

Elliot Scheiner

Recording The Eagles Live for 5.1



Elliot Scheiner (above) in the vintage Neve-based ABC OB van. (Left) The Eagles at work on stage at the Rod Laver Arena.

When the Eagles decided a follow up to their hugely successful 'Hell Freezes Over' DVD was in order, they chose a series of Melbourne concerts to do the live recordings. Christopher Holder talks to the man at the helm, Elliot Scheiner, about the biggest DVD gig on the planet.

The day I have to sit through that track again, will be a day too soon."

I find myself muttering words to that effect every time I walk out of a pro audio exhibition. It doesn't matter which monitoring manufacturer's booth it is, it's the same story: you drop by, plant yourself in a comfy sweet spot and an eager 'Chuck Smilingberger' sales rep will hit the remote and, bang... there it is again. Trade show after trade show... New York, Singapore, Paris, Frankfurt... it doesn't matter. Again and again and again.

The track? *Hotel California*. The DVD? *Hell Freezes Over*. The artists? The Eagles. The mix engineer? Elliot Scheiner. It's without doubt *the* de facto standard for live 5.1 surround sound listening by the audio cognoscenti (or even the audio 'incognoscenti'), but blimey Charlie you can get too much of a good thing.

Strangely enough, as I was curled up underneath a vintage Neve console in an ABC OB truck deep in the bowels of the Rod Laver Arena loading dock, I found myself eating those words. In front of me, only a few feet away, sat Elliot Scheiner in front

of a Yamaha DM2000 console preparing to do some on-the-fly mixing of an Eagles rehearsal. Then on cue came the jingle jangle signature guitar of *Hotel California* (albeit after a trumpet 'voluntary' just to throw a few of us off the scent) and it was like hearing the track afresh. Out of a pair of NS10 monitors, no more than four feet apart, poured a perfectly formed mix.

I have to say that this jaded old audio journo was amazed. It's one thing to kick back in a lounge chair with a G'n'T listening to a big-budget surround recording, imagining all the overdubs, all the countless hours of producing and mixing, mastering and fine tuning, and it's another thing entirely to be sitting doubled up in an OB truck hearing the magic being weaved before you.

Hotel Victoria

Christopher Holder: Can you give me a brief synopsis of what's occurring here, Elliot?

Elliot Scheiner: For a while now, the band's been planning a follow-up DVD to *Hell Freezes Over*. Once those plans were made known, NBC in The States got involved and wanted a package they could televise. So what we're doing is recording three shows in Melbourne. While we're recording I'm supplying a stereo mix to the vision guys so they have something they can use to make editing decisions from footage over the three nights.

CH: Why Melbourne of all places?

ES: The band loves it down here. The Eagles are doing an extensive Asian tour and this is an English-speaking country, so it's easier to work. But fundamentally, they love it here. There's a big fan base so we know we'll get a great audience reaction for the recordings. The other consideration is that the Rod Laver Arena is small enough to warrant three nights. We really needed a location that allowed us to set up and get those nights under our belt so we had choices down the line when it came to editing up the footage.

CH: And when it comes time to piece the 'best bits' together what are the choices based on?

ES: The vocal performances. The band plays consistently great every night so that's less of a concern – it always comes down to the vocal performances.

CH: How is the recording of this DVD different to the way in which *Hell Freezes Over* was recorded?

ES: *Hell Freezes Over* was recorded analogue and encoded into 16-bit for the DVD. This time around we're recording digitally to ProTools at 24/96. As a result I think it will sound better by the time it's mixed.

CH: How have your 5.1 mixing skills improved since *Hell Freezes Over*?

ES: For a start, I don't do all that much live stuff – most of my work is in mixing studio recordings. In terms of my philosophy, I haven't changed my way of thinking how live sound should be heard, but I just won't make any more mistakes about dedicating certain things to certain positions. For example, on *Hell Freezes Over* I dedicated Don's [Henley] voice to the centre speaker. That

Top Gear – Elliot's 5.1 Car

Christopher Holder: Last time we spoke you had a hush-hush project underway with a car manufacturer developing a 5.1 system. How has that gone?

Elliot Scheiner: Very well. You probably haven't heard much about it because the car isn't available here in Australia. But it came out in 2004, made by Honda – the Acura TL.

CH: Tell me more.

ES: With Panasonic's help we've put the first 5.1 discrete system in a car. And that's had a huge impact on the market. We've seen DVD-A sales double over the past year. That's really big for us.

CH: It's been said in this magazine and no doubt others that the car is the perfect place for 5.1 in that the position of the listeners are known and it's a place that people associate with listening to music. But I guess it's another job entirely to get the car functioning as a high quality 5.1 environment?

ES: It is, largely because the real estate you're dealing with is pretty limited. I would say to Honda: 'I want to put a speaker there' – 'No, you can't put a speaker there, it's dangerous', or 'That's where the ashtray goes' or whatever... There are all kinds of constraints. But Honda was so committed to this. They treated the interior of this car like it was a control room – they insulated the glass with acoustic insulation, for example. They went about as far as anyone can go in the automotive industry to implement this system.

CH: And the reaction?

ES: Every single review said it was the best system ever put in a car. In fact, it's seen by many as the single biggest factor that's put the DVD-A format over the hump. Universal, Warner and BMG have all announced they're going to release dual-format discs in the future – CD and DVD-A on the one disc. I think that's another thing that puts it over the hump. You've got the CD there, people buy it for the CD but they've got the DVD-A on the other side of the disc. Hopefully they pop it in their DVD player.

CH: How is your system more than a DVD player addressing five in-car speakers?

ES: System tuning in a car is very difficult. You've got to ask yourself questions like: Where is the right perspective when you're sitting on the left seat in front of the left speaker? How do you hear the right speaker? How do you hear the centre channel properly? You've got problems like having the headrest behind you...

Also creating the rear seat environment, you've gotta somehow maintain that while not interfering with the overall environment for the front seats. There's a lot of trickery that goes into tuning the system that I can't talk about, but a lot went into that.

CH: What with your work on in-car audio, do you now mix 5.1 with the car in mind?

ES: Well, I check my mixes in the car now. Instead of checking the stereo mix I burn a DVD and I sit in the car and listen.

CH: And do you own one of these cars?

ES: Yeah. But it wasn't given to me!



Elliot Scheiner largely used the same mics spec'ed for FOH sound. Although the drum kit featured some alternatives, including extra Audio-Technica tom mics and an AKG D112 on the kick.

was the only place it was and it wasn't a good idea to do that.

CH: Why?

ES: You never know where the centre speaker is going to be in people's living rooms. If someone's got the centre speaker behind the TV they're not going to hear much. But generally I'm still of the mind that you just can't drop the listener into that concert environment and expect them to be happy with it – you've got to offer more than that.

CH: So, there's more to it than simply trying to recreate the ambience of the room?

ES: That's right. And you'll never be able to recreate the room anyway. You can get a sense of space, but never in a way that people are just going to go: 'wow, this is as good as being there.' But if someone suddenly hears the keyboard playing out the left surround, that's when they go, 'wow'.

CH: You must find yourself in the minority there, because most live surround sound mixes simply use the rears for ambience.

ES: You're right. In fact, I'm the only person who does that. Well, actually Al Schmitt does a little of that now. But most people don't. As you say, they dedicate ambience to the rear. I just find that approach boring.

CH: There's a school of thought that having unexpected cameos of sound coming from the surrounds is unsettling and should be avoided. In fact, it's an opinion expressed back in Issue 37 in Andy Stewart's interview with Tom Hidley.

ES: Well, with all due respect to Mr Hidley, I don't buy that for a minute. When you're walking down the street and you hear a screech of tyres or a siren that's coming from behind you, do you find that unsettling or unnatural? Of course not. It's part of the soundscape.

CH: I guess that's the point. You're in the city and you can reasonably expect to hear that in that particular setting.

ES: You don't necessarily expect to hear a siren coming from behind you, or someone screaming from a building above your shoulder... If you ask me, the converse situation is more disturbing – shutting off the rears and only hearing what's coming from in front of you... now *that's* obtrusive. I don't want to live in a stereo world for the rest of my life – it's just not natural to me. Everyone I've played creative 5.1 mixes to, loves it. I think it's the best thing that's happened to music.

Take it to the Limit

Trackdown's Simon Leadley and Sound on Stage's Alex Wong were both pivotal in the recording of the Eagles' concerts. They recall their experiences and the enormous technical challenges that confronted them.

Simon Leadley: *I got the phone call from Michael White at Sound on Stage that there was a gig going for a ProTools operator on the Eagles Tour for a DVD release – would I be interested? A simple enough request, but little did I know what sort of adventure I was about to embark on.*

We got the tech specs a few weeks later and it was an eye opener – 72 tracks at 24-bit/96k, Neve preamps on all inputs, transformer splitters only and backups to tape (Sony DASH 3348 and five Tascam DA88s). To complicate matters the show was to be divided into two acts: Act One being one hour and Act Two around two hours. The whole show was also being shot on high definition video for the DVD so there were numerous feeds for the video people.

For my part, I needed to do some research into the ProTools side of things. Was it possible to record 72 tracks at 24/96 into ProTools... live? How much disk storage was necessary? How long was the backing up process going to take? How many interfaces were necessary and what cards and computer could we reliably employ?

In order to even record 72 tracks at 24/96 required an HD3 system (with a core card and two Accel cards) and a dual-channel SCSI card connected to 12 fast SCSI drives. The computer that we elected to use was a four-slot Mac G4 running at 967MHz and with 1.5GB of RAM installed. To this system we connected Digidesign's 192 interfaces fitted with the eight-channel A/D cards for a total of 72 analogue inputs.

I set up the system the week before the gig and soak-tested it to ascertain whether it was stable over long record times. My test revealed that the maximum recording time was two hours and three minutes (give or take a few seconds) which equates to a maximum file size of 2GB per track – this is the absolute limit and ProTools will cease recording at this point. As Act Two would be approaching this limit we had to be sure that it was not exceeded. Since no one, as far as Digidesign knew, had attempted to record this many tracks live, we were on our own – no one was able to offer us the benefit of their experience.

The actual data needs were staggering. We would record over 200GB of data every night and that would have to be copied to two sets of 250GB Firewire drives. This meant that a total of 600GB of data was created for every show. Simply copying this data was a very time consuming and exacting process. The show finished at 11.30pm so we knew that there were going to be some late nights.

I'll let Alex outline the setup for the recording...

Alex Wong: *As Simon mentioned, the initial plan was based around vintage Neve preamps, dbx compressors, all passive splits and two complete backup systems with the recording to be done digitally at 24/96 and 16/48. Simple! Add about 80 input channels to this and away we go.*

Sound on Stage has its own all-digital OB van with Yamaha DM2000s, Tascam MX2424s and DA88s, but that didn't help us with all the vintage gear we needed to source. Fortunately no one is as good at digging up equipment than Michael White. During Michael's vintage hunt he called Dennis Fox of ABC radio to enquire about their custom-built 40-channel Neve OB truck. Although the ABC truck had a 40-input console we still needed another 30-odd channels to cope with the number of stage inputs! Outboard racks and a 12-channel Neve Melbourn were the only available options for two reasons. One, it was all we could find and, two, they were the only things that we could fit into the limited space of the OB truck.

Having the ABC truck and the SOS truck on the job had a few advantages. We could use one truck for mixing

Hell Thawing Out

CH: Can you tell me some more about the setup you've got going on here at Rod Laver Arena to record these performances?

ES: There are 70 inputs coming from stage. Of those, there's a lot of different vocal mics. Especially for Don – he moves about a lot on stage and picks up the nearest vocal mic.

CH: Did you have a say in microphone choices?

ES: Not really. I've pretty much gone with what's already being used on stage. I did the drums for my purposes – there are extra tom mics [Audio-Technica ATM25s instead of Shure 98s], an extra snare mic and an extra bass drum mic [an AKG D112 instead of a Shure 52] – but other than that I've been happy to go with what the live guys have selected.

CH: And from there you're going to the ABC's OB truck?

ES: That's right, which has proven to be an adventure in itself. When I was told the only OB truck that would meet my requirements has a custom-built analogue Neve console from 1975, I thought, 'Geez I can't imagine it'll work that well', but sure enough it's one of the most beautiful consoles I've ever heard in my life!

CH: But you've obviously got more going on in the truck than the Neve.

ES: It's a 40-input console – which was an enormous amount of inputs back in 1975 – but we needed a lot more I/O. There's also a Neve Melbourn that's acting as a sidecar for more inputs, and we've supplemented that combination with a bunch of mic pres – mostly Neve 1081s and a couple of 1073s. That way, quite a few of the inputs from on-stage are going straight to the ProTools rig via the preamps. [See box item for more on the ProTools setup.]

All up, I've got to say, after hearing the first two nights back from video tape it sounds amazing. I'm really happy.

CH: But you're not mixing on the Neve, you're mixing on a Yamaha DM2000. Why's that?

ES: There's no monitoring on the Neve. It's only a 16-bus console so I'm monitoring the ProTools outputs on the DM2000. There are 70-plus inputs going into the DM2000 so I'm having to shuffle things around – I've got the vocals on one layer, the guitars on the next layer etc – and having to move from one layer to the other isn't ideal. But the important thing is that I know that everything's getting to the DAW. Obviously we'll redo everything down the track but I need to give the video guys a stereo mix that's listenable.

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Sea Change

Elliot Scheiner is a self-confessed analogue freak. He cut his engineering teeth at A&R Studios in New York under the watchful eye of Phil Ramone and for over 30 years barely spent a working day out of an enormous commercial studio surrounded by the absolute best in analogue audio design. In that time he produced, engineered and/or mixed some of the most gorgeously and sumptuously recorded albums of all time. But times have changed, recording budgets aren't what they used to be and despite Elliot's amazing credentials he knew he would need to take drastic action to preserve his livelihood.

... (continued) and monitoring and the other as a tape/production truck. Dennis and I got together and sat down to work on the logistics of getting the mics into and out of the Neve console and outboard preamps. All we had to do now was get a total of 146 lines (72 in, 72 out and a stereo monitor return) in and out of the ABC truck.

Gradually everything began to arrive at SOS as Michael had planned. Somehow he had managed to find a bunch of dbx 160 compressors in New Zealand! The Neve preamps were coming from two separate places. We received one set of 16 preamps and sent them straight to (pro audio designer/technician) David Peach for a tune up. One thing to consider when using vintage equipment is reliability – so we needed to make sure we were covered.

Once we were on site, and after about four hours of heavy lifting and patching, we were ready to start checking all the lines. Amazingly, after patching 72 input channels into the ABC truck, 128 individual outboard connections inside the ABC truck, 520 individual connections between the splitter racks and all of the recorders and adding USB control from a DM2000 in the ABC truck back to the ProTools in the SOS truck... almost every channel worked!

The final day of setup brought its own surprises. We had used all of the available inputs and outputs on the ABC truck, but somehow I had to find another 16 inputs and outputs for mixing and monitoring. I came up with a solution that would allow us to individually record all of the tracks, mix and monitor them and be able to play them back in sync on the ProTools system. We would take the inputs and split them between the recorders and the DM2000 in the ABC truck. Elliot's mix of these channels from the DM2000 would be sent via AES to ProTools and recorded on two tracks. The other split would be recorded on 16 tracks of MX2424 chasing timecode. After the show this would be converted and loaded into the ProTools session. Dennis and I went through the patch list and managed to find enough lines for us to get the inputs into the ABC truck's DM2000. It was a compromise that meant that Simon now had a lot of extra work to do but it was the best we could come up with.

On the day of the first show we were all ready to go. Once we were checked the band got up and played a few numbers. We recorded these for reference and Elliot started to get his mix together. It was amazing that with all of the cabling and connections we had that the system sounded so clean. We had some of the best vintage audio gear at one end of the recording chain and the latest, state-of-the-art equipment at the other. It all worked together flawlessly and sounded great.

On the night, the moment had come to put weeks of theory and planning into action. We waited for the video truck to start recording and rolled on all of our machines – from this point on we were recording the show. The more we recorded the more nerve racking it seemed to become, but thankfully everything went without a hitch.

After each show we created two backup sets of the ProTools session, added the additional tracks after they had been converted, checked the backup tapes and created three sets of CDs for the band to listen to. The master CD was recorded live and dubs made on the SOS truck's CD duplicators. This process took a few hours and we were always the last to leave at the end of the night.

It seemed that all the careful planning had paid off. By the end of the final show, it became clear that we had completed a job that we would always remember and made it work without any major problems. The client was happy and we had managed to pull off the largest live 24/96 hard disk recording that anyone seems to be aware of. We were certainly stretched to the limit but thanks to an amazing team of hard working pros (special thanks to Jim Astley – our eyes and ears on stage) we were able to rise to the challenge.



Backline to burn here. Thankfully there's plenty of water on hand.

CH: Last time we spoke, Elliot ['Mixing Queen's *Night at the Opera*', Issue 20], you were commenting on how the budgets for big commercial studios were beginning to dry up and your moves towards setting up your own mix studios. How has that gone?

ES: When I'd spoken to you during that time period, it was obvious to me that I needed to create a room at home. It became obvious that the industry wouldn't bear the cost of commercial rooms like it had in the past. Things are tough. If I had to take an educated guess, I'd say 60 percent of the engineering community hasn't got any work on at any one time. Similarly, the studios are virtually giving away time. There are studios I couldn't get into three or four years ago for US\$3,500 a day that I can now get for US\$1,000. More and more of them are going out of business. Sure, there will always be a few big studios because you always need the ability to get in there and do certain things, but it's going to slim down to a handful. In my view, most engineers, if they want to survive, are going to have to buy rigs to put in their homes or into small, leased workspaces. And that's what I did – I built a room at home. And, I gotta say, it was probably the best decision I've ever made. I'm so happy with the way the room turned out. I love working there. It's such a different environment to what I'm used to – the dark caves of commercial studios. I've got a very open room with half a dozen windows, a huge glass door and it all looks to the outside. I live in a place where there's no traffic, no noise of any kind. So it worked out to my advantage.

CH: You make it sound like falling off a log. But it must have been an unsettling and comprehensive paradigm shift?

ES: No question. The technology has been changing so rapidly for 10 years or so now. Take, for example, the Sony 3348s [48-track DASH recorders] and how we thought that was as good as it was going to get. Two months ago I saw a 3348 on eBay for US\$5,000. They were US\$250,000 new, and you can now get one for virtually nothing.

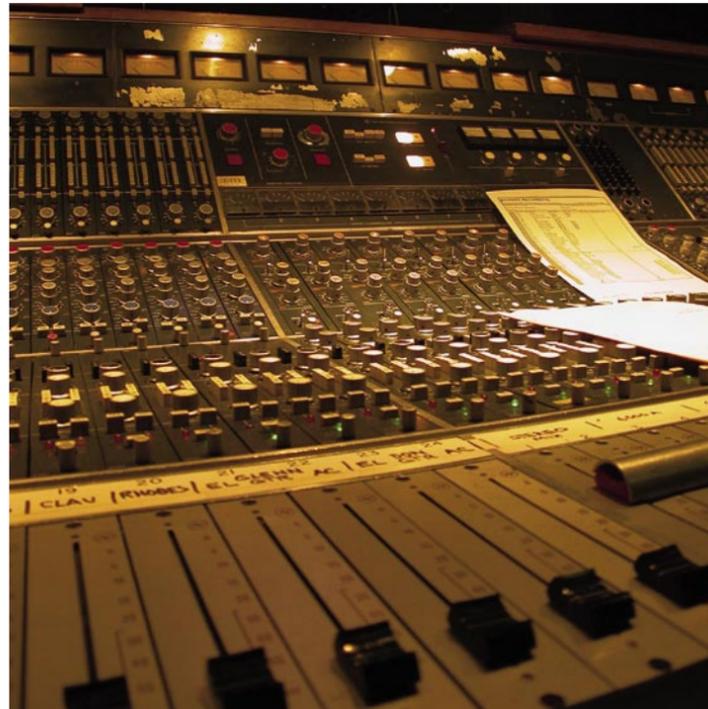
CH: In essence you saw the writing on the wall. To continue to get work you couldn't rely on having the budgets to hire big studios, while technology had caught up to the point that you could do much of what you do in a home studio. Is that a fair summation?

ES: Yes. That's the point I got to. I couldn't stay an analogue geek – a very small niche market – and I couldn't stay 'old school' if I wanted to remain in the industry. I started investing in digital technology. I started out with

‘I don’t want to live in a stereo world for the rest of my life – it’s just not natural to me.’

ProTools, but just couldn’t get comfortable with it. Then the Nuendo group formed [see Issue 20] and it was a new experience for me to work on a PC. That technology in itself frightened me – I was such a Mac user. But getting into Nuendo was a great move for me.

CH: Nuendo has hardly gone ballistic. Are you personally satisfied that Steinberg and its parent company will continue to support it?



The custom Neve console was ordered by the ABC in 1975 and built in England specifically for the OB truck. It was delivered as a complete unit in late '76.

More on the Custom Neve

Engineer Dennis Fox was on ABC’s staff when the OB truck was delivered. He tells us more.

Dennis Fox: It’s a custom Neve console that was ordered by the ABC in 1975 and entirely built in England specifically for this truck. It was delivered as a complete unit in late '76.

Neve in those days only did custom consoles. It has an engineering number but it doesn’t have a model number. This was absolute state of the art in '76. In current terms it was a million dollar-plus console. It was custom spec’ed, a bit like the Abbey Road Neves. The required spec was +28dBm and Neve exceeded it by 3.5dB. It is completely solid state, there isn’t a single IC, not one electronic switch, everything is mechanical, everything is direct path. And you can replace everything, possibly barring the input and output transformers. There is no desk in the country that this cannot crack – I’m yet to hear a better-sounding console.

We don’t quite know whether the Melbourn sidecar came first or if the Melbourn became a production console based on the work Neve had done on a console like this one. Certainly the pre’s on the Melbourn are the same as what’s on the console. The console and the Melbourn were obviously constructed at the same time.

ES: Yeah, they’re going to support. Sure it’s an uphill battle – you’ve got an entrenched Mac/Digidesign status quo – but there’s a group of us saying there are other avenues that we believe sound better and work better. With Nuendo I can use my own choice of converter, my own choice of clock sync...

CH: Challenging the status quo seems to be a habit of yours. I gather you’ve jumped off the Intel bandwagon in favour of an AMD processor?

ES: That’s correct. I’ve been introduced to a new box with AMD’s 64-bit Opteron processing in it and its performance is way beyond what I would have expected. What I had before was fairly reliable but now I *never* have a problem – I’ve never had anything that didn’t work with this processor. I was so comfortable with the AMD chip that we took four rigs to an Eric Clapton *Crossroads* event recently and the primary rigs were Nuendo using AMD processing. The show went over two days, there were four trucks, everybody had a rig in there and it sounded amazing.

CH: For a large project, how much can you reasonably expect to complete at home before you really need to head into a commercial studio?

ES: About 70 percent. Occasionally you get a project where you can’t. I’m just finishing up on a new Beck record in surround sound. That was all recorded in ProTools then mixed on an analogue console – a combination of plugs and console processing – so I had to go to a commercial studio for that one. And I just did an REM mix in surround – same deal: done in ProTools, but done with an enormous amount of interfacing with an SSL. So in those cases there’s no way you can avoid going into a big room, unless you want to spend months trying.

Don’t get me wrong, as much as I love working in my house, I do love getting out there too. I love the interaction and catching up with old friends and colleagues – find out more about what’s going on, and get their take on things. You get a little isolated otherwise. So I like the current mix of what I’ve got going on.

More Hell to Pay

CH: I made mention in my intro about how *Hell Freezes Over* gets played to death. Do you get sick of hearing it at...

ES: ... at the AES [Audio Engineering Society exhibitions]? Yeah, it starts to get to you after a while. But on the other hand, I’m proud.

CH: Even eight years down the track, it’s a real yardstick, isn’t it?

ES: You’re right. Myself, I look at it and think, ‘Gee I wouldn’t do that again’ – there were mistakes I felt I made. But I’m glad it’s so loved.

CH: And what’s the new DVD going to sound like?

ES: It’ll sound live, but it’s going to sound way better than *Hell Freezes Over*.

CH: I suspect that no one will admit it. They’ll still be playing *Hell Freezes Over* at the next AES.

ES: That’s okay.