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SELF-INSTRUCTION GUIDE

FOR THE ROGER NICHOLS RECORDING METHOD

A lot of thought was put into how to create a workshop type experience in this book. The experience desired for you, the reader, will:

- Give you the experience of recording without the expense of a live band.
- Allow you to work with the same song and instrument tracks as everyone using this book.
- Allow you to work at your own pace
- Let you have a different result with your studies of this material than others using the book and files, based on your individual taste when using plug-ins and performing edits to the source material.

Pro Tools Session Files

The course comes with a Pro Tools session with Audio Files. The contents need to be copied to the your computer. If the internal hard disk on the computer is not fast enough to perform the task then an external FireWire drive may be required. A 7200RPM hard drive is recommended. A copy of Pro Tools is needed to load the session files.

There are two session documents:

Rec-101 is a Pro Tools Stationery Pad so that you cannot save over it. That means it's locked down, and you must Save As a new Pro Tools document. This is the session that you will use to perform all of your work. The session comes up with no tracks. You must add a new track for each overdub required by an exercise covered in the book.

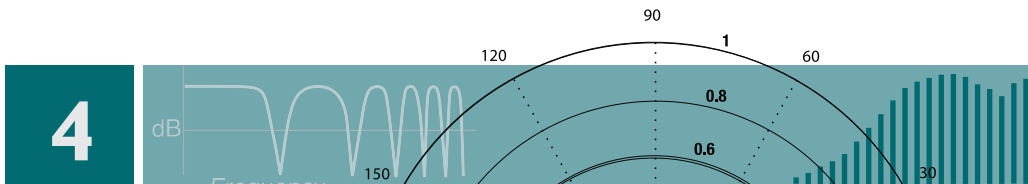
The way the session is set-up is by having ALL tracks pre-recorded and hidden from your immediate view. Each of the hidden tracks output are routed to busses in Pro Tools. These routings match the inputs that you are asked to route to when each empty track is created.

For example:

- The hidden drum track is routed to Bus 1-2.
- You will be asked to create a Stereo Audio Track.
- The input is routed from Bus 1-2
- When you are recording, the drums are recorded into the new empty track as though they were being played live.

Each track is set-up the same way. Near the end of the course, you will be shown how to un-hide the additional tracks and Enable the additional tracks so that you can play back the entire demo session.

Rec-101-Mix is also a Pro Tools Stationery Pad of a final mix ready document. All tracks are edited and cleaned up. There are two Plug-ins pre-installed in this mix: a 4-band EQ on the Drums and a D-Verb on the reverb Aux track. Tracks that require some reverb have reverb sends on them. This session is to show you what your sessions should look like when you get to the mix portion of the book. If you have filled up your session document with too much garbage during



NOISE FROM YOUR ELECTRICAL CONNECTIONS

Spike, noise, surge, swell, transients, harmonics, and sag are not the names of members of a new alternative rock group. They are characteristic problems encountered in power management. AC power is often the most overlooked area in recording studio design. If you were a farmer and your horse was your livelihood, you would probably pay attention to how well it was doing. AC power is the main source of your income, and also the primary cause of all the hums and buzzes you must deal with on a day-to-day basis. They say that if you build a better mousetrap, people will beat a path to your door. Well, just wait until you have the quietest studio in town and see how fast everyone wants to work there.

Power Quality

Power quality can be measured by recording the duration and magnitude of any disturbances. Faults that are short in duration, such as transients, can damage sensitive electronic devices such as diodes, transistors, and ICs. Lower-level transients slowly eat away at internal semiconductor junctions within electronic equipment, eventually causing failures. High-frequency noise can cause digital data errors in both digital audio and computer equipment and can interfere with clock signals causing timing errors and excessive jitter. Voltage fluctuations affect motor operation and electronic equipment that requires a steady power source.

Receptacle Load Centers

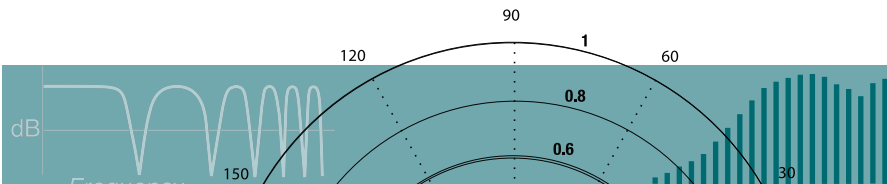
Receptacle load centers include the load center feeding mixing consoles, recording equipment/computers, and tape machine rooms. Connections and breakers should be inspected on a regular basis for loose connections, especially the feeders into the load center. Feeder cables can go through temperature fluctuations with load changes and these fluctuations can make cables swell and shrink, causing the connections to loosen. A loose connection can cause imbalances in phase currents and even be a fire hazard.

At the load center, harmonic currents can cause circuit breakers to trip. Thermal magnetic breakers may trip prematurely from excess heat in the panel caused by harmonic currents. Breakers may also trip erratically when nonlinear currents with high peak values are present. A peak-sensing circuit breaker responds to the peak of the current waveform. Since the peak may be higher due to harmonics, this type of breaker may also trip prematurely at a lower RMS current.

Lighting Load Centers

Excess heat caused by harmonics in a lighting circuit conduit can cause conductor insulation to fail. In energy saving electronic ballasts with solid-state power supplies, the phase and neutral currents can contain harmonics. Existing standards for the number of conductors in a conduit don't always account for the heat caused by these harmonics.

To find harmonic overloads in lighting circuits, you can measure the current in the feeder neutral. If the levels are high, compare the measured currents to the ratings of the conductor, lugs, and bus bars. Feel the conduit for excess heat. To



MIXING

It is time to make a mix of our song. This is the part we have all been waiting for. Now we get to bask in the fruits of our labor.

The First Taste of Mixing

If you have been playing with the playback levels of the tracks and you have moved the pan controls around then you already have your first taste of mixing. The relative levels between tracks makes a big difference in the way your final mix will sound.

The biggest hump to overcome when mixing is that everything sounds better when it is louder. Everything! You can have the crappiest mix on earth, but if you play it loud enough, it will sound great. The worse the mix, the louder you have to play it.

You see this all the time in the studio when the mix is almost done and the band shows up for playback. The guitar player comes over and wants the guitar up just a little. Then the bass player sneaks over and turns up the bass. The drummer is not far behind, complaining about the lack of punch in the drums, and up crawls the drum group. After everyone finishes, the mix is right back where it started, but louder. The band is happy, approves the mix, and leaves. The engineer turns down the master fader to get the overall level back to normal, and prints the mix.

If you can change the level of an instrument in the mix by a tenth or two-tenths of a dB and you can hear the change that you made, the mix is getting pretty good. If you can change some other instrument by that amount and not really hear any difference, the chances are that the instrument you are playing with is not where it should be. The problem may be down to level, EQ, compression, or reverb, but it is not quite ready for prime time. In the following sections, I cover all four and point out things to watch for.

EQ Balance

Think of any instrument as two separate components: the low end of the instrument and the high end of the instrument. As an example, let's take an acoustic guitar. The highs are important because they give the attack of the note or the raking of the strings that extra presence to cut through the track. The low end creates the body of the sound, the warmth of the instrument in the track. If the balance between these two halves is not right, you will never get it to sit in the track correctly. There will always be places where it seems too loud or too soft.

Start with the attack of the notes, or the raking of the strings in the case of a rhythm acoustic part. Change the level of the acoustic guitar until the high end sounds right in the existing mix. Get the level to where you can hear a level change of two-tenths of a dB. Now stop. With a parametric EQ set to a low Q of around 2, giving a very wide, smooth curve, and the frequency set to around 250 Hz, move the gain of the EQ up or down to get the low part of the guitar into the right relationship in the mix. Try to think of the low end of the guitar as a separate instrument. Get it to sound good in the mix. When you get the low end of the guitar in a place where you can hear a two-tenths of a dB change in the level, you are doing great.

OPEN PRO TOOLS
SESSION FILE
REC-101-MIX.PTF