

The CCRMA Recording Sessions

This introduction to recording studio practices is intended to explain some of the procedures involved in an actual recording session. What goes on is dependent on the overall goal of the recording: a live or demo recording may be different from a tracking session for a CD or album release. Most of the time, a demo recording is intended to convey either a song or a musical group to prospective consumers (clubs, radio stations, friends, etc.) and as such should closely resemble the actual live sound of the group. For commercial releases, most often the recording is approached with a desire for perfection which may be achievable only in the studio by using overdubbing and time-consuming editing and bouncing of tracks. How we set up and proceed depends on what we are trying to accomplish.

For recordings intended for commercial release, it is usually preferable to get the drums recorded first, assuming that we are talking about rock/pop music. If there are no drums or percussion instruments involved (and often if there are), we will want to assure that the musicians are able to keep constant timing. This is done by means of a click track: a fixed-tempo sound which is recorded on a spare track or played over headphones to the primary time-keeper or to the entire band. The click track is usually generated by a drum machine or metronome and requires that everyone agree on the proper tempo for the song beforehand. It is fed to the musicians via one of the cue sends so that it can be mixed with whatever else the musicians are hearing as they record. To connect the drum machine in the CCRMA control room, it is patched through the auxiliary patchbay TRS inputs. (To match level and eliminate hum, it is necessary to go through one of the balancing boxes [sometimes called “bump” boxes].)

As far as set-up goes, I start with the drums. Micing the drums depends on the size and composition of the set. In most every case, the kick and snare are miced, usually each tom is miced and I prefer to use two overhead mics instead of separately micing each cymbal. Hi-hat can be miced separately, but it isn't often needed if the overhead mics (I prefer omnis) are placed properly. I think the fewer mics the better. I rarely use more than 6 mics on drums.

I like the N/D 868 and RE-20 (or MD-421) for kick and SM-57 (or Beta57) for snare. Toms work well with the MD-504 or MD-421. Floor tom can use RE-20 or MD-421. For overheads I prefer the C460s with the omni capsules. Each mic goes into the XLR patch box in the studio and thereby into the Mackie D8B corresponding input. Phantom power is turned on for condensor mics only after

everything is connected and before we turn up the faders.

The signal to tape goes direct out either to tape or to a compressor, which then goes to tape via a Mackie line input. I usually compress the kick and snare to tape, with about 3-5 dB compression max at around 2 or 3:1 ratio and threshold set to give that amount of peak compression. Avoid the peak limiter as it doesn't sound at all nice. Gates are better applied in mixdown lest you set the threshold too high and permanently lose some soft attacks. I avoid EQ until I ascertain that the mics are in the best possible position: this can take some time since small adjustments can have large sonic effects. Also, it's a good idea to monitor the drum mic setup in mono (you can do this by using the mono button in the control room section of the D8B), to be sure there aren't any mic interactions which will cause strange sounds when they are mixed together. Once the drums are set, it's time for the rest of the instruments.

At this point, things differ depending on whether we're overdubbing tracks or getting a live performance. For multitrack overdub productions, we record the other instruments simply to give the drummer the feel of the live performance; we will re-record all of the other tracks later and only concentrate on the drum sound at this point. For demo/live recordings, we will record the main rhythm instruments at the same time, taking some care to keep their levels low enough to prevent too much bleed into the drum mics as we record. This requires some baffles and careful placement of amps and instruments.

When we do a big production session, we record the instruments in the control room into the board without amps while we track the drums. It sounds especially wimpy for guitars, but we will eventually re-record them so we concentrate on timing and feel of the groove rather than the sound quality. The main stereo mix gives a relative balance of what the musicians want to hear, while we can add selected tracks to the monitor mix with cue sends that only the musicians hear while the control room monitor focuses on the stereo mix.

To get instruments into the recorder, we go through DI (direct injection) boxes that translate instrument level signals into mic level that then goes into the Mackie D8B mic preamps (or the Presonus) and direct-out to tape. For synthesizers, this works or you can use the active balancing boxes instead. Mics for singers can also be connected in the control room to give a rough vocal track. Instruments (via direct boxes) and mics in the control room are plugged into the "snake" that connects the Mackie inputs to the jack box which connects to the recording studio jack box. Don't try to plug anything directly into the D8B inputs...there isn't room on the back of the mixer.

The headphone feed back to the recording studio from the control room is sent via channel 15 to a 6-outlet TRS jack box in the studio. There are extension cables to allow the distribution of headphones to the musicians. Also, there is a powered speaker in the recording studio which is driven by the talk-back button in the patchbay rack. Remember, this is played out-loud in the recording studio, not just over the headphones. Also remember that the click will bleed from headphones into mics if it's too loud.

When we're dealing with a live session, the instruments are recorded either with direct boxes (bass and synths, especially), or through their amplifiers via microphones, or both. For guitar amps, the SM57 is a trustworthy starting point and the RE-20 or MD-421 is good for bass amplifiers. Brass instruments do well with the RE-20 or condensor mics like the C414 if you want a brighter (more metallic) sound. String instruments sound nice with a C414 in hypercardioid several feet from the instrument. (Try a little distance between the mic and the instrument if you want a more realistic sound.) You will find your favorite mics only after significant experimentation.

By carefully placing the amplifiers and drums in distant corners of the studio and by using baffles, we can establish a setup with minimal leakage and still allow for the musicians to see each other and play in some semblance of normality. The studio will always be different from a club gig and it may take some getting used to. It is up to the engineer (and producer if there is one) to be sure the musicians are comfortable and able to produce their best effort in an unfamiliar situation.

As you will see, the mixer and patchbay are the functional center of the recording setup. The main reverb (Lexicon 224) is not normalled and needs to be patched in for each session. Generally effects are not recorded to tape, but applied in mixdown and to the monitor mix while tracking so the effects are heard without going to tape.