

What's the best way to make a classic rock album? For producer Eric Valentine and guitarist Slash, there was only one answer: use classic recording techniques and vintage gear.

Paul Tingen

“When I first met Slash to talk about his solo album,” recalls Eric Valentine, “I immediately told him that the only way I wanted to do it was to approach it like a classic rock record: get great musicians, rehearse the songs properly, and record them on tape machines. There’s one particular vintage tape machine that I wanted to use for drums and bass, to get that classic ’60s rock sound, and I then wanted to use a more modern tape machine that can punch in and out for overdubs. My idea was to make it really simple, with a great drum sound and one guitar in one speaker and another guitar in the other speaker, so you can really hear performances. I didn’t want to hear just a wall of guitar sounds, I wanted to be able to hear Slash playing guitar. He seemed really excited about that.”

Saul ‘Slash’ Hudson was excited enough to entrust Valentine with the engineering, mixing and production of his first genuine solo album. Simply named *Slash*, it hit number three in the US charts and made the top spot in many other nations. It’s easy to understand why. Not only does *Slash* feature a number of high-profile singers, amongst them Ozzy Osbourne, Lemmy, Iggy Pop and, er, Fergie and Maroon 5’s Adam Levine, but it also boasts four of the five members of the most successful incarnation of Guns N’ Roses. The music itself seriously rocks out, with much full-on guitar work decorating an impressive number of good songs — including the lead single, ‘By The Sword’.

The most immediately striking aspect of *Slash* is its in-your-face sound, which indeed sounds like it’s harking back to the golden days of classic rock & roll, while at the

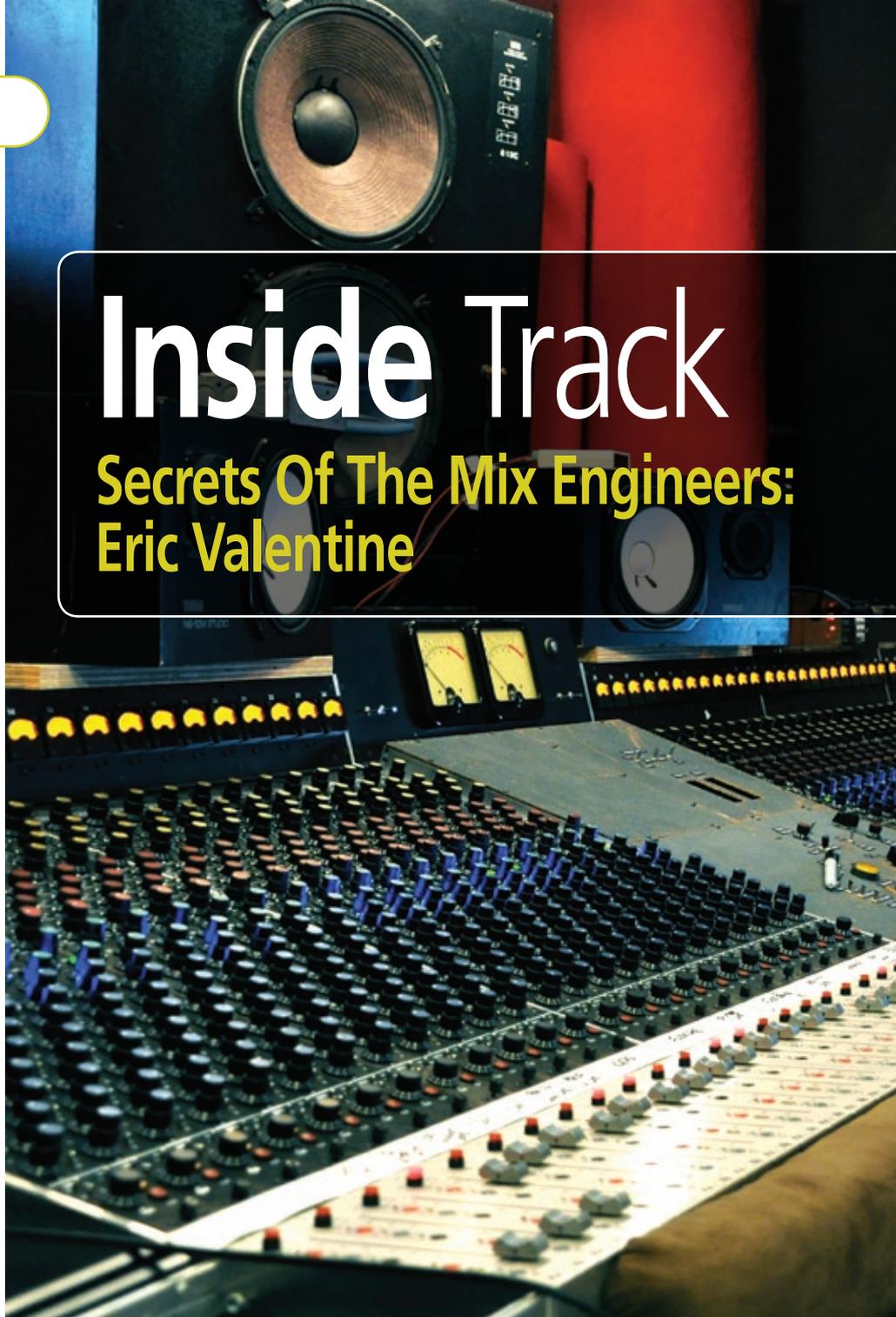
same time being thoroughly modern. With Scully and Studer tape machines, an EMI and a custom desk, an enormous array of valve, ribbon, and other microphones, and all manner of vintage and funky and obscure outboard, Eric Valentine’s Barefoot Studios is clearly the domain of someone in love with analogue recording.

“Modern, digitally recorded records are an abusive sonic experience,” says Valentine cheerfully. “The whole advent of digital recording has affected many aspects of the music industry and of contemporary recording, mostly in an unfavourable way. It has contributed to the overall decline of the recording industry, in part because listening to digital is less satisfying than

listening to analogue. To my ears, digital stuff has an uncomfortable, buzzy high end that I find very difficult to listen to or work with. Digital has the remarkable ability to sound dull and harsh at the same time, and I have to admit that HD doesn’t sound dramatically different to me. Of course, my formative years of getting into music and recording were during the analogue days, so I’m aware that I’m romantically attached to that sound and way of doing things. But there’s also real truth in the fact that modern, digital records just don’t have the same sonic effect as analogue records. When I was growing up and my favourite bands had a new record out, I’d get it, put it on my turntable, and I’d listen to it probably 10

Inside Track

Secrets Of The Mix Engineers: Eric Valentine





Eric Valentine in the control room at his Barefoot Studios, at the custom-built mixing desk that was under construction during the recording of the Slash album.

Photos courtesy of Eric Valentine

times in a row. They were great-sounding classic rock records, and I'd listen to them over and over. I simply can't do that with modern records. They're just way too fatiguing to listen to for a long time."

Extreme Views

Despite his attachment to the old ways, Valentine is only 41. He grew up in the Bay Area and got into recording as a young teenager in the early '80s, initially doing sound-on-sound recording with "two compact cassette recorders and a little Radio Shack mixer", then using a four-track Tascam Portastudio. As a drummer, he was part of the hard rock band T-Ride, and as an engineer and producer he has worked in

a variety of genres, including urban (Paris), ska-punk (Smash Mouth), post-grunge (Third Eye Blind, Lostprophets), heavy guitar (Joe Satriani), pop (Maroon 5) and punk-pop (Good Charlotte).

"I suppose I have some pretty extreme views on analogue versus digital recording," states Valentine, and it turns out that his enthusiasm for analogue isn't only to do with sound quality. He also sings the praises of the analogue way of working. "I do make records using a computer — I started using Logic and then switched to Pro Tools in 1997, with the advent of Beat Detective — but it's a completely different process that leads to completely different results. I have been trying to figure out ways of finishing

records just with a computer, without using a tape recorder, but it doesn't really work for me. It's just too disorientating. I can't do it. I just went through another project that I started doing on a computer, and halfway through I had to get the tape machines going. I now record in different ways. Sometimes I will start a project in Pro Tools and use the benefit of digital editing to comp performances, and after organising everything in the computer I'll transfer the project to a tape machine and mix from there. I did that with the Lostprophets record. It seems an appropriate way of working for rock-band projects. For more pop-style projects, where potentially a lot of arrangement edits are made close to

ERIC VALENTINE



Slash (left), bassist Chris Chaney (front) and drummer Josh Freese (back) lay down a take in the large live room at Barefoot, under the watchful eye of Eric Valentine (right).

► finishing, I capture the sound on analogue first and then transfer it to a computer. I ended up using that approach for the All-American Rejects single, 'Gives You Hell'.

"Making records with tape machines has always felt more like an actual craft to me. I'm self-taught, and learned my craft in the studio that I set up during my T-Ride days: it was called HOS [*an acronym for Hunk Of Shit*], and by the '90s I had been in six locations around the Bay Area. I had a Fostex B16 at one stage, and a Neve 8038 desk with 1081 EQs. The latter took up too much space and was not practical for mixing, so I switched to a Neve 8128 in 1997. In 2000, I bought Crystal Studios here in Los Angeles, which I turned into Barefoot Recording, the main reason being that I wanted a large tracking room. I've had several desks here, among them a Neve 88R, and since 2006 I've been designing and building my own custom console, which is finally done."

Crystal Industries Recording Studio was a legendary place where artists such as Barbra Streisand, Jimi Hendrix, Stevie Wonder and Eric Clapton were recorded during the late '60s and '70s. It had fallen

into disrepair when Valentine bought it, and required major renovation.

Slash & Burn

"Slash and I met through some mutual acquaintances. I'd never met him, but I'd heard all the infamous stories about him from the past, so for our first meeting I wasn't sure whether there would be this train wreck in a top hat careening into the restaurant. I just didn't know what to expect. Instead he was incredibly composed, very focused and very easy to talk to. He knew this record was going to be eclectic, with different singers on each song, and I think he was looking for someone who could approach each song in a more individualised way and could accommodate different stylistic approaches. He also said that he'd always made records with tape machines, and that the computer thing of playing in the studio and later finding that his parts had been moved or changed, or otherwise edited, was not comfortable for him. So the approach I suggested was really a lot more what he is used to.

"We started recording in April of 2009, and worked on and off for almost a year

on the record. Scheduling was incredibly complicated, because of variations in his schedule and in that of the various singers, so me having my own facility was a huge asset. I got involved in the project when most of the demos were already done. Everyone involved really knew what they were doing, so there wasn't much pre-production necessary. Slash is an amazing songwriter and arranger, and he had recorded instrumental demo versions of all his songs at Chris Flores' studio. He sent them to the singers, and they then wrote their vocal lines and lyrics and recorded these to the MP3 of the song in question. In a handful of cases, the singer went to Chris's studio and they worked on the demo vocals there. Slash intentionally wanted to record the demos really quickly and roughly, using drum machines and so on, to avoid getting too attached to the demo versions.

"Of course, Slash's guitars sounded good on these demos nonetheless, and we used some of the original keyboard stuff Chris Flores had done for a 'radio' version of Fergie's 'Beautiful Dangerous'. Also, Slash's vision and demo arrangements were so clear that most of the times the original demo



Sync'ing Two Tape Recordings & Pro Tools

During the mixing of the Slash album, Eric Valentine ran two multitrack tape recorders and a Pro Tools rig simultaneously. Asking if this resulted in any sync issues seemed to hit a sore spot. "Yes, sync was a huge problem," exclaimed Valentine, "largely because our friends over at Digidesign have destroyed the SMPTE sync function in Pro Tools 8. So I was constantly wrestling with that. I had to check the sync of the tape machines with Pro Tools constantly, using my ears and the isolated snare mic track as a reference to make sure that the snare on the tape and in Pro Tools were really tight. The thing they screwed up in Pro Tools 8 is that the SMPTE sync now doesn't accommodate delay compensation. So every time there's a change

in the amount of delay compensation [applied automatically within Pro Tools to compensate for plug-in processing delays], it changes the SMPTE sync. This was definitely not a problem in version 7, but I could not go back to that, because when I got 8 I upgraded my soundcards and my computer to an Intel, and I could not get an install of 7 to work on my new hardware. So I was stuck with 8. The moment I had 8 installed, I was immediately aware that they had screwed that up. It was really distracting and tiring to always be wondering in the back of my mind whether the tape machines and Pro Tools were still in sync and to then be adjusting the sync offset. But we managed to fight our way through it."

I've heard them do in a long time. So a lot of the times the vocals and arrangements were already pretty worked out by the time Slash came to Barefoot. He and I would listen to the vocals and arrangements and make decisions about what worked and what didn't, or what could be better. We then got [bassist] Chris Chaney and [drummer] John Freese in, and we finalised the

arrangement with three of them in the studio. Everybody would be throwing around ideas and we'd make sure that the demo parts translated into a group of human beings playing."

Extraordinarily Loud

"The process of recording was Slash, Josh and Chris playing together in my main recording area, facing each other, playing the songs live. A big part of Slash's sound is having his amplifier playing extraordinarily loud, so we had to have that in a separate room. This meant that he and the band were recording with headphones, even though Slash hates them. It took them maybe three to four hours for each song to work out the arrangement and play a couple of takes, from which I'd edit the best bits to get the master. We'd typically take about three days to record the music for an entire song. The first day we'd get the arrangements and we'd record bass, drums, and the basic guitar part. Once they were done and I had edited the master, I'd copy it to a slave reel, and the next day Slash would do his overdubs to that. Because the headphones make it hard for him to

feel what he's playing, for his overdubs I'd set up a live kind of thing in the control room. I have these big Urei 813 monitors which are almost like live monitors and I'd just crank them way up. Sometimes I'd be wearing ear protection while Slash was doing overdubs in the room with me. In that situation he was incredibly accurate and consistent. On the third day we'd usually record the singer.

"I recorded the drums really simply, usually with a classic rock four-mic setup, with a mic on the snare, in front of the kick drum, a mic that hovers above the hi-hat and one that hovers on the other side, above the floor tom and crash cymbal there. Sometimes I'd supplement that with a chamber mic and/or I'd put a 57 in front of the drum kit and send that to some guitar amps that had spring reverbs. I'd mic the amps and get a great distorted, reverby sound that blended in really well. The specific drum mics I used were mostly an SM57 on or an old Altec 633A 'salt shaker' on the snare, a Neumann U67 on the kick, and the two overheads would be AKG C12As.

"As for the bass, the bass cabinet was mostly an Ampeg SVT 8x10, which was in a separate room, with a Neumann 47FET and a Sennheiser 421 on it. The 47FET generally had a warmer and more natural sound than the 421. The guitar is very straightforward with Slash. He plays one electric guitar for everything, the replica of a 1959 Les Paul Standard made by Chris Derrig that he obtained when recording *Appetite For Destruction*, and I used a few different mics on his very loud cabinets, mostly an SM57, but sometimes a Sennheiser 421, sometimes a Beyer 160 ribbon if we wanted it to sound a little warmer and smoother. ▶

BAREFOOT RECORDING		SLASH		TITLE		BY THE SWORD	
PROFESSOR	(FLUTTER FILTER)	LEVEL	24/80	TAPE	40	REVS	0100000000
ENGINEER		DATE	15/05	TIME		DATE	5/2/09
16 TRACK MASTER REEL							
1	2	3	4	5	6	7	8
	K	SN	MONO RM.	- KIT	L	R	CHAMBER
9	BASS	10	11	12	13	14	15
DI	SUT.	B/CN	GTR	GTR	ANDREW	VOC	SUPRE
		VXX	MSL				
24 TRACK SLAVE REEL							
1	2	3	4	5	6	7	8
SPRINKS		SHR		MAIN GTR			CR2
(REF. MIX)		1	2	DRUM	SLASH	BY	DRUM
9	10	11	12	13	14	15	16
GTR 2)		AC GTR	AC GUITAR 3				
Singer	VY	EV. M.	AMP	Leslie	Leslie	Leslie	HI-L
17	18	19	20	21	22	23	24
Leslie	Leslie			- Vocals -			SUPRE
HI-R	HI-R						GO

The track sheet for 'By The Sword'.

arrangements of the songs didn't change much, which was incredible. The changes he wrote worked really well for the singers to write to, and I think he pulled some really cool stuff out of them, some of it the best

ERIC VALENTINE



Slash's guitar overdubs were recorded in the control room at Barefoot, with the backing tracks playing over the huge Urei 813 monitors.

► He has a particular Marshall 412 cabinet he really likes that has great low end. We would almost always have that rig going, because it's very comfortable for him while he's playing, and occasionally I'd mult the signal from his guitar to other amps, such as an AC30 and an old Silvertone, to blend in and get different textures that can help identify different parts."

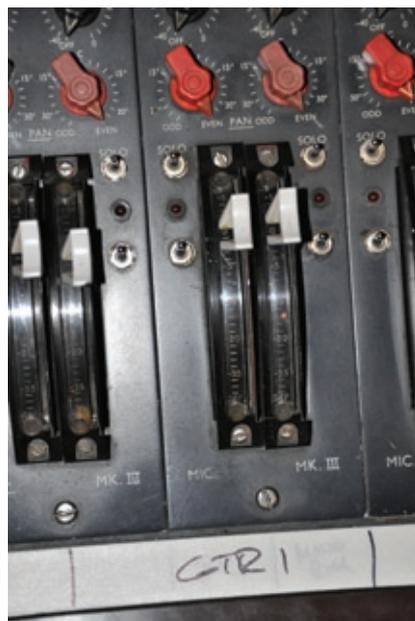
There's That Sound

Valentine's post-mic signal paths were remarkably simple: ancient desk into ancient tape machine. "Everything went through the 1972 or 73 EMI TG1 desk that I'd borrowed because my custom-made console wasn't finished yet. The EQ is not hugely flexible, but I could do some basic moves with it. I recorded the band to a two-inch, 16-track Scully tape machine, and also edited on that. So it was all about razor blades and slicing tape. The Scully was crucial to these recordings. It's a really odd beast that has a very specific and very cool sound. They were used on some of the early recordings of Jimi Hendrix and Led Zeppelin, and it's the first piece of equipment that I have come across where the second I used it I immediately went: "There's that sound! This really sounds like the classic records that I love! I heard this more with the Scully than with anything else I've used, whether mic pres, microphones, EQs, whatever. With the Scully it was just instantaneous: "Wow! That sounds like Jimi Hendrix's 'Are you Experienced?'" My Scully is American-made,

from around '69-'70, and I stumbled across it in 2004 and had it refurbished. It's a cumbersome machine to use, because it doesn't punch in very well and the remote was designed by a crazy person."

Because Valentine often used several amplifiers for one guitar part, the number of tracks quickly exceeded 16. Various other instruments, such as keyboards, strings and percussion, added to the track count, so while Valentine used the Scully mainly

for the basic rhythm tracks, he employed a Studer A800 24-track for overdubs. Surprisingly, however, most vocals were recorded to Pro Tools. Valentine: "Only Rocco Deluca, Beth Hart and Adam Levine sang directly to tape. For the rest, I did a reference mix of the master, transferred that to Pro Tools and they sang to that. Most singers prefer to sing into a computer, because it's a lot easier for them. Tape machines suck for singers. Getting



While awaiting the completion of his own mixer, Eric Valentine was forced to make do with an early '70s EMI TG-series...



The basic tracks were recorded to Valentine's vintage Scully 16-track.

everything in tune and in time, with all the emotion, is really hard to do in one take or one punch, and singers are faced with very real endurance issues. They just simply can't scream into a microphone for hours on end.

"Recording in a computer is a lot freer for vocalists. I can record a bunch of passes of the whole song and I don't have to force ►

ERIC VALENTINE

► them to re-sing specific lines. It allows them to get immersed in the song and they don't have to think so much about pitch or getting this or that word right, or whatever. I actually get more honest performances from singers when I capture them in a computer. I can then edit their performance, for instance tune a really cool performance, where the emotion is exactly what we want, if it's a tiny bit out of tune in some places. I'll only nudge things a bit to make sure it's not distracting, meanwhile definitely making sure that everything keeps sounding like real human beings singing. So I never use Auto-Tune aggressively. It just allows me to use really great, unreproducible but slightly flawed performances. Interestingly, it was the old-school guys that really embraced the computer, with Lemmy saying, 'Aren't these computers great?' They've lived through the challenges of capturing performances on tape machines. There's times where you lose stuff that you love because you were trying to punch one small part of it, or try to beat a take you had and it doesn't get better. It can be frustrating and tedious. With the computer, any time someone does something incredible, it can be kept."

'By The Sword'

Written by Slash and Andrew Stockdale
Produced by Eric Valentine

Eric Valentine: "By The Sword" was mostly recorded like I described, with the added benefit that we had the singer available while we were tracking. Andrew came up with a lot of arrangement ideas and contributed to the overall approach of the song. Slash plays an acoustic in the intro, a Martin reissue of the classic D28, which I recorded with a pair of Schoeps 221 mics. If I have just one, I like to place that between the soundhole and the 12th fret, so it doesn't get too boomy. In this case I had two mics in that position, one looking down at the strings from the top and one looking up from below, and if you pan them in stereo, the strings actually pan across the speakers a little bit, which is a cool effect. I had the prototype EQ for my custom desk around, and any time I needed detailed EQing I used those, and I used them when recording the acoustic guitar for this song. Pretty much all EQ on this album was done by this custom EQ or on the EMI TG1.

"Mixing 'By The Sword' was pretty straightforward because the songs were tracked with the sounds that we wanted,

and so mixing was mostly a matter of balancing and letting the sounds come out unencumbered. Keeping the mix simple was also the only way in which I could get away with my mix setup, which was really ridiculous. I'd hoped that my custom console would be ready for these recordings, but it wasn't, so in the interim while the console was being built, I had set up a 48-channel Flying Faders system using just the faders of my as-yet-unfinished custom desk, and two stereo summing busses. It didn't have auxiliary sends or inserts, so I had to patch outboard effects in between the tape machine and the faders. In addition I'd use Pro Tools as a sort of universal effect box. I had duplicates of all tracks in Pro Tools, so if I needed delay splashes or reverb or whatever in particular places, I could send that to a plug-in, and take a stereo output from Pro Tools to the fader pack. In some cases I also ran some outboard, like the Ursa Major Space Station and the Eventide H3000, through Pro Tools, to be able to use the automation and have more control."

Drums: Custom desk EQ, Dbx 165A, Empirical Labs Distressor, NTI EQ, Universal Audio 1176.

"On this song I had the four drum mics, plus one room and two chamber mics. The drums were as I described earlier — 67 on the kick, 57 on the snare, C12A for overheads — and there's a mono room mic, the Coles 4038, and the two chamber mics are a pair of KM84s. The drum sound is a balance of those, with a little bit of EQ. The snare drum and mono room had a little bit of my prototype EQ, while the room mic was gated to open when the snare hit, and the snare had some Dbx 165A compression. I submixed the drums to a stereo pair, on which I had a pair of Distressors and some NTI EQ, and I also did some parallel compression with a pair of 1176 compressors that I mixed underneath to add more density to the ambience."

Bass & guitars: EMI TG compressor, custom desk EQ, Universal Audio 1176, EMT plate reverb, Orban EQ, BSS dynamic EQ, Urei LA2A.

"There are two bass tracks: one DI and one recorded with a 47FET, using compression from the EMI desk. I'm pretty sure I used the 47 on this track, and I didn't compress any more during the mix, just added some of my prototype EQ.

"Getting a good guitar sound in a track starts with having a great sound at source

Tape Types & EQ Curves

"I used RMG's 911-formula tape during the recordings of Slash's album, but I wrestled with that the whole time, so the next time I may try ATR tape," says Eric Valentine. "My favourite tape used to be 3M 996, and after they stopped making that, I switched to [Quantegy] GP9 and occasionally to [Quantegy] 456. All the multitrack recording for the project was done at 15ips with an IEC/CCIR EQ curve, no Dolby. This meant calibrating the machines to what many people call the European standard. Early analogue tape machines had more problems with hum, so the circuits had the low end pre-emphasised, which then could be turned down on playback to help minimise the hum. Eventually, tape machines got better, with less hum issues, and in Europe they came up with a new EQ standard which is essentially the opposite, in that the high end is pre-emphasised so it can be turned down later to minimise hiss, and it also greatly improves the amount of headroom. This standard works much better for 15ips, but most of the American recording scene had remained locked into the original NAB recording curve, because so much material was recorded with it that it was difficult to change that standard. The mix for 'By The Sword' was done on half-inch, 30ips, and that uses a totally different EQ standard called the AES curve, on which everyone has settled."

and parts that are easy to feature. Slash comes up with both: he comes up with really cool guitar riffs that you want to hear clearly, and he's capable of playing them in a very cool, aggressive, punchy way. He has a particular attack that's part of his signature sound, and it makes mixing his guitar tracks really straightforward. I mean, a 57 sounds great on a Marshall rig, so we used that a lot, and when you have a player like him, it sounds huge. Some of the guitars in the mix had multiple sources and hence tracks, so I had submixed these on the EMI desk, on which I added a 'blue stripe' 1176 for some additional compression, and from the EMI



Although Eric Valentine's custom desk was not finished by the time *Slash* was mixed, its EQ was available and employed on several tracks.

I sent a stereo pair to my Flying Faders. I also used some EQ, and if there is reverb, it comes from the room mic. I never sent the electric guitars to a reverb, though I did use some EMT plate reverb, as well as the prototype EQ on the acoustic guitar. There's another intro guitar, an electric, before the drums come in, which is capo'ed, and it had an Orban EQ, a BSS dynamic EQ and an LA2A."

Vocals & mix bus: Universal Audio 1176, Altec 436B, Empirical Labs Distressor, Alan Smart C2.

"There are two vocal tracks: one main vocal and a double. I had recorded Andrew's vocals with an RCA 77DX mic and some 1176 compression, and during the mix the vocals went through a pair of modified Altec 436B compressors and a pair of Dbx 902 de-essers.

"The whole mix was compressed with an Alan Smart C2, and recorded to half-inch at 30ips. With the mastering, we had an initial round that came back too loud with too much limiting. I told the mastering engineer

Custom Console

Eric Valentine was frustrated not to be able to use his own custom-built console for the recordings of *Slash*, because it was not yet finished during 2009. Instead, he just used the desk's fader pack fitted with Flying Faders. However, come 2010, pride of place in Barefoot Studios (called so because the American prefers walking barefooted), goes to Valentine's console, which has been under construction since 2006.

"The company is called Undertone Audio, or UTA. The company right now is just four people: myself, Larry Jasper, Mike Westbrooke and Angel Corcuera. For the first two or three years it was just Larry and I developing the circuitry and general approach. I have brought vision, ears and funding to the project; Larry does the actual circuit design work, and Mike and Angel are now in charge of manufacturing.

"We gotta turn this thing down about 2dB.' I think it's the first time in five years that the mastering engineer had heard that! I can understand that artists get bummed out if their songs sound softer in someone's playlist where it's together with other people's stuff, but limiting for radio makes

"The design of the console picks up where the Class-A designs of the late '60s and early '70s left off. It has pure class-A signal paths input to output, with special vacuum-tube amplifiers for the mix-bus path. I wanted to make sure that the equaliser would be the best choice at least 95 percent of the time, and I believe what we ended up with is the most flexible and musical Class-A EQ ever designed. I was also determined to solve the acoustic issue that consoles have, which is that they adversely affect the sound of the nearfield monitors. So we made the work surface acoustically transparent. We're in the process of getting a patent for this, and until we have that I can't tell you more about it. One thing we did do is streamline the desk's configuration with features specifically for record-making, so it keeps the console physically smaller and less obtrusive."

the least sense, because radio stations limit the shit out of everything in any case! But I always tell mastering engineers: 'I don't care if we have the loudest record, I want it to be the best-sounding record."

On the evidence of *Slash*, Valentine may, in fact, have achieved both. 

SOUND ON SOUND

The World's Best Music Recording Magazine

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