

## Studio Exercise 1

We will take advantage of the Yamaha Disklavier digital player piano to try a couple of different ways of micing a piano. Since the Disklavier will play itself, we can concentrate on the placement and hook-up of the microphones. The first order of business is to familiarize yourself with the Mackie Digital Eight Bus (D8B) mixer by reading through the manual, pages 7-16. The Disklavier will play from internal memory, but that has been overwritten by people, so you should insert the Sample disk and let it load. You can then just push “play” or change the program with the Song Select buttons. (The controls are on the small box at the lower right below the keyboard: the on/off button is on the left of the control box.) You can also change the tempo and volume if you wish.

To record CD-Rs, you will need to read the Tascam CD-RW700 manual to acquaint yourself with its operation. The CD recorder is connected to the digital output of the mixing board (through the L2 limiter which should be on but bypassed for this exercise). The CD recorder’s outputs can be monitored through the “Digital 2” input to the D8B. The input setting on the CD recorder should be “coaxial” in order for it to be properly connected to the mixer. The Direct Digital button should be pushed so the digital signal is written directly to the CD, bypassing the volume control of the CD recorder and using the D8B volume control to set the level. [The red LEDs on the D8B stereo meter should not light to avoid distorting the output.] You can monitor the input signal through the burner even without a CD-R in the machine by pushing the “Monitor” button on the remote control or by pushing “Record” on the CD-RW700 front panel. Recording is initiated with the Record button and ended with the Stop button. After recording is stopped, the machine takes some time to write a new entry in the temporary table of contents before it can record another track. The track number is automatically advanced after each recording. If you use a CD-R, it must be finalized after you are finished recording in order to play back on a CD player. This is accomplished by pushing the Final button. CD-RWs may be used and these can be un-finalized and erased or added to later. CD-Rs cannot be unfinalized but cost less.

Connection to the mixer’s microphone inputs is made through the patch box on the floor: the larger box leading to the Mackie Digital 8-bus (D8B) microphone inputs 1-12 and the smaller box leading to the Presonus M80 preamps, which connect (“normalled” through the patch bay) to line inputs 13-20 on the D8B. We will start by connecting to the D8B directly, using inputs 1-12. Start by finding the two Audio-Technica AT-4049 condenser microphones. Our microphones all have adapters to attach them to mic stands: we use quick-disconnect adapters that eliminate the need to thread the mic clips to the stands. Do not disconnect the adapters from the stands or the clips! The adapters are removed by simply depressing the little button on the side of the adapter and sliding the mic and stand apart. Keep the clips/adapters with the microphone.

The AT-4049 microphones are condenser mics that require phantom power to operate. Phantom power is available on the back of the D8B, switched on and off by little push-button switches mounted over the corresponding mic inputs on the back of the mixer. Since phantom power

applies 48 V DC directly to the mic, it is important to turn the power on and off only when the channel fader and gain trim knob are turned down. It is best to connect the mics and cables before turning on the phantom power. Once the mics are connected and the phantom power is turned on, you can turn up the gain trim knob, starting about half way. Then turn up the fader on that channel and be sure the “assign” LED is on. With the master fader up, “mix” selected, and the speaker volume control up you should hear sound now. With the channel faders at the “nominal” 0 dB position, use the trim pots to adjust the preamp gain to produce an acceptable level.

Now it’s time to experiment with a couple of different ways of micing a piano. Page 73 of the Huber Microphone Manual describes several potential ways of placing microphones on a piano. Try a couple of these and any others that might seem interesting. Record a short sample of each to CD and write a short description of the placements you used and how you think they sounded.

Also try the Josephson C42 cardioid condensor mics. Since these are directional, they may be used in different configurations than the omnis, like ORTF and XY coincident arrangements. Compare one of these techniques with the spaced omni technique. There is a stereo bar for mounting two microphones to one stand and manipulating their position angle and separation. This may be used for both XY and ORTF setups.

We usually go straight to the condensor mics for recording a piano, but dynamic mics, even SM-57s, can produce good recordings. You may try any of the CCRMA microphones to see how their sounds differ.