

The making of Long Time Coming by Zoe Gallant.

Overall Project Data

Desk	Soundtracs Jade S / Digidesign Pro Control.
Recorder	Digidesign Protools HD3 / Mac Pro
Converters	Digidesign 192 I/O running at 24bit 96khz
Monitoring	Monitor Audio GS10 / Genelec 1038A

We recorded the overall project in four stages drums and bass were recorded in the first session along with guide keys and vocal, following this all the main piano and keyboard parts. The last part being vocals, in between these key areas we also covered all additional production overdubs and additions like percussion, strings and backing vocals. Our key aim for this project was to achieve a great live feel to the recording with a slightly more than subtle pop/modern sound. Our aim with this was to match the already dynamic live feel and performance from the band with an up close and personal recording style to help bring all elements to fore without compromising the feel generated at one of their live performances.

Part 1 of the process was recorded over three days with day 1 being initial setup, this was predominantly drums based with various combinations of microphones and placement of microphones being tried out to develop and record the best acoustic sound possible. This is defiantly one of the most critical parts of recording any live drummer. The combination of a great drum kit with the correct tuning and the drummers chosen type of drum skins can have so many variations. For this project we maintained a fairly closely proximity of microphone to drum as we were aiming to achieve a very intimate sound for the drums (See table 1). For me this is one of the main areas in the recording process that is always worth spending as much time as reasonably possible on and more so when using multiple close microphones (to minimise any phase issues).

The bass guitar was fairly straightforward to record in this process, as again we were aiming to record a clean and true sound so for this we only recorded a direct sound with no bass power amplifier. Rob's Fender Jazz bass was plugged directly into one of our Avalon U5 Mono Instrument & DI Preamp boxes. This unit matches perfectly the line level output from the bass to the balanced microphone input of the preamp. This unit features various tone options again these were left flat. From the Avalon the signal was fed into a Focusrite ISA430 MKii channel strip. The ISA was used for its supreme pre-amp and compressor again no equalisation but a touch more compression to help fatten up the low end and gently even out the big low end range of this instrument. From here the digital AES output of the ISA was used to again feed the digital inputs of the digidesign 192 i.o's.

The guitar parts with Al were recorded using the following setup his amplifier was mic'ed with a single Neumann U87 condenser and a Sennheiser MD 421 dynamic. The U87 was positioned dead centre to the amp and approx 12" from the cone with the MD421 being positioned towards the edge of the amplifiers cone touching the front of the grille cloth. Both microphones we run through the Jade's pre amps with no EQ. The U87 had a dBx 160 tube compressor inserted across its input to help fatten up the recorded feed whilst the MD421 used one of the Jade's internal digital compressors to tighten up this very direct feed. Al was positioned in the area between the live room and control room so as to be in direct line of sight with the others whilst achieving complete separation from the other instruments.

For these initial recording we used a digital piano for Zoe to record the guide parts.

The 2nd and 3rd days were spent recording all of the songs with an average of two or three takes per song being recorded giving us various options on performance to choose from. Apart from a couple of minor bass repairs all of the album tracks are comprised of these takes.

Part 2 covered a further day where we recorded the percussion and string parts; Rob had preprogrammed these at home for importing into the relevant songs, new sounds were assigned from the studios string library. Marks percussion parts were all very straight forward and added some great dynamics to the songs they feature on. This period was also used to record Zoes electric keyboard parts using the studios original Fender Rhodes Mark 1 88 key stage piano (approx 1976-79), this was DI'ed using one of our Avalon U5 direct preamps (DI box) straight to pro-tools.

Part 3 recording the piano parts was done over two days with Zoe, our Yamaha C6 grand piano was mic'ed as in the pictures with our matched DPA 3521's positioned approx 12" above the hammers angled slightly away from the player towards the middle of the sound board in a traditional X-Y configuration. We have found that this position allows us to maintain a great stereo image across the keys whilst capturing an overall tonal balance.



The Neumann U87 was again as per the image positioned in the cut-out approx 2ft from the side of the piano again facing towards the centre of the soundboard, from this position we are able to record a great mono balance of the piano with good low end coverage this feed really helps in the final mix stage more on this latter.

The pianos lid was open fully for these recordings, all microphones were feed directly into three channels of our Focusrite Liquid 4pre's set to the following modelled pre-amps(Classic Brit). From here again they were fed directly into Protocols from the digital AES outputs into the 192 i/o's. Also recorded on the second of these two days were John Etheridges electric guitars. His amplifier was again located in between the studio and control room for separation but with John located in the live room with Zoe to get a good vibe between them for the performance. The mic and processing setup was exactly the same as Al's amp above.



Part 4 Zoe's vocals were again spread out over two days for the main bulk of recording with a further day for doubles, harmonies and fixes. The aim here again is to spread out the recording process so as to get the best performance from the singer without tiring whilst maintaining as sensible time frame for probably the most important part of the recording process.

For these recordings we used our Neumann M147 Tube microphone direct into the Focusrite ISA preamp passing this directly via AES digitally into Protocols. This setup was arranged in the main room with acoustic screens positioned to the rear and sides around Zoe to reduce and control the area around her. In front of the Neumann we used a pop screen to help reduce and pops and unwanted plosives when Zoe was up close to the mic. The microphone was positioned approx 6cm behind the pop shield. The pop shield not only helps control pops but also allows for positional referencing giving Zoe a marker for her quite sections when she needs to be right on the mark back to her general position (approx 6cm) from the screen for normal dynamic performance, and then slightly further back for any sections where her dynamic output would be greater.

The Focusrite ISA 430 mkii was again a key element in the recording process as it is perfectly suited for recording such a dynamic and intricate source such as a vocal. The pre-amp being the first stage beautifully matches the output from the Neuman M147 Tube into the ISA allowing us to set a great signal input. For this recording very basic equalisation was used in gentle low and high frequency roll off with some subtle low mid range shaping. Slightly greater compression was also used at this stage to help generate a really "UP CLOSE AND PERSONAL" feel to Zoe's voice. The above picture is a shot of the ISA's setting for this recording.



The room used for the recording of Part 1 was our main room with the drums at the opposite end to the piano. No acoustic screens were used to reduce room size, as we needed to capture some of the ambiance. Mark (drummer) was facing the piano to get good eye contact with Zoe and Rob (bass player) was situated in the middle of the drums and piano.

The mixing process.

Once all sections had been recorded and repairs, edits and versions have been chosen we consolidate the audio from each song down to just the required parts and export these into mix folders. Starting with a blank page we create a working template containing all the routing, effects, equalisation and dynamics that will be applied as a starting point to each song to help create an overall uniformity to the mix.

The first phase in how we tackle a project like this is to place each song into their templates and then mix a rough balance on all songs, this then allows us to appraise the overall project and decide if any further changes to the template need to be made to cover the project globally or whether we are ready to start focusing on each track individually.

Once we are happy with all of the above we then start to shape the mix on a track-by-track basis. Refining dynamic processing and EQ, looking at the effects and adjusting as required. Overall we only used very minimal effects with a standard reverb for the vocals which predominantly only varied in its physical room size. A drum reverb, which again once set within the template, only really changed with regards to the room size per track and finally a reverb dedicated to the piano/band. All of these reverbs were generated externally to Protools within out TC6000 reverb system, feeds too and from this device are all via AES digital connections running at 24bit 96k.

This reverb system in my opinion has one of the most natural reverb models I have ever heard the decay response particularly on low frequency sounds are excellent, whilst high end reproduction is like crystal, transparent and natural. Electric guitars utilised internal Protools effects for reverb and delays.

All dynamics and equalisation in this process were all a total "in the box solution" using a combination of the standard Protools equalisers and our WAVES SSL modelled plugins. We predominantly use the SLL G channel as this has a great sound to it and the compressor is great on most things. Other plugins used were as follows, SSL Master Bus Compressor, Waves C4 dynamic compressor, Bomb Factory compressors.

The drum treatment was pretty standard applying eq and dynamics to all channels as required, where multi microphones were used combinations of these were used to achieve the desired tone. For example the two microphones on the bass drum were both time aligned (approx 2.3m/sec delay was used on the internal microphone) and then equalised with the internal one having a slightly more clicky sound and the external one being used to add the weight to the low end of the bass drum. The two microphones were then grouped and again equalised and compressed overall to help settle them as a single source. This procedure was again applied to the snare drum microphones; this use of two sources really opens up the amount of tonal opportunities available allowing for really subtle changes as and when a track requires it.

The Bass required little further enhancement as the recorded source was as we wanted it a little further compression to help with balance placement and that was it. Again the guitars were also a very quick process with a little time alignment on the microphones followed by EQ and compression job done, again here the two tonal sources allowed for further blending options as we progressed through the songs.

The piano was also pretty close to being as required with the main stereo DPA pair providing the backbone to the image and sound with the mono Nuemann being used as required to provide overall low frequency tonal additions where required. We have found that this way of working allows us to capture the piano with a great left right image alongside a great low-end warmth and tonality. Again here with these three sources the combination of pan adjustment to the stereo pair with the specific addition of the mono source can allow us many options for the final position and effect in the stereo mix. Narrowing the width of the stereo pair with minimal addition of the mono can allow us to then pan the piano to specific position within the L-R whilst opening up the pan and adding more mono allows for more movement from the players hands whilst achieving a greater warmth and grounding to the low end imagery.

For the finishing of Zoe's vocal a little of the Waves dynamic compression was used via the C4 plugin to help smooth and dynamically control a couple of slightly edgy areas of Zoes vocal predominantly the 2.5kHz region which can get slightly aggressive in loud passages and then 240Hz which when she is up and close to the microphone can start to become slightly unnatural and extended. Once this compression was applied no further equalisation was used.

The signal path for all of our recordings is always as direct as possible and this session was no exception. All drum microphones were powered using the preamps within our analogue Soundtracs Jade S desk. Although the desk is now slightly older in years it still contains some truly awesome sounding low noise pre-amps designed by John Stadius from the then Soundtracs PLC company now digital live and studio desk manufacturer DIGICO (http://www.digico.biz/docs/latest_news/EkFZAlkpFyslWOPWrl.shtml). These were then routed direct into our digidesign 192 converters. Across some of the drums we used a combination of internal and external processing inserts as per table 2. Again all dynamic control at this stage was more towards tonal control and balance as opposed to aggressive dynamic control. Again at this stage no equalisation was used when recording any of the drums, all completely flat.

All musicians were using individual headphone monitoring from Hear Technologies. These units are fed direct to each pod via cat5 cables from the main controller in the studio. The system allows for direct digital or analogue connection from Protools.

Allowing each musician to have direct control over the balance of his or her own headphone mix allows for greater personal control and also lessens the burden on the session engineer.

These pods were fed the following combinations direct from Protools (DRUMS (stereo) / BASS / PIANO / VOCAL and TALKBACK).The pods then fed into either Sennheiser HD 280 pro headphones or HD25 SP II headphones. Pictured here is one of the pods alongside the vocal microphone setup:



	Instrument	Microphone	Placement
1	Bass Drum External	Audix D6 Dynamic	In front of front skin
2	Bass Drum Internal	Sennheiser E901 Condenser	Inside 10cm from batter skin
3	Snare Drum Top	Sennheiser MKH 8050 Condenser	4cm above top skin
4	Snare Drum Bottom	Sennheiser E904 Dynamic	6cm below bottom skin
5	Hi Hats	Sennheiser MKH 8050 Condenser	6cm above edge of hi hats
6	Rack Tom 1	Audix Micro D	4cm above top skin
7	Rack Tom 2	Audix Micro D	4cm above top skin
8	Floor Tom 1	Audix Micro D	6cm above top skin
9	Ride Cymbal	DPA 4060 Micro Condenser	2cm under Cymbals Bell
10	Over Head Left	Neumann U87 Condenser	3 mtrs above left side
11	Over Head Right	Neumann U87 Condenser	3 mtrs above right side
12	Ambient Left	DPA 3521 Matched Condenser	4 mtrs above 4mtrs in front
13	Ambient Right	DPA 3521 Matched Condenser	4 mtrs above 4mtrs in front

	Instrument	Insert
1	Bass Drum External	dbX 160x analogue compressor
2	Bass Drum Internal	dbX 160x analogue compressor
3	Snare Drum Top	Drawmer analogue compressor
4	Snare Drum Bottom	Drawmer analogue compressor
5	Hi Hats	None
6	Rack Tom 1	Jade S internal digital compressor
7	Rack Tom 2	Jade S internal digital compressor
8	Floor Tom 1	Jade S internal digital compressor
9	Ride Cymbal	Jade S internal digital compressor
10	Over Head Left	None
11	Over Head Right	None
12	Ambient Left	TLA C1 tube compressor
13	Ambient Right	TLA C1 tube compressor

The musicians.

Mark Parnells Drum Kit

Yamaha Custom Studio Maple

22" Bass Drum, 12", 14" and 16" Tom Toms, Ludwig "Black Beauty" Snare drum. Sabian ping 20" Ride Cymbal and 18" Crash Ride with Zildjian 14" Crash. Custom 14" Sabian Hi-Hats.

Rob's Bass Guitar

1965 Fender Jazz Bass, originally fretted now fretless.

Al's Guitar Setup

90's Gibson 335 and Fender 'Hot Rod' Deluxe

John Etheridge's Guitar Setup

Puerto Rico : 1950's Gibson Super 400 Fender 'Hot Rod' Deluxe

Tonight With You : Martyn Booth Signature Series amp as above

Zoe's Piano / Keys

Yamaha C6 Grand Piano, Fender Rhodes Mark 1.

Useful links.

<http://www.monitoraudio.com>

http://www.sennheiser.co.uk/uk/home_en.nsf/root/professional_wired-microphones

<http://www.neumann.com/?id=2&lang=en>

<http://www.dpamicrophones.com/en/Products.aspx>

<http://www.heartechnologies.com/hb/hearbacksystem.htm>

<http://www.tlaudio.co.uk/>

<http://www.avalondesign.com/instrudi.html>

http://www.focusrite.com/products/isa/isa430_mkii/

<http://www.waves.com>

<http://www.digidesign.com>