Chapter 8

Recording Electric Guitars and Other Electronic Instruments

In This Chapter

- Recording direct or live with virtual amplifiers
- Recording live with a microphone and amplifier
- Customizing your guitar tracks' sound

In Chapters 6 and 7, I explain how to record software instruments and vocal and acoustic instrument tracks. In this chapter, I explain how to record another type of instrument: an amplified instrument, most notably an electric guitar.

Throughout this chapter I'll be using the electric guitar as an example because that's the instrument I play and what I have handy. Please don't misunderstand; the electric guitar is just one of the electronic or amplified instruments you might record. So if you play another electronic instrument, such as an electric piano, synthesizer, violin, bass, or whatever, merely substitute the name of your instrument wherever you see the word, "guitar."

Overview from the Top: Recording Direct or Live

Recording an electronic instrument with GarageBand is easier than with most other software because, once again, Apple has done the heavy lifting for you. This time they've included built-in guitar amplifier models with presets designed by professional recording engineers; any guitar can play with a vintage British Invasion sound, the reverb-laden distortion of Arena Rock, the dulcet tones of Clean Jazz, or many others.

Even a crummy guitar that sounds like garbage when you use an amplifier may sound great when heard through one of GarageBand's amp models. If you've got a guitar handy, give it a try even if you're not a guitar player. It's very cool.

There's another way recording electronic instruments with GarageBand is easy: GarageBand doesn't require you to plug your guitar into a traditional amplifier when you record an electronic instrument. You plug the instrument into your Mac (or into an audio interface connected to your Mac) and GarageBand adds the sound of the amplifier, which you hear as you play. Slick.

In the recording industry, plugging an electric guitar (or other electronic instrument) directly into your computer is called recording *direct.* I recommend recording direct whenever possible. Unless you have a lot of time to experiment with an amplifier and a microphone, you'll get better results this way.

But, I realize that recording direct may run contrary to the beliefs of purists and pros and that some recording engineers and producers prefer to capture the unique interplay of guitar and amplifier by recording the guitar and amplifier *live,* using a microphone or microphones.

If you want to record your guitar live, you can find everything you need to know about setting up and recording with microphones in Chapter 7. But, because amplifiers are notoriously difficult to record well, I've got a few tips and hints for those of you who insist on doing this the harder way, too.

Twenty or thirty years ago the technology wasn't good enough to record direct. In the old days, all electric guitar and bass tracks were recorded, "live," by micing the amp. Today, amp modeling and sound shaping software have gotten so spectacular sounding that many popular artists play through modeled amps on stage and in recording. Paul Kent, lead guitarist for the Macworld All-Star Band, played our entire last gig sans amplifier through an amp modeler patched directly into the house sound system. It sounded great and, as a pleasant side effect, the sound pressure level onstage was lower than it's ever been, which meant we could hear ourselves playing and singing.

I hardly use my amp at all anymore; when I just want to play, I open GarageBand and play without recording.

Recording Direct with GarageBand's Virtual Amplifiers

When you record direct, you bypass amplification completely and plug your instrument directly into your Mac. When you play, the sound comes out of your Mac speakers. You can change your instrument sounds by selecting a different real instrument or preset.

Setting up to record

Before you begin, you need two things: Your instrument and the appropriate cable or cables to connect it to your Mac. Or, of course, the appropriate cables to connect it to your audio interface if that's how your studio works. (See Chapter 2 if you're wondering what an audio interface is.)

You can buy an adapter (see Chapter 2) that lets you plug your guitar into your Mac's Audio In port for under $20. It's worth having one around even if you have an audio interface; that way if you have a problem with the audio interface, you can just plug your guitar into your Mac instead. It is also great for recording your guitar, "on the road," without having to carry additional devices or boxes or cables or power supplies.

With your instrument plugged into your Mac, follow these steps:

1. **Open System Preferences by choosing Apple Menu➪ System Preferences. Click the Sound icon, and then click the Input tab.**
2. **Click the input that your guitar is plugged into.**

   In Figure 8-1 I'm plugged into the PowerBook's Line In port.

   If your Mac has a built-in microphone, as most Macs do these days, make sure Internal microphone is not selected before you proceed. Make sure to select either Line In (if you're plugging directly into your Mac) or your audio interface (if your instrument is plugged into an audio interface). Should you not heed this warning you will hear awful high-pitched howling known as feedback as soon as you monitor any Real Instrument track.

   Now, you need to establish whether GarageBand "hears," your instrument.

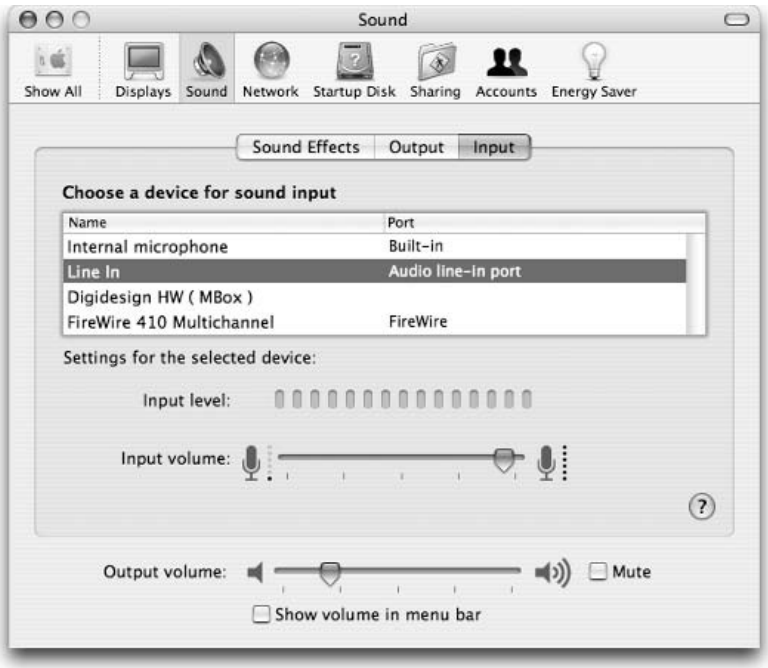


Figure 8-1: Choose the input your guitar is plugged into; don't choose Internal microphone or your ears will get a nasty surprise.

3. **Open a GarageBand project by double-clicking it or create a new project by choosing File➪New or using the shortcut ⌘-N.**
4. **Create a new track by choosing Track➪New Track or using the shortcut ⌘-Option-N.**
5. **When the New Track dialog box appears, click the Real Instrument tab.**
6. **Choose an instrument category in the left column.**

   If you're playing a guitar, choose the Guitars category; if you're playing drums, choose the Drums category; if you're playing a bass, choose the Bass category; if you're playing another type of electronic instrument, choose the category that sounds most appropriate.
7. **Choose a preset for that category in the right column.**

   Because you just want to ensure that GarageBand can hear what you play, you can choose any preset for now.

   Chapter 7 unravels how these categories and presets work.
8. **Set the input to Channel 1.**
9. **Click the Mono button for Format.**

   If you want to record two parts onto one track, you can choose Stereo instead. You can't tweak individual parts after you record, though, because the parts won't be on separate tracks. See Chapter 7 for more on mono versus stereo.

10. **Click the On button for Monitor (so you will hear yourself play).**

    Your New Track dialog box should look pretty much like Figure 8-2.

11. **Click the OK button.**

Figure 8-2: Ready to try your guitar?

12. **Now, strike a chord or play a riff (or do whatever it is you like to do with your instrument). Did you hear what you played from your output source (usually your computer speakers)? And, did you see activity in the track's level meter or the master level meters?**

    If you heard your instrument loud and clear and answered with a resounding "yes," you're good to go. Feel free to skip ahead to the section, "Setting Levels." If you answered no to either question, see the next section, "Troubleshooting your setup."

Troubleshooting your setup

If you followed the steps in the preceding section and the setup didn't work quite right, here are some quick fixes (in no particular order):

- Make sure all your cables are connected firmly.
- Make sure the correct devices are selected for input and output in GarageBand's Preferences. (Open GarageBand Preferences, click the Audio/MIDI tab, and choose the appropriate input and output devices from the Audio Input and Output menus). See Chapter 3 for more details about preferences.

- Make sure the proper track is selected in the main GarageBand window.
- Make sure the mute button for the track you're recording isn't illuminated.

  If you mute the track you're recording, you won't hear yourself play.
- Make sure the solo button for another track is not illuminated.

  If you solo any track but the one you're recording, you won't hear yourself play.
- Make sure the volume slider for the track isn't all the way to the left.
- Make sure the volume control on your guitar is turned up.
- Make sure the audio inputs in System Preferences or on your audio interface cards are turned up.
- Make sure your Mac speakers aren't muted (if that's the output you're using). Choose Apple Menu➪System Preferences, click the Sound icon, and choose the Output tab. If the Mute check box contains a checkmark, clear it to un-mute your Mac.
- Make sure you can hear other sounds through the selected output device.

  If none of this works, try switching to a different input. If you have an audio interface available, use it. If it's an audio interface that's giving you trouble, try using your Mac's Line In port instead.

Making a too soft instrument louder

If you get a signal from the guitar — you can hear it and see activity in its volume meter — but it's not loud enough, even with the volume slider slid all the way to the right, you can do a few different things.

First, make sure the volume knob on your guitar is cranked up all the way. Plug into an amp or headphone amp temporarily using the same cable to check. I know I just mentioned this earlier, in the list of things to check, but I want you to double-check it one more time before I suggest spending money to resolve it. . . .

If checking the volume doesn't do the trick, a preamp or an audio interface can make your instrument louder without adding noise (hissing, buzzing, crackling, and the like):

- **Preamp:** If your guitar still doesn't put out a loud enough signal and you've turned up the input levels everyplace you can, you need a preamp to boost the signal. I've been using the Audio Buddy from M-Audio, shown in Figure 8-3. A preamp like this can be used with a microphone for vocals, acoustic guitar, bass, or with any instrument that requires additional amplification to deliver a sufficient signal to GarageBand.

Figure 8-3: Audio Buddy (top=front; bottom= back) is a mic preamp; it makes instruments or microphones louder without adding unwanted noise.

In addition to ¼-inch guitar inputs, the Audio Buddy preamp has XLR ports and supplies phantom power to microphones connected via XLR if they require it. It's quiet (meaning it doesn't add noise of its own), but can give a boost to many instruments and microphones for under $100.

- **USB audio interface:** The audio interface is the better way to spend your money. Most of them include preamps and phantom power and an audio interface may sound better than a preamp (if it records at a higher sample rate than the Mac's built-in Audio, which is 44.1 kHz 16-bit samples).

  For example, the $149 M-Audio Mobile Pre records at a slightly higher sample rate (48kHz 16-bit), while the $499 M-Audio FireWire 410 records ultra-high quality 96kHz 24-bit samples and 192kHz stereo outputs. For the most part, the better you want your recordings to sound, the more money you're going to spend.

Setting the levels

Because you're recording on a real instrument and not a software instrument, you won't be able to change the recording level after a track is laid down. So if you record the track *too hot* or *too cool,* meaning with too much or too little level, that's the track you're stuck with. To ensure you're making a useable

track, remember to check your levels before you begin recording. You do this by playing a bit of the song you want to record and watching the LEDs next to the track.

What should you look for? Take a gander at Figure 8-4 for the answer.

You want to set the recording level so you see as much green as possible without seeing much or any yellow or red. An occasional spike to near the red, as shown in the third picture down in Figure 8-4, is fine as long as there aren't too many and they don't last too long.

If you see *all* the red LEDs lit up at once, as shown in the bottom picture in Figure 8-4, your recording will almost certainly be distorted and is likely to be unusable. So don't do that, okay?

For more on checking and adjusting levels before you record, see Chapter 4.

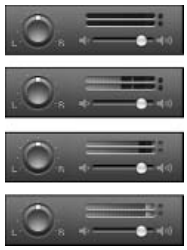


Figure 8-4: The top picture is too cool; the two middle pictures are just right; the bottom picture is too hot.

That's pretty much it. Just remember this mantra when you record guitars (or anything else, for that matter):

Lots of green and it's sweet and clean.
Too much red and your track is dead.

Recording the track

There's really not much to it once GarageBand hears your guitar and you've set the levels. Because you've already created the track, all that's left to do now is to turn on the Metronome and Count In features if you like them and then record. (See Chapter 6 for the specific steps.)

Even if you checked the levels before recording, you still need to pay careful attention to the levels while you record, too.

If only one or two brief passages were recorded too hot or cool (as opposed to a track that's too hot or cool from start to finish), you can try lowering the level of the hotter or cooler passages using the rubber band Track Volume controller. (See Chapter 4 for details.) If there's not too much distortion in the recording (from being too hot) and you have other tracks playing simultaneously, you can often make it good enough to get buy. Still, it's better to record at a proper level in the first place.

So let your ears be your guide — if it sounds good, it's a keeper and if it doesn't sound good, re-record it.

Recording Live with an Amplifier and Microphone(s)

As I mention earlier in this chapter, recording an electric guitar (or other electronic instrument) *live* means that you hook your guitar up to the traditional guitar amp and record with a mic, rather than plug your guitar directly into your Mac and use GarageBand's amp simulators.

The key to recording an amplified electric guitar well is patience. You need to experiment with mic positions, amp positions, microphones, rooms, and surfaces before you begin to understand how to achieve just the sound you want. If you think you're just going to plug in a mic, hang it near an amplifier, and get a great guitar sound, you've got another think coming 'cause it ain't that easy. But if you're not averse to a bit of work, the results can be outstanding, just like Jimmy Page or Eric Clapton (well, almost).

All the details in Chapter 7 apply to recording an amplified electric guitar with a microphone, so here are a few additional tricks and tips that will help you capture the sound you desire as it leaves the amplifier.

- **Mic placement is key.** You need to experiment and find the best location for the mic you're using. There is no "right" way; you have to find the sweet spot for your combination of microphone, guitar, and amp. Start off with the mic about an inch from one of the amp's speaker cones. Move it off-axis, to the left and right. Swivel it at different angles. Move it away from the speaker cabinet in small increments. If your amp has an open back design, try micing the back of the cabinet instead of the front. Move the mic around as before.

Microphone stands are a must in situations like this where precise positioning of the mic is necessary.

- **Loud isn't always good.** If you're trying to get an overdriven or distorted guitar sound, set the levels of your amp and guitar as low as you can and still achieve the effect you desire. Playing louder will just muddy the recording (that is, make it sound distorted and buzzy). This may be the effect you're looking for, but you'll usually get a better recording if you play at the lowest level you can.
- **A small practice amp is often better than a big old Marshall double stack for home recording.** If you have both, try your little amp — you'll be surprised at how nice it sounds when recorded.
- **Consider room acoustics.** If you're going for that reverb/echo/distortion sound, a lively room with many hard surfaces will add natural echo and reverb. Or, for a more jazz-like passage, you might prefer that the room add as little color as possible, with soft surfaces to absorb reflected sound waves before they leak back into the mic.

Many engineers like to record guitar amps in the bathroom. All you need is a long mic cord and a long guitar cable to do it, and the effect is interesting, to say the least.

If you play too loud, you'll end up with echo-and-reverb-laden mud instead of a sweet rock and roll guitar sound.

Try this experiment: Record something three times with the amp set to three different levels — quieter than usual, normal, and louder than heck. You'll find that the louder than heck version rarely sounds as good as either of the others.

If you try the bathroom trick, remember to experiment with mic position. It's a time-consuming chore but worth it if you want the best sound. I've heard more than one recording engineer say that setting up guitar mics (or drum mics) properly often takes longer than the recording session itself.

Conversely, if you're getting too much room sound in the track, try using pillows or blankets in front of the amp to reduce reflected sound. Move the amp around the room, too, and point it in different directions if you think that will help.

Finally, if you're trying to record an acoustic guitar, you may have more luck with an electrified acoustic guitar, such as the J.R. Beck 9861EQ acoustic/electric guitar shown in Figure 8-5.

Photo courtesy of JR Beck Guitars (www.JRBeck.com)

Figure 8-5: This acoustic guitar can be recorded as though it were an electric guitar!

It's a standard acoustic guitar with three additions: a pickup, inside (think little baby microphone), a hole to plug a guitar cable into, and a 4-band equalizer and volume controller. It plays and sounds like an acoustic guitar, but you can plug it into an amplifier, audio interface, or Mac, and record it without a microphone.

I can't tell you how much easier it is to record my 9861 than it is to mic my older Yamaha acoustic and record it with a microphone. Also, the sound is much better, with a lot less unwanted noise and other crud than when I record acoustic guitar with a mic.

If you plan to record a lot of acoustic guitar tracks, an electric/acoustic will save you hours of setup and microphone placement/adjusting time. It will almost certainly sound better as well.

J.R. Beck is a relatively new guitar company that uses the so-called Dell model to offer great guitars at amazingly low prices that are only available on the Web (www.jrbeck.com). The 9861 in Figure 8-5, for example, costs around $200 but plays and sounds better than electric/acoustics costing twice as much.

Customizing the Sound of Your Guitar Tracks

Now that your guitar track is in the can, there are many things you can do to it to make it sound . . . well, different, if not better.

Changing the presets and amp simulators

The first and easiest is to choose a different amp model. Open the Track Info window (Track➪Show/Hide Track Info; ⌘-I; or double-click the track name) and select a different amp model in the right column.

If you're looking for an unusual sound, try some of the other instrument models on your guitar. Bass, vocal, drum, or even band instrument presets may sound perfect laid on your guitar track. Don't be afraid to try it; it won't hurt, and you can always Undo if you don't like it.

The first thing I'd try is changing the amp simulation effect by choosing one of the five presets as shown in Figure 8-6. When you do you'll hear an entirely different guitar sound than before.

Editing the presets

If you still haven't found the sound you want among the amp and instrument presets, find the one that's the closest to the sound you desire and edit it to your specifications. Here's how:

1. **In the Track Info window, click the Edit button (little pencil) next to the presets menu.**

   I clicked the Edit button next to Amp Simulation, and the Amp Simulation window appeared, as shown in Figure 8-7.

Figure 8-6: Choose one of these five amp simulation presets for a whole new sound from your track.

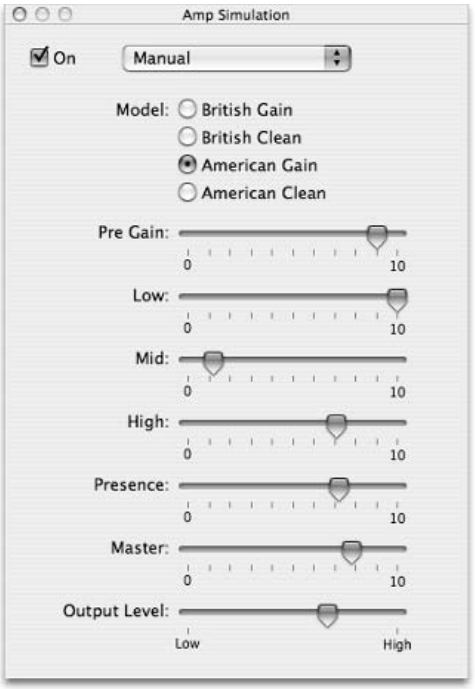


Figure 8-7: Craft your own amp simulation right here.

2. **Have your way with the Amp Simulation effect's individual controls.**

   Don't forget you can play or record while the Track Info window is open. So it's easy to listen to a bunch of different sounds for your instrument before recording.

3. **Don't forget to save the Amp Simulation preset if you like it (by choosing Make Preset in the Amp Simulation window's preset menu).**

4. **And if you like the instrument sound overall, click the Save Instrument button at the bottom of the Track Info window to save it. Remember to save the preset under a different name.**

When you're asked to name a preset or instrument, choose a name other than the instrument or preset's original name. If you use the original name when you save, you replace the Apple-configured version with the one you just created, which is almost certainly not what you want.

When you exhaust the possibilities of the Amp Simulation, consider changing the settings of other effects, or enabling or disabling effects to change what you hear even further.

Making other changes

When you're satisfied with the sound of your guitar track, here are some more tricks to try:

- **Double tracking:** Double-tracking is an age-old technique to fatten up the sound of a guitar. See Chapter 10 for details.
- **Finding additional amp models:** Apple's GarageBand Jam Pack more than doubles the number of amp models and offers several additional amp simulation presets as well, as shown in Figure 8-8. For $99, you also get over two thousand new loops, more than a hundred new software instruments, and more than a hundred new effects presets. If you're having fun with GarageBand, Jam Pack is a bargain.

  If you've got Jam Pack and you're still not satisfied, AmpliTube is the plug-in that the pros use. Its assortment of amps, speakers, preamps, stomp box effects, and presets is endless. Even a mediocre guitar sounds great when you play it through AmpliTube.

  See Chapter 15 for more about Jam Pack and AmpliTube.

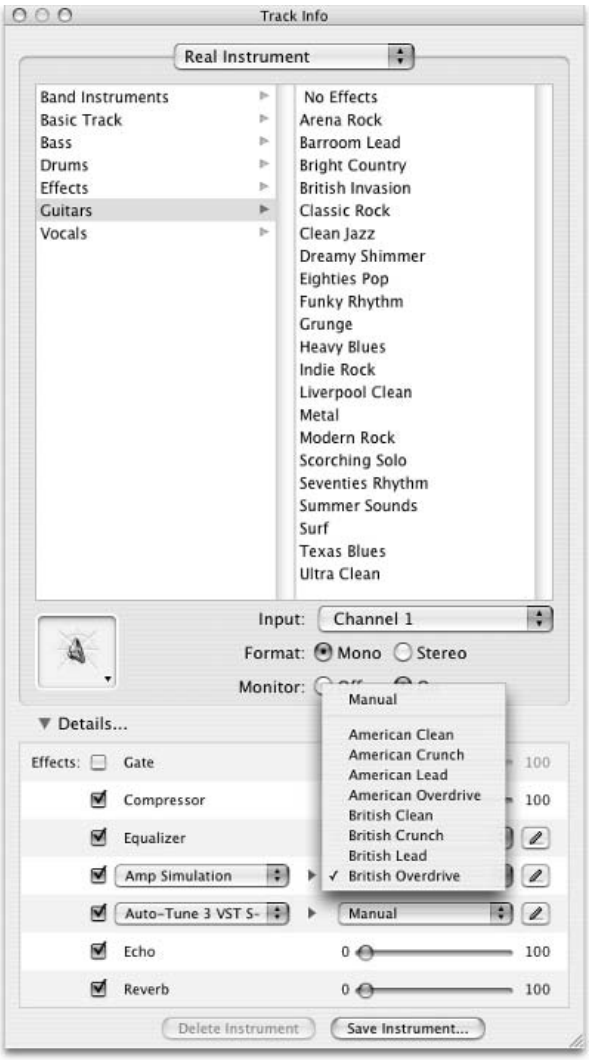
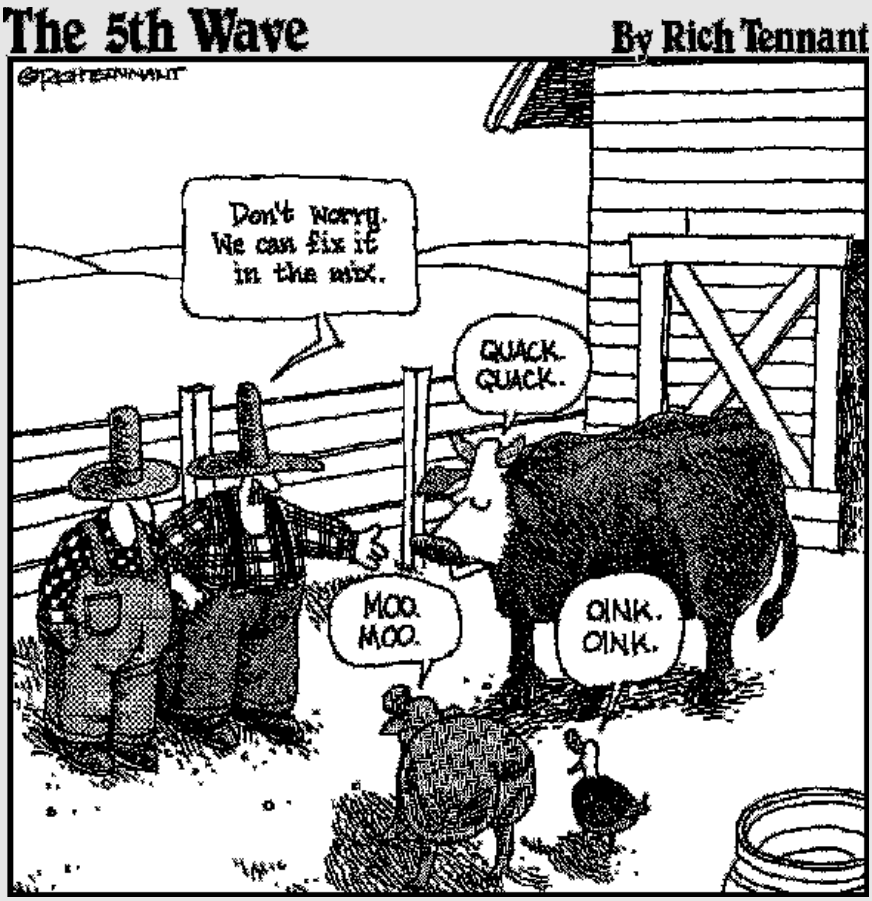


Figure 8-8: GarageBand Jam Pack gives you many new amp models and presets.

Part III

Post-Production: Finishing Your Song



In this part . . .

When your tracks are in the can, it's time to polish and share them with others. In Chapter 9, I look at the various ways that you can edit and tweak your tracks to make the good parts sound better and the bad parts, er, not sound at all. After you've cleaned up any mistakes or underwhelming performances, it's time to mix the tracks into a cohesive song, which, not coincidentally, is the topic of Chapter 10. Finally, in Chapter 11, you put the icing on the cake by mastering, that is, exporting the tracks to iTunes as a single dynamic-sounding stereo song file.