



INSIDE TRACK

Secrets Of The Mix Engineers: Mike Shipley

Alison Krauss persuaded mix specialist Mike Shipley to return to engineering after a 10-year gap — in a genre he'd never tackled. The result was a creative and commercial triumph.

PAUL TINGEN

Mike Shipley seems to have a knack for working with artists just as they are hitting their creative and commercial peak. The engineer and mixer has been involved in more than his fair share of classic albums, including Def Leppard's *Pyromania* (1983) and *Hysteria* (1987), Thomas Dolby's *Flat Earth* (1984), Prefab Sprout's *Steve McQueen* (1985),

Shania Twain's *Come On Over* (1997), Faith Hill's *Breathe* (1999) and Green Day's *Warning* (2000). Shipley has also worked on successful projects with Aerosmith, the Cars, the Black Crowes, Foreigner, Tom Petty and Van Halen, and appears to specialise in big-sounding, panoramic rock, something that's not entirely surprising given his long-standing association with Robert 'Mutt' Lange, who single-handedly updated Phil Spector's "wall of sound" and applied it to rock & roll.

Shipley learned his engineering craft in the early '80s at Wessex Studio in London, at a time when legends like the original kitchen-sink thrower, Queen producer Roy Thomas Baker, was working there, as well as Tim Friese-Green, known for his work with Talk Talk, and Bill Price, who engineered and produced the Clash, the Sex Pistols and Guns n' Roses. Although Shipley has continued to do the odd bit of engineering and producing, from as far back as the mid-'80s, mixing has been his mainstay. Alison Krauss & Union Station's *Paper Airplane* is, in fact, the first album he's engineered for more than a decade.

Krauss is, of course, one of Nashville's prime country and bluegrass artists, but was less well known outside of the US before her much-lauded previous effort, *Raising Sand* (2007), which was a collaboration with the ubiquitous Robert Plant. The best-selling album collected a staggering five Grammy Awards, including Album of the Year: with 27 career awards in total, Krauss is America's most awarded female artist. But she is not exactly known for her rock & roll, nor for making hard-hitting, panoramic-sounding albums.

The Deep End

Paper Airplane is Krauss' 12th album, if one includes her four solo albums, six albums with Union Station, and two collaborative albums, one of them being *Raising Sand*. Both the last and *Paper Airplane* are worlds away from Krauss's debut bluegrass album, *Two Highways* (1989). Whereas *Raising Sand* was an exploration of Americana with a Nashville twang, helmed by producer T-Bone Burnett, *Paper Airplane* is mostly a very folk-like album, with minimal country and bluegrass influences. Self-produced by Krauss and Union Station, it doesn't have any drums or percussion and is almost entirely acoustic, augmented by only a minor smattering of electric pedal-steel guitar. The music is gorgeous, but not exactly the kind of thing that sets the mainstream charts alight. However, with both Krauss and modern folk music on the crest of a wave, *Paper Airplane* reached an amazing third place in the US *Billboard* charts and number 11 in the UK (needless to say, it topped both the US country and bluegrass charts).

All-acoustic albums without drums are rarely spotted at the top of the charts, and *Paper Airplane* is also unique on Mike Shipley's CV. "When she came here to ask me to record her album, it did seem a little strange to me, because most of the records that I have done are rock and pop

records, apart from the country-pop stuff with Shania Twain. She said: 'I really like the work that you do with Mutt,' and I was like: 'Huh?' The fact that that I had not engineered a record for more than 10 years also made me a little uneasy. I recall turning up for the first session in Nashville and Jerry Douglas [*Union Station's Dobro player*] was holding up a magazine and reading from it, 'It says here that you do rock records and that you haven't engineered anything in 10 years,' and he looked at me with an expression that seemed to say, 'So what are you doing here?' I was like: 'Do I run now?' It was trial by fire. Convincing those guys that somebody who hadn't engineered for a while could successfully work on their record was a bit of a tough one. It was definitely a dive in the deep end!"

Shipley adds that he "had built up such good engineering skills at Wessex Studios with Mutt, and Tim Friese-Green and Bill Price, it is not something that you forget," and this much is in evidence when listening to *Paper Airplane*, which must surely rank as one of the most gorgeous-sounding albums to have been released in recent years. Krauss's voice and the instruments — Dobro, acoustic guitars, mandolin, banjo, double bass — sound crystal clear and entirely natural. The arrangements and sonic image are also entirely uncluttered, as if Shipley had simply recorded the band in a room, and then put up his faders, and his feet.

Yet things are never quite as they seem. On closer listening, it becomes obvious that the instruments and voices on *Paper Airplane* have an unusual presence, almost as if they shine. They're right in your face, with the instrumental presence common in rock records, but not aggressively so. Instead, there's an old-fashioned roundness and warmth to everything that also seems to be reflected in the faux 19th-century sepia photos that adorn the CD sleeve. One begins to suspect that a lot of work and dedication went into the sound, and this is born out when Shipley recounts the details of the recordings and mix of the album, and the title track in particular.

Sweet Spot

Shipley recalls that the recordings for *Paper Airplane* were spread out over two years, largely because Krauss was in poor health during this period and often unable to work. Her website makes mention of "a bout of migraine headaches" that "brought sessions to a dead stop", and how one result was the album's title song, written by Robert

Lee Castleman but inspired by Krauss' experiences. From Shipley's account, it appeared that significant work also went into getting other circumstances right, ranging from testing the engineer to finding the right studio. "We started off at a studio in Nashville where she had been before, but perhaps they had been there one too many times, because the sessions didn't really work very well. So I suggested that we go to House Of Blues studios in Nashville, because I had worked there on a Faith Hill record years ago [*There You'll Be*, 2001]. The whole band instantly loved that place, because it has a nice, old-school vibe with lots of wood panelling. The energy really picked up after that. Many studios in Nashville today are very modern-looking, but Alison likes working in older-style rooms, with not too much daylight, so she can just focus on the music and not be side-tracked."

Despite the initial uncertainty in finding the right studio and engineer, and the long period over which the album was recorded and mixed, the team that worked on it remained the same throughout. In addition to Shipley and Krauss, there were the Union Station players — Jerry Douglas (Dobro, lap steel), Dan Tyminski (guitar, mandolin, lead vocal), Ron Block (banjo, guitar) and Barry Bales (bass), who are all seasoned Nashville pros — and Shipley's assistant Brian Wohlgemuth and additional engineer Neal Cappellino. According to Shipley, many more songs than the 11 that appeared on the album were recorded, at a rate of one or two songs a day. The band generally did some minimal rehearsal before coming into the studio, just to know their way around the songs, and then recorded the songs predominantly live. With Shipley sitting in House Of Blues' Tom Hidley-designed 20Hz control room behind the 80-channel SSL 9000 J-series, the band had set up in the large recording area.

"Alison had her own vocal booth, but she was in a line of sight with the rest of the band, so they felt all together. There was a little too much spill between the rest of the band for my liking, particularly with Jerry playing the Dobro, which is a very loud instrument, and Dan the mandolin, which is very quiet. So I built little huts around everybody, using baffles and screens. They all wore headphones, and each of them had his or her own mixer so they could have the balance they wanted. Once they had set up, they spent however long it took to get the arrangements and the feel and the tempo of each song right. These people have worked together for 20 years, so they



'Paper Airplane'

Written by Robert Lee Castleman
Produced by Alison Krauss
& Union Station

know each other well and almost have their own language, and Alison really knew what she wanted and dictated everything around the lyrics. She is very particular about what she wants to hear. The idea was to get the feel right by capturing the basic tracks live, and then to fix things afterwards. Sometimes Jerry wanted to change his solo, or Barry might want to replace a bass part. Things might get shifted around, but the essence was always one take.

"Alison sang a guide vocal during tracking, but would overdub her lead vocals later. We probably spent six or seven months, off and on, recording just her vocals. She doesn't like to have many people in the room when she's recording vocals, so most of the time it'd be just her and me. At some stage, when it didn't make sense for me to come to Nashville, she'd work there with Neal Cappellino. She knows exactly what she is after, and would sing each song many times. I did a fair amount of comping, but the material would usually come from two or three takes that were done at the same time, when she got the groove and the feel of the vocals right, so it was pretty easy to comp the stuff. Once she hit the sweet spot, she was right there. Doing vocals with her is an amazing experience. It's very emotional, and the hairs at the back of my neck would often be standing up."

Game Changers

Moving on to the more technical aspects of the recordings, Shipley appears to have been remarkably single-minded in the equipment he recorded with. Enter a very select set of microphones, mic preamps, and what sounds like the mother >>

» of all A-D converters. Shipley: "We went for as natural a sound as possible with this record, wanting to simply enhance the sound of a collection of phenomenal players. A 24/96 resolution seemed to work well for that. I went for an old-school approach and didn't want to have too much stuff in the chains. The mic for the acoustic guitars, banjo, mandolin and Alison's violin was pretty much the same: Neumann KM54 with 1:3 stereo miking principle: for every one inch away from the instrument, the mics should be three inches apart to keep the stereo image. I knew that I wanted to have the acoustic instruments across the whole stereo spectrum and have lots of depth and feel, so I didn't want to have just a mono source. I had a [Neumann] U47 on the bass, and that did seem to capture the body of the sound very well. I had a [Neumann] U67 and a U49 on the Dobro, and a Sony C800G on Alison's voice, with cables of pure gold and silver that definitely changed the sound of the mic. All mics went through my favourite stereo mic pre, Dave Hill's Crane Song STC8, then in most cases a [Gates] Sta-Level stereo compressor, and sometimes a Pultec EQ for a bit of presence. Finally, everything went into Pro Tools via the Black Lion TM192, which are modified Digidesign inputs that changed the perspective so much that Alison refused to work without them."

As this attention to detail suggests, Shipley is one of those who thinks that the quality of sound has gone backwards in the digital era. *Paper Airplane* is, apparently, to date, Shipley's most successful statement in combating this downward trend. An important element in achieving this was the help of a certain Danny McKinney of an LA company called **Requisite Audio**, which modifies, together with Black Lion Audio in Chicago, Digidesign's 192 and the new Avid HD I/O, and also supplied the silver and gold cabling. Shipley gives the lowdown...

"It's been hard for a long time to make good-sounding records. Pro Tools is the main workstation these days, and the problem has always been the converter situation. Mutt [Lange] has for a long time been



Most of the acoustic instruments on the album were tracked using spaced pairs of Neumann KM54 small-diaphragm condenser mics.

dissatisfied with the sound of digital, and so he contacted Black Lion and Danny to make converters that would interface with Pro Tools, but that would not have the Pro Tools sound. Black Lion and Danny kept saying that it couldn't be done, but Mutt kept pushing them and they kept revamping 192s. Two years later, they finally came up with the FM192 [FM stands for 'fully modified'], and it gave such a depth of warmth and feel to the sound, without that harsh mid-range frequency build-up that you normally get with Pro Tools, that it became a game-changer for me.

"There's also a new clock in the FM192, and they spent a long time on R&D and it made a massive difference. We A/B'ed it against the regular Pro Tools 192 with Alison and her band present, and it's a situation where everyone is ready to tear you down. But the whole band was blown away by the sound coming from the digital system. They've all been around for a long time and they recall the sound

of analogue, and they've all been very frustrated in having to deal with Pro Tools. The new converters were a game-changer for them too, especially for Alison, who felt that she finally could get the body and presence in her vocal that she likes, without it sounding harsh. It was a really big thing for her, and after hearing them she refused to work without them. It changed her perspective so much that she redid the vocals that had already been recorded with regular 192s.

"We really made a point with this record, with regards to the sound of it, and we used the FM192s for the entire recording and mixing process, and also took special care with the mastering, keeping it really old-school. It's why Danny built a cable of pure gold and silver for Alison's

C800, which really opened up the sound of that microphone. Cables, and especially microphone and power cables, make a huge difference, and so we had them custom-built by Danny. Mutt and I have always tried to make things sound better, and a while back Mutt asked Danny and I to put together the best monitoring system possible. Mutt's got millions of speakers — he buys everything that comes out — but has always been dissatisfied with them. So Danny and I took one-and-a-half years to put a system together, with Danny again making silver and gold cables. The system is magnificent, it's a four-way system that's partly digital and partly analogue and I have a copy of it in my own studio in Los Angeles."

A Different Kind Of Sound

Mike Shipley: "I mixed the entire album at House Of Blues studios, apart from two tracks that I brought back to my own place here in Los Angeles and mixed mostly in the »

The **Requisite Audio** FM192 is an audiophile reworking of Avid's HD interface, prompted by the wishes of Shipley and 'Mutt' Lange.



» box. My studio is basically a digital studio, with Pro Tools and an Icon desk, plus an bunch of old E-series Cadac mic pres — all the big studios in the '70s had Cadac mic pres, they were as common as Neves at the time. I mixed the album mostly by myself, with only Alison occasionally coming in. She preferred to leave the mixing up to me, because she wanted to have a different kind of sound than what she had for a long time.

"These mixes were a lot of fun for me, because I got to experiment with acoustic instruments, which is very different than working with drums bashing away and stuff. There was a lot more space. The biggest thing in the mixes was how Alison's vocal sat with the instruments. That was the key. My approach was to first work on the instrumental sounds, make sure I had the imaging right, and then bring in Alison's vocal. The stereo mics allowed me to have full control of how big each instrument would be in the mix. With 'Paper Airplane', the instruments remain more or less the same throughout the song, so mixing was a matter of where in the stereo image to put things and getting a good balance and separation. The single acoustic guitar that opens the track sounds like it is panned hard left, but I panned only the body to the left, and the mic that was picking up the finger noises is panned centre. The second acoustic guitar, which comes in later, is panned on the right in exact mirror image. I spent a lot of time trying to find spaces by panning things. The exact placement of the acoustics, the banjo and the Dobro, and



Shipley with Alison Krauss at House Of Blues Studios during the making of *Paper Airplane*.

how big they sounded, was the key to a lot of these songs.

"I have to say that I had already done a lot of the mixing during the recordings. Every evening after the band had gone home, I would be tweaking everything, experimenting with panning positions and balances and so on. During mixing I kept all those things pretty much the way they were in the rough mixes. Nonetheless, the mix of 'Paper Airplane' probably took a couple of days, because I applied a lot of volume automation on Alison's vocals, which alone probably took a day! I then carved all the instrument levels to sit around

her voice, again using volume automation. When looking at the screenshots, you'll find it surprising how much stuff is on there, in terms of volume automation, and also plug-ins. Once I had gotten the instruments to sound as natural as possible, I did need to manipulate them with certain plug-ins during the mix. I'm big on automating compressor thresholds, for example, so certain instruments would speak properly at certain points and be more contained at other moments in the song."

Bass: Waves C4, URS Console Strip Pro.

"You can see two bass tracks on the screen grab, the mic and the DI. I didn't use the DI track. There are two plug-ins on the bass mic track, the Waves C4 and the URS Console Strip Pro. The C4 is a multi-band compressor that allows you to automate the threshold and the frequencies you want to affect, so if there's boom on a certain frequency on a certain note, or one note is too soft, you can correct that. Barry [Bales] was moving around quite a bit while playing his upright, changing the distance from the 47 with which I recorded him, and the C4 helped to even things out. I used the Strip Pro also as a compressor. It was modelled on half a dozen compressors I have in my studio, so when I'm not there, I tend to use a model of one of my Sta Level compressors or my RCA BA6A. I didn't use outboard compressors on the bass."

Mandolin: Massey L2007, SSL EQ, Crane Song STC8.

"The two mandolin tracks are the recordings of the stereo mic on one mandolin. The

Towards Sonic Excellence

In Mike Shipley's opinion, there's a lack of care for sonic quality in today's records, and studios. It's a subject that's close to his heart, as is in evidence in the main article. Shipley is enthusiastic about Danny McKinney, whom he feels is one of the few providing a genuine antidote. McKinney's company, **Requisite Audio** (www.requisiteaudio.com), produce mic preamps, a mastering limiter, the FM192 (see main text), monitors, power supplies and audio cables, and also collaborate with the high-end audio company RAAL in the building of one of the strangest ever home loudspeakers (www.raal-requisite.com).

Mike Shipley: "Studios and their customers are not as smart today as they used to be, because they simply use the tools that they are given. People have blinkers on. They walk in and start recording on Pro Tools, without comparing or really thinking about sound quality. There even are record companies that make people sign contracts that say that when you mix for them, you are not allowed to mix on an analogue

console, you can only mix in the box. So you have people sitting behind these big SSL consoles working only with a small Pro Tools controller on top. And I get sick of being given 150 tracks and everything just sounds the same.

"The recording market is very dumbed-down in terms of what people will accept, and the only people who really care about sound these days are the high-end audio folk. Danny McKinney comes from a place of building extremely high end compressors and tube amplifiers, and has very unusual and strong ideas about the way equipment has gone down in quality over the decades. He has completely reinvigorated me audio-wise, because he is very like-minded, and he will go to extraordinary lengths to create better-sounding audio. He speaks from a completely different idea-set than most people in the business. His theories are correct, they're old-school and they are about making things sound the way they used to, which is big, fat and warm."

» L2007 is the Massey mastering compressor. It is a very good compressor, and believe it or not, I like using it on individual instruments, rather than the entire mix. I also used some board EQ, from the SSL 9000 J-series at House Of Blues, and ran the mandolin through the outboard Crane Song STC8. There's a quite a lot of volume automation in Pro Tools in the mandolin, to work it around Alison's voice. I do rides in Pro Tools for very detailed work, and the more intuitive fader moves on the board."

Acoustic guitar: Universal Audio LA2A, Pultec EQ1P, Crane Song STC8, SSL EQ, URS Console Strip Pro.

"There are two stereo acoustic guitar tracks, with one guitar part played by Ron [Block] and another guitar part played by Dan [Tyminski]. I had the UAD LA2A on Dan — I like the Universal Audio bundle a lot. There would also have been a Pultec EQP1 outboard EQ and again the STC8 and a bit of SSL desk EQ. I applied the same things on Ron's guitar, as well as the Console Strip Pro for some compression. Any volume moves would have been done on the board."

Dobro: Massey CT4, UA LA2A & EMT 140, Waves MetaFlanger, AMS delay, Sound Toys Echo Boy, SSL EQ.

"There are eight Dobro tracks in total. There were several overdubs for sections and Jerry also did some long-note stuff and solos, and doubled things, or he would play different passes for different parts. I had the Massey CT4 on one of the more important Dobro parts, and it works great. The CT4 allows me to automate and ride the threshold, and this is very handy, because you may need one section to be as dynamic as possible and another section fairly compressed. I had the UAD LA2A on a different Dobro part. In addition, the Aux3 track [19] with the MetaFlanger added reverb and delay to some of the Dobro parts. The

Dobro was the only instrument that had those effects. I had an outboard AMS eighth note ping-pong delay that I sent to the Aux3 track, and the MetaFlanger added an interesting stereo effect to it. You can hear it, for example, on the long Dobro notes in the beginning of the song. I also had an UAD EMT 140 plate emulation on the Dobro, using the Aux1 track further down. I really like that effect. I didn't have a plate reverb in the studio that I liked, and neither did the stone room work well on the Dobro, so I settled for the EMT 140 plug-in, with a little bit of Echo Boy thrown in, via track Aux2, just below Aux1. The rest would have been out of the box, riding the desk faders and using SSL EQ. There are also a couple of tracks of pedal steel guitar, but I didn't treat that at all."

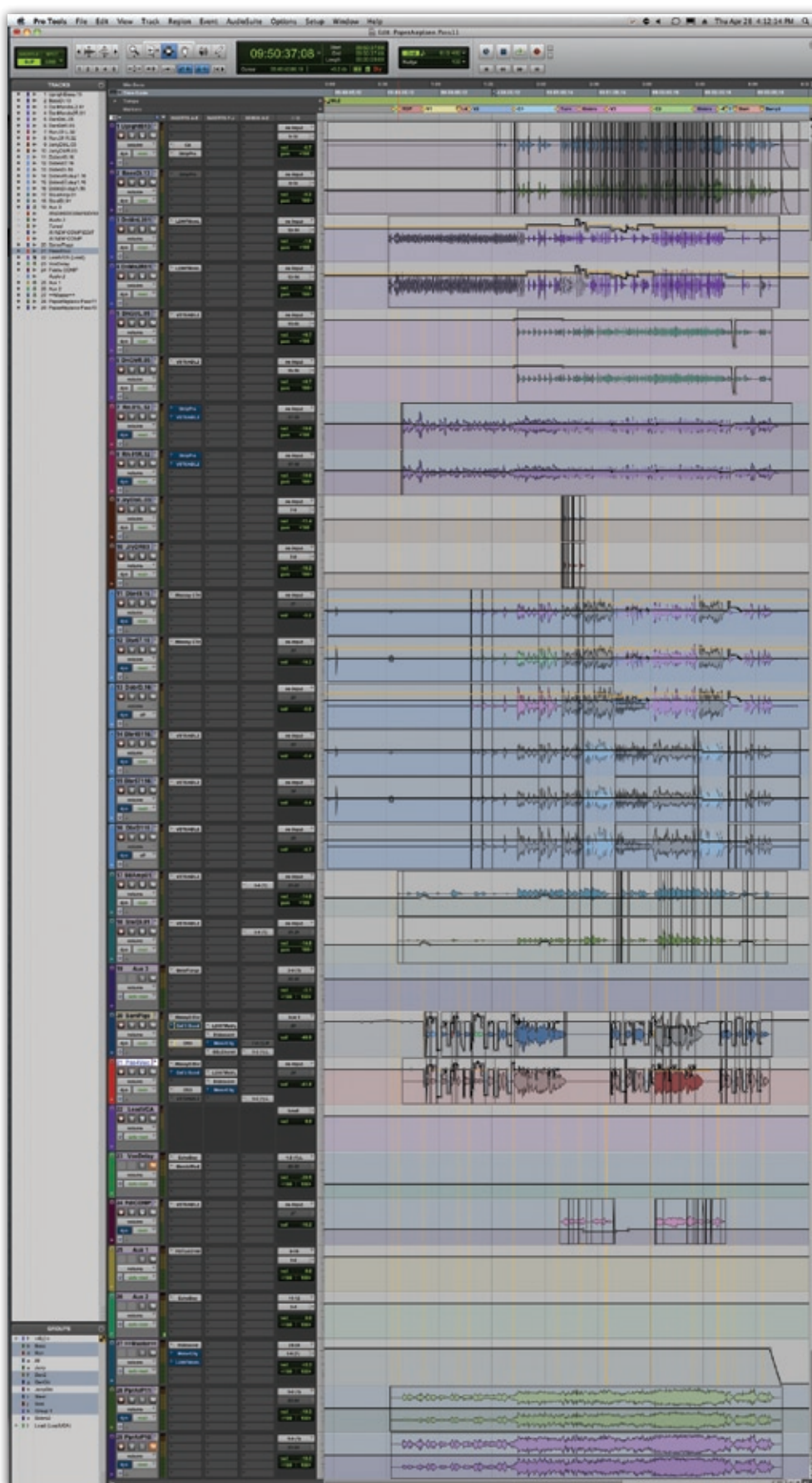
Vocals: Massey De-esser & L2007, Crane Song Phoenix, URS Motorcity EQ, Sonnox Oxford EQ, Sound Toys Echo Boy, Waves MondoMod, SSL EQ, Universal Audio EMT 140.

"Tracks 20 and 21 are the two vocal tracks. Alison sang the song quite a number of times, and by the looks of it, two passes remain, each covering different sections of the song. There are enormous amounts of effects on her vocals, although it doesn't mean that I used all of them at the same time. I tried a lot of things on her voice

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The control room at House Of Blues, looking through to the live area beyond.





» to try to get it the way I wanted it, and there are effects that pop in and out just for a word or a phrase. I used the Massey de-esser and the Dave Hill Crane Song [Phoenix] Iridescent, which is an awesome plug-in for shaping the body of a sound. It was very handy to have that in the box, so I could have a lot of control over it.

"I again used the Massey L2007 in certain spots. I'm probably going to get a lot of grief from people using it on instruments, but it's a good compressor that works fantastic and doesn't change the sound. The DS3 plug-in is another EQ that allows me to write in certain frequencies just for certain words. The URS Motorcity is one of my favourite EQ plug-ins. It's a copy of an old Motown EQ, and it's very smooth and beautiful sounding. I needed a little bit for shaping the top end and taking the boom out of a couple of words here and there. I used the Oxford three-band EQ to isolate certain frequencies with a very fine EQ, yanking them out at moments when Alison's voice might have sounded a little harsh. I didn't use any outboard on the vocals. I tried every outboard compressor in the studio, but it worked better with automated plug-in compression.

"Of course I did do some rides on the board, but as you can see on the screenshot, there's a lot of volume automation in Pro Tools. As I mentioned, most of all that was a matter of trimming, taking things out between words. Alison sings very quietly, and the C800 can be a noisy microphone, and quite often there would be noises in the spaces in between when she was singing, so I used volume rides to take out all that stuff, and also take out some of the breaths and esses. We spent a long time making sure that the cuts were not too abrupt and

This composite screen capture shows the complete Pro Tools Session for 'Paper Airplane'. Note Mike Shipley's extensive use of automation. The two stereo tracks at the bottom are mixdowns recorded back into Pro Tools.



The large live area at House Of Blues.

sounded musical, for example by cutting on the beat of a bar. In addition to all the above, I had a separate track [*VoxDelay*, 23], with the Sound Toys Echo Boy and Waves MondoMod plug-ins. I only used these subtly, for certain parts of the song where it would be nice to hear something moving in the background around her voice. The MondoMod kept that echo moving around in the stereo image.

"There's also a fiddle track. She didn't play much fiddle on this record, and in this song I didn't do much to it, just a bit of SSL board EQ, and I automated the pan. Below the fiddle track are the Aux1 and Aux2 effect tracks with the 140 and Echo Boy, which were mainly for the Dobro, but I also used them on the occasional vocal line."

Final mix: Crane Song Phoenix.

"I mixed back into Pro Tools, so this was a tapeless record! I was totally fine with this, because we were using the Black Lion FM192s. You can see two mixes, 10 and 11, in the screenshot. They were the same mixes, with slightly different vocal levels for certain lines. Track 27 is the Master for these mixdowns, and I again used a few plug-ins on that, including the [*Phoenix*] Iridescent, which subtly added some glue to the whole mix. I didn't use the Motorcity, nor the L2007. There was no stereo compression on the mix. I didn't even use the SSL compressor. I tried putting the mix through a Quad compressor, and some other compressors, but it just didn't sound right. It did something weird to the bottom end. Nothing that I tried on the stereo bus worked, compression-wise, so I left the mix as open as I could.

"We really wanted this record to

sound as dynamic and full and warm as possible, and keep that extra bottom octave that goes when you crush everything, and this attitude, of course, also extended to the mastering, which was done by Brad Blackwood of Euphonic Masters in Memphis, TN. He pretty much masters all my stuff these days, because I don't want to work with the trendy loudness-war guys. It's really hard these days to make good-sounding records. It's a constant battle with the labels who want to micro-manage everything, and it's a battle that I hate, because there are a few records that I did recently that were destroyed by the mastering.

"With the record I did before this, with Mutt, we had spent a lot of time on getting the dynamics and the bottom end right, and we ended up with a record that we were all proud of, and then we got the mastered version back and it was awful. We actually tried to recall the record, but the label refused. Our complaint fell on deaf ears, so to speak. It is almost too painful to talk about how many records these days get annihilated in the mastering process. It's a sad fact. But with Alison's record we had full control over everything, from the recording stage to the mastering process, and we're very proud of how it came out. Nobody has complained that it's not loud enough. Instead we get feedback from people saying how much they enjoy the dynamics and the sound."

Anyone with musical ears who hears *Paper Airplane* will concur. Perhaps a look at the album's commercial success will also re-open some less musical ears... **///**

SOUND ON SOUND

The World's Best Recording Technology Magazine

This article was originally published in
Sound On Sound magazine, **July 2011 edition**.



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