just the gathering of 'assets', it's file management. When you're dealing with multiple audio streams plus a stream of video, with everything offset because you've got different things happening at different times, you can end up with information scattered all over different drives if you're not supremely organised. I don't know how many terabytes we're using on this INXS DVD but when you're using that much space you've got to be able to access it without 'Tools looking at it and going, 'Can't find that, can't find that...'. If you haven't got that part of the process under control you've got nothing. The easiest part of this whole project has been the mixes – by a long way – and the most enjoyable. That's not where the hard yards are at all. The hard yards are in the preparation and the technical knowledge that you need... 'Can I do this, can I do that? Where do I put this in terms of file management? Is that the right part; where does that come from; how does that align with that; why is that format different from that format; how do we correct it; how do we change that format to that format without losing it?' It's unbelievably complicated. The mixing process is five percent of the work; the preparation is 95 percent.

were obvious to us.

MO: And as you go through the chronological list of songs, the mixes get a little more extravagant in their use of 5.1. Songs like *Shining Star*, *Elegantly Wasted* and *The Gift* – all these sort of songs from the later INXS period – have little effects going off everywhere, but you don't do that to songs like *The One Thing* or *Never Tear Us Apart*. In all that early stuff you bring them out of their stereo dimension into 3D, and that's it.

AS: *You've obviously done that with Original Sin as well, where you've made the snare's reverb, for instance, project forward and around you...*

TW: That's certainly something that you can take advantage of in the 3D field, you can actually separate your reverb from the source sounds, in the same way as it occurs in a real space, which really gives you that 'throw' you're describing.

AS: *Original Sin has an amazing sense of depth too, but unlike a typical stereo mix, the depth perception protrudes forwards rather than away from you, like we're used to hearing from a stereo soundfield...*

MO: Well that's exactly what we've tried to design. It's interesting that you picked up on that because *Original Sin* was the third song we mixed where we first said to ourselves; 'Okay, we've done the donkey work, let's get creative and get this stuff sounding magical.' Around that time a light went off in our heads, and after that our ideas really started to flow. For *Original Sin*, we designed a 'perspective point', if you will, which clarified how things would behave around that point: that was the first song we did like that. After it was finished we actually went back to the first couple of songs and applied that techniques to them as well.

AS: *In simple terms, can you explain what that 'technique' is?*

TW: Well, some of it is pretty simple to figure out: you don't separate a drum kit into its component parts across the field; we treat the kit as a whole and spread it through rather than placing overheads at the back and the snare at the front – that sort of caper. The techniques we're talking about mainly involve time: *when* you perceive a sound is the critical ingredient. There is a little bit of psychoacoustics involved too but the 5.1 spec isn't perfect as far as a circular field goes. The rear speakers are so wide, they're not true reflections of the front at all, so there's a point where it *looks* like it's right and there's a point where it *sounds* like it's right. It's really a matter of finessing... 'a little bit of this, pull this forward, let's separate this vocal from that drum kit' – that sort of thing. It's important not to let the conventional language trick you either: The 'rears' aren't actually rears at all. In fact, in most households the rear speakers are often beside the listener.

Schools of Thought

AS: *There seem to be two schools of thought out there at the moment: one assumes that households have a well placed and balanced working surround system, the other assumes that maybe the domestic setup is a*

bit cobbled together; maybe there's no LFE speaker, or perhaps the centre channel is dodgy or absent. Which school would you say you're from?

MO: I don't worry about it. If someone hasn't got their system plugged in the right way, it's not our problem – we'd like to think that the final listener has at least got a standard working setup. The only thing I worry about, in that sense, is that the room we mix in translates well into the world. In this room where we actually do our mixing you'll see 1029A Genelecs – little, boxy, tiny speakers – along with a 1094 sub, and this is what we mix on. It's quite industrial in here. We don't mix on big, glorious lounge room speakers, we mix on ones that will ensure that the mixes will work in every environment.

TW: And for my part I couldn't even afford to second-guess whether household setups are working properly because we're not going to compromise how we mix to accommodate a faulty setup. Although, actually one of the best things that Mark and I did about 18 months ago was go down to Harvey Norman and play some systems to find out what most people are buying. If we're concerned about people's domestic setups, it's to ensure that our DVDs always have something emanating from all six speakers. So, do we worry about the final listener? In that sense, yeah, we do. Some of our technique is based directly on that sort of knowledge and that's made our stuff sound better on good systems, not just better on bad ones.

MO: But to reiterate, we're not scared to use the format. We're excited to find ways of making it better; we just don't use it as a gimmick. We do our research, we're constantly reading articles and papers on 5.1 and our theories and working practises are evolving day by day. But some of these methods we're developing are things we're pretty keen to keep close to the chest for the time being, so if I tell you about them I'll have to shoot you. What I will say though is that basic fundamentals of mixing still apply. You still have to use your judgement and make informed decisions; you can't expect the 5.1 format to do the mixing for you. And I'm not being cagey about this just because I don't want to give away our secrets, it's because what I do know is that you can only learn this stuff by experiencing it for yourself – you have to fall off the horse heaps of times to get to this point.

AS: *Well, I certainly don't want to be killed over this*

so... can you tell me what you see being the 'mistakes' people make?

TW: Everything from delivering mixes too hot, to mastering program without compensating for the encode chain which comes next; that's a common error. The misuse of the dimensions is another... even the techniques used in so-called 5.1 mastering rooms: some are using three different types of speakers to deliver a coherent six-channel mix, and sometimes there's different compression and EQ applied to the rear speakers which pulls your mix apart. Also, I don't think people properly take into account the effect 'folding down' has on stereo and mono program. You have to take this into account the same way you do when you're mixing in stereo; where you refer to mono. You don't mix in mono, you just pop down to check that it's working okay, and if it's not, you come back out and find the middle ground where it works both ways.

MO: ...mono's always going to be there in a technical sense.

TW: That's right. It's even there in the Dolby spec because there are still DVD players plugged into mono televisions so it folds down both to stereo and mono; all the way down... it's supposed to work coherently.

MO: Easy there big feller, you don't won't to give away one of our big trade secrets about how to get 5.1 out of a mono TV! But Tony's right, phase coherency is the key here because if the system's not matched, it's impossible to be phase coherent. The other thing is not to let the focal point get too small – a point that critics of 5.1 often make: that the format's too narrow in its focus. With these INXS mixes you don't necessarily have to be in the 'perfect' spot. We've designed a wider raft to sit on I think, inside the spectrum. Sure if you get too far over to the left rear speaker that guitar is going to blow your head off, but if you put your head in the right front speaker in a stereo field, half the mix is going to blow your head off anyway. That's always been the case. In 5.1 there's just a different projection area.

Staying True

AS: *Given that a large aspect of this project is about replication and staying true to the original mixes, when do you decide that, despite your philosophical position, you're just going to change something anyway?*

Dolby, DTS and Bit Rates

Tony Wall: The Dolby format is quite a lossy compression algorithm that folds six channels down into a single bitstream, which gets pulled apart again at the other end. 484 kilobits is the highest rate you can put on AC3 for a DVD. There are higher rates but you can't play them off a DVD if you do it. So obviously, being an audio driven disc we've gone for the highest encode rates, but because it's a compression algorithm so have to you expect loss. DTS, however, is a different compression algorithm. The lowest DTS bit rate has more than twice the data size of the highest AC3

bit rate, so the compression isn't as severe. Consequently it sounds better but there are other things it's not doing. For instance, it's not applying 3dB drops in your centre and rears when it does the fold-down. There's a number of technical things it just doesn't interfere with. Consequently, like anything, you go in clean, it comes out clean. You have to be very aware of what these systems are doing to your mixes, and ideally it's best to monitor through your encoders, which is how I do it. Being able to respond to the sound changes that occur in that compression

chain is very, very handy. It's very difficult to second-guess it because it's not as much a tonal shift as it is a perception and detail shift. You don't lose from 10k up but what you do lose is detail from 5k up, it starts going a bit crunchy, a bit mushy, that sort of thing. It's much less so with DTS. But the problem with DTS is that it's not an official part of the DVD specification, it's actually something that has to be knitted into the disc as an add-on. Not all DVD players play DTS either and some of the ones that do don't handle it as well.

MO: With some of the songs we got to a point where we agreed that; “You know what? Even though that instrument’s panned there it’s going to sound a little better if we pan it over here.”

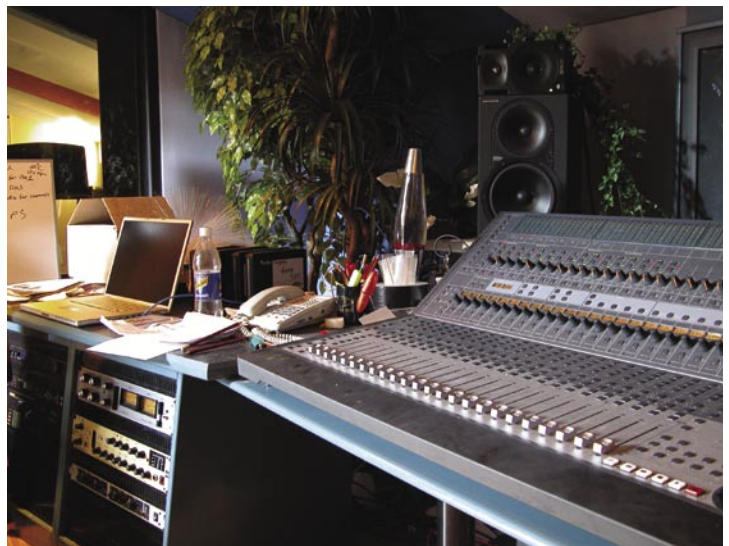
AS: *What if the original sound provokes a memory in your head that ‘Oh that’s right, we never really nailed that sound at the time.’ In that circumstance, do you stay faithful to the original?*

MO: If something sounds really bad we’ll soften that sound to make it more acceptable. In that situation we try and imagine what the band was originally striving for, but couldn’t achieve for whatever reason. The important thing is to make sure that anything we do is clearly an improvement rather than an artistic change. We want to be the grey men in the background. This is not our show. We don’t want people to recognise or notice us. As soon as we change something drastically, that means our heads stick up, and we don’t want that.

TW: The request also came from the band as well that if we didn’t feel the drums needed to be as loud – given when it was done and the style of the time – if we didn’t feel they needed to be *that* loud, don’t be afraid to keep them back a little.

AS: *So you’re still obviously using your own instinct ultimately. It would seem unfortunate to have to make the same mistakes twice...*

MO: Yeah, in that sense we’re making the calls, totally,



and the band has been good enough to trust us with that issue because they know that it could really open a Pandora’s Box. If you had six guys in here going ‘we should do this, and let’s fix that... no, let’s leave it the same...’. Or worse still: ‘I don’t like what I played there, let’s do that again.’ We’d all like to change things we’ve done in the past, but in its own humble way, this is a little piece of history and I think what we’ve endeavoured to

do is keep the dream alive as it was.

But we have made some changes, I'll admit. We got to a point, particularly in some of the later songs, where Tony and I agreed that we needed to do something; to explore the 5.1 spectrum and have a surprise thing happen with a lyric, or a little sting here and there where a guitar reverb might go subtly from one side to the other – things like that. But we haven't tried to re-invent the wheel. We've left that side of things to the remix engineers like Morales, Paul Oakenfold and Pete Boromer. Paul Oakenfold has done the remix version of *Suicide Blonde*, Peter Lorimer's remixed *Bitter Tears* and Morales has done a version of *Disappear*. All we could have done, if we'd chosen to re-invent the mixes, was give a slightly different perspective to something that was already established and I just hate it when that stuff gets caught half way.

TW: George Lucas did that with the three Star Wars films, by revisiting them and digitally altering them; adding new parts and 'fixing' things up, it spoiled my memories of those films, which was really disappointing. It felt like tampering, and it somehow warped history.

Reinvigorated...

AS: *So what is it about the 5.1 surround format that excites you both?*

TW: The sound field is less compromised than the stereo image. I enjoy working with DVD because it's new and there are so many challenges thrown up. I really like the fact that it's uncharted territory. We love being pioneers and discovering new things.

I've worked on records for so long; there's a certain mindset you develop, certain prejudices I suppose... but most of those prejudices don't apply here.

MO: I've personally been making albums for more than 25 years and frankly, I was jaded. I only want to make records now where there are genuine challenges. In the early '80s, I was always enchanted by three-dimensional sound and I hear three-dimensional music wherever I go. It's something I've been chasing for a long time and even though I don't see 5.1 as the be-all and end-all, it's an exciting format to work in and there will be more like it to come. I feel like a kid in a chocolate shop again.

But no matter what you're mixing and regardless of the delivery format, you can't get around the fact that the main thing you're listening to is the song, the performance, the band and [now] the pictures. That's it. The delivery format will always be less important than the music – always. But at least DVD's value-adding makes it harder to download a 5.1 mix off the net. There's another two and a half hours of value-adds on this DVD beyond the original 25 remixed songs. There is so much value-adding you couldn't possibly download it all.

AS: *So do you think the DVD format is going to save us in that sense?*

MO: I think it's going to help. But save 'us' – who are you talking about? The record company? The music industry?

AS: *I s'pose everyone, ultimately.*

MO: Yeah, well... music's music – water finds its own level.