

# Recording Sessions in The Menuhin Hall

*John Willett MIBS describes his approach to making a location recording of a piano recital for CD release.*



Richard at the piano with the Sennheiser and Neumann mic arrays side by side

I was asked recently to record a series of CDs for the concert pianist, Richard Meyrick. I have recorded Richard many times over the years and was very happy to be asked to do this major project for him. The plan is to produce four different CDs with an initial run of about 3,000 of each title. Richard is in the middle of his 'Piano Man' project which involves him going to schools all over the country and giving a Masterclass followed by a recital in the evening – the CDs are to be used as part of this project.

The recording is sponsored by The Man Group and Blüthner pianos, so our hands were not tied to get a good sound!

## Location, Location, Location

The first job was to find a suitable venue; not so easy, as there aren't many locations with a suitable acoustic that are also available and free from traffic noise and the like.

My first thought was a church down in Rusthall in Kent that I had used before with success – however, they had spent the money they got from earlier recordings not on double-glazing as we had all hoped, but on carpeting the church – thus ruining it as a recording venue. The next choice was a church in the south of England that had a good recording acoustic – but at the time we wanted to record, they were building a house next door; so, although this will be a good venue for future projects, it was too risky to use while the building work was going on.

The recording venue we finally chose was The Menuhin Hall in the Yehudi Menuhin School in Stoke d'Abernon. This is a superb building with a great sound, and it is totally isolated from outside noise with a perfect cable route from the stage to the Green Room. The latter is where we set up the recording equipment and it is isolated from the main stage by a corridor and piano store in the wings. The cable route is via special tubes through the walls which can be blocked with beanbags once the cables are in. Not a cheap venue, but well worth the expense as there are no interruptions due to external noise.

## Microphone Selection

I normally use Sennheiser MKH 20s to record a grand piano; however, in November last year I went over to Neumann in Berlin to be shown a new range of KM-D digital microphones. Initially, the idea of a digital microphone held little appeal, but I was forgetting about all the headroom that has to be provided when using analogue microphones: headroom in the microphone pre-amplifier (and the additional noise in the analogue circuit) and the headroom you have to allow in the A-D converter. These two added together mean there is typically about a 25dB reduction in the potential signal-to-noise ratio – so, a 130dB dynamic range gets reduced, in effect, to about only 105dB. That was point number one that made me sit up and listen.

The A-D stage in the Neumann Solution-D series microphones is a patented design

providing true 28-bit conversion. This is sufficient to capture the full dynamic range of the microphone, and can then be optimised to output a 24-bit signal in the AES42 format. Neumann RCS software running on a laptop is used to control the microphones via a Neumann DMI-2 interface, which provides the microphone powering and converts the signal to a standard AES3 digital output. At the time of recording this was the only way of connecting the KM-D microphones, but at the AES in Vienna this year, RME announced an eight-channel AES42 interface that will be available at the end of the year, and that should make things easier for any future multi-mic sessions.

The digital signal can be manipulated in the microphone via the RCS software to adjust the level, add compression, pre-attenuation, and even switch the microphone's power light on and off or change its brightness. Perhaps the most important and convincing point is the inclusion of a limiter to prevent overload. Demonstrations on a microphone with this switched on and off made clear just how effective this limiter is. With the limiter functioning, there was no distortion at all; the sound simply didn't get any louder, which is great for handling transients that would normally distort the recording and require a retake (especially with a piano).

So for these reasons I immediately put my money on the table and bought my own pair of KM 183-D omnidirectional microphones. As these are balanced for

diffuse-field applications, and therefore have a rising HF response, I have also put my name on the list for the new KK 131-D flat-omni (nearfield) capsules.

AES42 signals can only travel about 10 metres along my normal star-quad microphone cable, so I went along to Canford Audio and got them to make me some proper 110 Ohm balanced cables, terminated with the new Neutrik EMC XLR connectors (yes, I know - I'm lazy, and I am not proficient with lead-free solder yet). AES42 at 24/96 can travel about 200 metres along these cables, which is far more practical.

## Rigging

The microphones were set up as shown in the photograph. As mentioned above, the KM 183-D is a diffuse-field omni, but I wanted to place the mics in the near-field, only about a couple of metres from the piano. Anyone who has seen a polar-pattern of an omni microphone knows how the high frequencies are attenuated off-axis due to the physical size of the microphone, so to reduce the influence of the built-in HF lift I started by placing the 183-Ds at about 45 degrees. Auditioning this configuration revealed that the mics were still a bit too bright, so I turned them through 90 degrees to place them vertical. In this position the frequency response was ruler flat and the piano sounded great. As this was my first outing with the KM-D series, I also made a simultaneous parallel recording with a pair of MKH 20s as I normally would, as a failsafe backup. They were pointed directly at the piano as they have a flat response head on.

The two KM 183-Ds were connected to the DMI-2 interface which clocked both mics to the required 96kHz sample rate. I dialled in a digital gain of 25dB which produced an absolute maximum peak of about -4dBFS, and so I didn't actually need the built-in mic limiter, and no compression was applied at all.

The output of the DMI-2 was fed to an AES splitter feeding a Fostex FR-2 machine for the main recording at 24/96, as well as an Audio & Design ProBox 10 sample rate converter. This down-converted to 16/44.1 to feed an old Fostex D-10 DAT machine as a safety backup. The MKH 20s were amplified and converted to digits using an Audio & Design DMA2 24/96 digital microphone pre-amplifier, and its output was routed to a second FR-2 machine, kindly loaned by SCV London for the recording.

Monitoring was via a Grace m902 headphone amp feeding Sennheiser HD 650

headphones, along with a pair of Klein+Hummel O110D active monitors. Talkback was via a custom unit I made myself many years ago, and this also controlled the red lights. In addition to the Fostex machine's metering, I also used 'The Box' to monitor the stereo soundstage imaging.

## The Sessions

The first recording session occupied five consecutive days just before Christmas 2006, and the sessions went extremely well with the KM-D microphones behaving flawlessly - and everyone was delighted with the results.

The KM-D microphones are so quiet that we had no background noise 'clue' when we were playing takes back. We kept thinking something was wrong, as every time we started to play back a take we couldn't hear anything - until the music started. They are amazingly quiet mics! The other thing to mention is that the sound of the microphones is the sound of the capsules with nothing added and nothing taken away. Once we had tamed the top end by angling the microphones correctly, everything was wonderful.

My philosophy when recording is always to let the musician perform; adrenaline running and playing his/her heart out. So I always start with a take of the complete piece, often followed by a second take of the complete piece. Only then, if there are still some mistakes will we take smaller sections. I always like to keep these covering takes as long as possible to get the musician in performance mode again, although sometimes this is not possible.

Once the recording is completed, we choose the best performance as the master take and edit the corrections into this, trying to keep the soul of the performance as much as possible.

For this project, one of the pieces we recorded was just about the most difficult piano piece ever written: Ravel's *Gaspard de la Nuit*. That ended up being a bit more of a knitting exercise than the others, but equally one piece was captured in a single take, and most only needed one or two edits.

I find keeping the performance in mind is absolutely vital - it seems many commercial recordings are note perfect, but because these are compiled from many short takes, the bored musician is just playing notes rather than music. This sort of CD will be listened to once and put on the shelf never to be listened to again. I certainly don't want that happening to any CD that I record!

## Editing

A few weeks after the recording session, early this year, I spent a weekend with Richard editing the material using Samplitude9 on the PC. I find this to be an excellent program, although I would prefer Sequoia (Samplitude's big brother) as it has much better cross-fade editing - but it's three times the price. In any case, Samplitude9 has superb CD burning facilities built-in, with full CD text and ISRC code settings.

In all, we spent about twenty hours editing over a weekend and the pianist and sponsors were absolutely

delighted with the results. A second recording session was arranged for just before Easter, with exactly the same setup as before, and after a further four days of recording and two more days of editing we now have all the finished tracks for the first two CDs. I then spent a further day compiling the two discs, *Richard Meyrick plays CHOPIN* and *Richard Meyrick plays BEETHOVEN*, and sent them to Richard and the sponsors to approve.

I did not compress the recording at all, or even change the levels - it ended up being exactly as recorded; just edited. I listened to the CDs in the car as well as at home (Myriad CD and Harbeth Monitor 30s) and I am delighted that everything holds up very well. Too many modern CDs seem to have the life



The RCS software control screen for configuring the KM-D digital microphone

compressed out of them and I wanted these to have the dynamic range of the performance if at all possible.

Richard Meyrick has been on the phone to me subsequently, absolutely delighted with the results - although he has asked me to make a minor change as I got a CD track number in the wrong place for a change of movement in one piece. Other than that, these first two CDs will be pressed in the

next few weeks.

I have another four-day session booked in The Menuhin Hall for early July, and a further few days a little later for the next two discs. We have already recorded some tracks for these in the previous sessions, but these further sessions will complete all the tracks required.

### Which Mics?

If you were wondering if we used the MKH20s or the KM 183-D for the release, the answer is the Neumann digital mics. It wasn't that the MKH 20s weren't good, but the KM-D mics seemed the best one in this situation.

I don't spend my own money lightly, probably something to do with my Scottish great-grandmother, and I certainly have no regrets in doing it this time. Including the DMI-2 interface, a pair of KM 183-Ds works out at about the same price as any top class omni microphones (slightly cheaper than a pair of Sennheiser MKH 20s) - but when you factor in that you don't need a high quality two channel microphone preamplifier, or a decent A-D converter (or even a limiter / compressor), then they are actually very cost-effective indeed.

Richard has decided that once we have completed these four CDs he wants to go back to Menuhin Hall and record a further CD - this time using their Steinway. Perhaps for that session I'll be able to give the new Sennheiser MKH 8020 omnis a run...

**ibs**



The control room set up. The Box stereo image monitor is on top of the left K+H loudspeaker