Introduction

This worksheet guides you through a possible thought process for choosing microphones, preamps, and hardware settings for a recording session. Show patch bay connections on the patch bay diagram by writing the specified letter in two circles to represent connecting two jacks with one patch cord. Don’t forget to use phantom power for all condenser mics and only for condenser mics. Refer to the list of microphones owned by Performance Studies for your mic choices.

Review manufacturer descriptions of the preamps at the links below to inform your choices. You’ll use each preamp once in this worksheet.

- Seventh Circle preamp clones:
  - “Transformerless” (model C84): http://www.seventhcircleaudio.com/C84/C84R20/c84_about.htm
  - “Neve clone” (model N72): http://www.seventhcircleaudio.com/N72/N72R32/n72_about.htm

- API 3124:
  - see also http://www.seventhcircleaudio.com/A12/a12_about.htm (a better description of Seventh Circle’s clone of this preamp)

- TL Audio Ivory 5001: http://www.tlaudio.co.uk/docs/products/5001.shtml

Note that this much use of preamps for “color” is overkill for your first projects. In your first projects, start with the default preamps and experiment with other preamps one track at a time, and with good reason (e.g., to enhance the best aspect of an important instrument in your mix or to compensate for a shortcoming of an instrument).
Preamplifier Control Panels

Seventh Circle multi-preamp clone module
Includes the preamps called “Transformerless” (or “T’less”), “Jenson Twin Servo,” and “Neve clone”

API 3124+
Fill in the Banks

1. Lead vocal

   (a) Use a large diaphragm condenser mic with some warmth, character.

      Make: ___________________ Model: ___________________

   (b) Because the mic will introduce some coloration, choose a preamp with only slight coloration. Connect the mic from Live Room jack 1 to the preamp's input 1 by writing the letter A in the appropriate jacks.

   (c) Connect the preamp's output to Pro Tools In 1 by writing the letter B in the appropriate jacks.

   (d) You'll need to turn on the switch labeled _________________ before you hear anything.

   (e) To get some soft clipping by overdriving the preamp, turn the _________________ knob high to achieve the desired level of distortion, and adjust the _________________ knob to keep the signal at a usable level.
2. Piano

(a) Use a matched pair of small diaphragm condenser mics with some warmth, character.

Make: ___________________ Model: ___________________

(b) To suit the piano’s role in the song you’re recording, choose a preamp with an aggressive midrange. Connect the mic from Live Room jack 2 to the preamp’s input 1 by writing the letter C in the appropriate jacks.

(c) Connect the preamp’s output to Pro Tools In 2 by writing the letter D in the appropriate jacks.

(d) You’ll need to turn on the switch labeled __________________ before you hear anything.

(e) The signal is so loud that it’s clipping too much, so also activate the switch labeled __________________, then adjust the __________________ knob to set an appropriate level.

3. Cymbals

(a) Record the cymbals with a matched pair of small diaphragm condenser mics overhead. Choose mics that are neutral in color with crisp high frequency response.

Make: ___________________ Model: ___________________

(b) Choose a preamp with the most transparent sound (minimal circuitry) to keep your cymbal tracks clean and vibrant. Connect the mic from Live Room jack 3 to the preamp’s input 1 by writing the letter E in the appropriate jacks.

(c) Connect the preamp’s output to Pro Tools In 3 by writing the letter F in the appropriate jacks.

(d) You’ll need to turn on the switch labeled __________________ before you hear anything.

(e) Phase cancellation has a significant impact on high frequencies especially when using multiple mics on one instrument, and it is a complex phenomenon to control, so try flipping the switch marked __________________ and leave it in the position that sounds best.

(f) You want a pure sound for your cymbals, so keep the __________________ knob low to avoid clipping in the preamp, and adjust the __________________ knob to keep the signal at a usable level.
4. Snare drum

(a) Use the small diaphragm dynamic mic that is standard for snare drum.

Make: Shure  
Model: 

(b) You want a beefy snare sound, so select a valve (or tube) preamp. Since you’re not using a condenser mic, make sure the switch labeled is off.

(c) Connect the mic from Live Room jack 4 to the preamp’s input 1 by writing the letter G in the appropriate jacks.

(d) Connect the preamp’s output to Pro Tools In 4 by writing the letter H in the appropriate jacks.

(e) You don’t want too much “thud” from the snare or leakage from the bass drum, so turn on the switch labeled , which activates a pass filter.

(f) To get some soft clipping by overdriving the preamp, turn the knob high to achieve the desired level of distortion, and adjust the knob to keep the signal at a usable level.

5. Bass drum

(a) Use the large diaphragm dynamic mic that is standard for bass drum.

Make: 
Model: 

(b) You don’t need much character from your bass drum in this song, so there’s no need to use a special preamp for it. If you don’t insert any patch cords in its signal path, the bass drum mic in Live Room jack 5 will automatically run through the built-in preamp of the Digidesign C24 control surface (the “mixer” in the studio) and into Pro Tools In 5 because the top and third patch bay units are configured to be full .

(c) More about the patch bay: The second patch bay unit has device inputs on its upper row and outputs for those same devices on its lower row—we don’t want to connect a device’s output to its own input. The bottom patch bay unit connects to unrelated devices like synthesizers and a variety of inputs to the headphone system—there’s no need to have them connected to each other by default. Because of this, the second and bottom patch bay units are configured to be .
6. Electric bass guitar

(a) It is common to record an electric bass “direct,” meaning without using a guitar amplifier and microphone. To do this, you could plug the bass directly into the front panel jack on the TL Audio preamp labeled ________________ or the jack on the API preamp labeled ________________ . To use the API this way, you would need to turn off the switch labeled ________________ , because we wouldn’t be using a mic on that channel.

(b) Remember that you should never plug an ordinary guitar cable into the patch bay, because the standard guitar plug will damage its jacks, which are designed for plugs called longframe or B-gauge. Got it? ________________ .

(c) Because we want the bassist to be in the room with the other musicians, and because we want different preamp coloration, we’re not going to use the API or the TL Audio after all. Instead, we’ll put the bassist in the live room and connect it to a direct box or DI (which stands for “direct input.” The direct box will connect to the live room jack panel like any microphone. Choose the preamp with the warmest “vintage” sound but no valves (tubes). Connect the direct box from Live Room jack 6 to the preamp’s input 1 by writing the letter I in the appropriate jacks.

(d) Connect the preamp’s output to Pro Tools In 6 by writing the letter J in the appropriate jacks.

(e) To get some soft clipping by overdriving the preamp, turn the ________________ knob high to achieve the desired level of distortion (we would only use a little, for “bite”), and adjust the ________________ knob to keep the signal at a usable level.