

Chapter 4

Introducing Multitrack Recording with GarageBand

In This Chapter

- ▶ Understanding the basics of digital multitrack recording
 - ▶ Recording the tracks
 - ▶ Mixing the tracks into a song
 - ▶ Mastering a song when it's done
 - ▶ Managing your song files
-

There's no getting around it: Making a song with GarageBand uses pretty much the same process that musicians and producers use to make hit records in multimillion-dollar recording studios. GarageBand makes it easier and a lot less expensive, but the process is much like the process that the pros use.

And so, to use GarageBand well, you need to understand the multitrack recording process that lies beneath it all. Once you understand multitrack recording, you can plan and produce better recordings with GarageBand. If you're ignorant of the process, you're likely to flail about hopelessly, without ever composing anything good enough to listen to more than once. It's that simple.

Even if you're a grizzled old studio vet who has been overdubbing and sweetening tracks since I was in diapers (unlikely), you may want to read the chapter anyway. You may think you know the multitrack recording process, and you probably do, but I guarantee that you don't know GarageBand like I do.



Have you ever been inside a multimillion-dollar recording studio or mixed audio on a 48-channel console? Have you recorded songs on a 24-track tape machine that costs more than my house? Or, have you produced demo recordings for several rock bands? Perhaps you've mixed audio for television and

radio commercials. Well, I've done all that and more before I gave up the advertising and audio games and became a full-time Mac geek after getting my first Mac back in 1985.

But I digress.

Here, I try to kill two birds with one chapter. So, in this little chapter, you stroll through the process of multitrack recording, and I show you how the process works with GarageBand.

This chapter is a road map at 20,000 feet. As such, it may foreshadow the techniques, terms, features, and other things that I cover in more detail in Parts II and III. If a GarageBand feature or term isn't explained fully in this chapter, rest assured that I explain it in full and loving detail elsewhere in this book.

Understanding the Role of Stereo in Multitrack Recording

The way I see it, listening to music has had three major paradigm shifts over the ages:

- ✓ **The Prerecorded Music Age:** I won't even attempt to put dates on it, but this was the time before recording audio was invented.
- ✓ **The Age of Monaural Music:** During this period, audio was recorded onto many types of media, using all kinds of strange devices (wire recorders, rotating drum recorders, and tape recorders, to name a few). During the Monaural Age, though, everything that was recorded had something in common: It would play out of a single speaker. Or, to be a bit more technically correct, even if multiple speakers played back the sound, what you were hearing was a single track (or "channel") of audio.

This era could have easily been known as The Age of One-Channel, but for reasons that will become apparent in just one second (or one sentence, whichever comes first), the monaural metaphor works better here.

- ✓ **The Age of Stereo:** One day, probably before I was born (my tech editor says it was 1933), the recording industry noticed that audio sounded dramatically better when it came out of *two* speakers, with each speaker playing a discrete track (or channel) of music.

Stereo caught on by the late 1950s and, although popular songs continued to be released as monaural recordings well into the 1960s, stereo has been the way we listen to music ever since.





Stereo versus mono (versus quadraphonic versus 5.1)

In the simplest terms, stereo sounds great because you have two ears and it plays two tracks of music from two speakers. Perhaps you've noticed that correlation — or not — but that's why stereo sounds better than mono. With stereo sound, your ears receive sound waves from any source at different times. Each ear hears overtones, echoes, harmonics, and everything else about that sound at different times.

Stereo recordings create the illusion that a stage exists between your speakers, with the music coming from the stage (well, a sonic illusion, if not a visual one). When you listen to a well-produced stereo recording on a good sound system, some instruments sound as if they're in the very back of the stage, all the way over on the left side, while others sound like they're just right of center in the front row, playing loudly.

As a producer of stereo recordings, you can create this illusion, too. When you mix and master a multitrack recording, you can assign each instrument or voice a position on the *sound stage* (sometimes called the *sound field*.) In recording lingo, you assign the amount of each track that you want to hear coming out of each speaker with a control known as *pan* (for *panorama*). In most systems, pan is controlled with a knob, and GarageBand is no exception. Turn the Pan knob to the left, and you hear more of the track on the left. You get a similar effect by turning the Pan knob to the right.

As far as making one instrument or vocal sound more “up-front” than others, this is mostly done by adjusting the track's *level*, which is how loud

that track is in relation to other tracks. You can use other tricks to emphasize a single track over others, but level is the one that you'll probably use the most.

By the way, many people now have fabulous 5.1 audio systems (also known as *surround sound*) and awesome home theater setups. But guess what? Although more music becomes available in the 5.1 format every day, 50 years after its introduction, stereo is the way most music is heard and I don't see that changing anytime soon.

“Quadraphonic” sound — four channels of audio played through four speakers — was introduced in the late 1970s but never caught on. I used to think “quad” failed because humans don't have four ears. My 5.1 system shoots that theory all to heck.

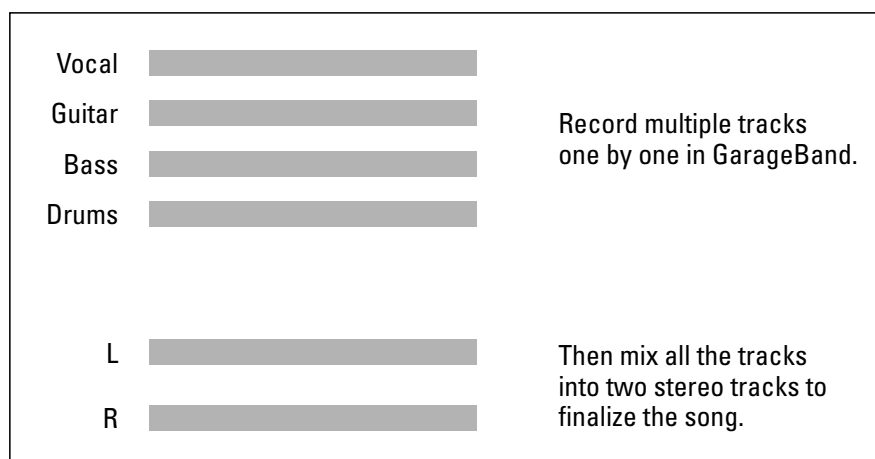
My tech editor, Bryan, informs me that Quadraphonic sound was actually introduced in the 1970s and first demonstrated in the late 1960s. The Who's *Quadrophenia*, released in 1973, was one of the first pop albums released in the quadraphonic format and songwriter/guitarist Pete Townshend and associate producer/engineer Glyn Johns spent many hours recording ambient sound effects for the album — waves crashing, rain falling, and such — because there were few quadraphonic recordings of that sort available. For what it's worth, Pink Floyd's *The Dark Side of the Moon*, an album that spent the better part of my life on the Billboard Hot 100, was also released in quadraphonic form. It still didn't catch on.

Although the way we listen to music — stereo playback — has not changed much in over 50 years, the way that we *record* that music has changed dramatically many times. Paradigm shifts happen, and in the world of audio recording, they have happened quite frequently. We made the leap from

monaural to 2-track; 2-track to 4-track recording (tape); from 4-track to 8-track recording (still tape); from ¼-inch tape to 1-inch tape to 2-inch tape (still tape); from tape to disk (no longer tape); and from million-dollar studios to hundred-dollar, pocket-sized recorders to inexpensive software like GarageBand.

If you have the chops, you can create music with GarageBand that sounds as good as (or better than) music that was made in million-dollar studios 30 years ago. But regardless of how many tracks, channels, machines, tape decks, instruments, outboard gear, or microphones that you have, your songs *always* end up mixed down to just two tracks (also known as two “channels,” or “stereo mix”). Figure 4-1 is worth at least a thousand words.

Figure 4-1:
In the simplest of terms, this is how multitrack recording works.



In Figure 4-1, the four tracks at the top represent three instrument tracks and a vocal track that will be mixed together to create the final two-track master.

The two tracks at the bottom (L and R for left and right) represent the final mixed and mastered product — a two-track (stereo) mix.

So now you know what that song in your head will look like after you record all the parts using GarageBand. To record the song to that point, you use the multitrack recording process, which is what the rest of this chapter is all about.

Strolling through the Recording Process, Quickly

Once you’ve rehearsed (ha), the multitrack recording process begins. Here’s a quick overview of each step:

1. **Get all the tracks down on tape (or disk in the case of GarageBand). In studio-speak, this is called getting the tracks *in the can*.**



Be careful here; studio-speak can be confusing. The can isn't a set of headphones, as I mentioned previously. Used in this context, "in the can" means that all the tracks that you need for this song are done. In this instance, the can is a metal or plastic container that is used to store tape (or film). The plural form (cans) still means *headphones*. I told you studio-speak can be confusing.



Tracks are the basic building blocks of multitrack recording. You record tracks, enhance tracks, mix tracks, put tracks in the can, and so on.

2. **Once your tracks are in the can, your next step is called *mixing* or *postproduction*.**

This is the time to adjust each track's settings — level, pan, equalization, echo, reverb, effects, and so on — so that everything sounds just right to you.

3. **Finally, when every track is adjusted and the song sounds exactly the way you want it to, you can add effects to the song as a whole (a little echo or reverb usually sounds cool) and add a fade-in, a fade-out, or both.**

You then export your *final mix* as a two-channel (stereo) audio file. This final step is called *mastering*.

I discuss tracks, mixing, and mastering in GarageBand in just a moment, but first, I want to be sure that you're ready to rock and roll.

Cutting the Tracks ("No blood on 'em, Mr. Dylan")

As you may remember from a page or two ago, the track is the basic building block of a song; each song is made up of one or more tracks.



The maximum number of tracks is a function of the speed of your Mac's processor, the amount of RAM it has, and the speed of your hard drive(s). You can have only a handful of tracks on older G3 and G4 models to heaven-only-knows-how-many tracks on the latest, greatest G5s.

This section explains how to begin the multitrack recording process by laying down tracks in GarageBand. I explain how to record and how you use a few of GarageBand's features to make sure that each track sounds good later, when you mix those tracks into song.

In GarageBand, you can only record one track at a time. When you begin laying tracks, this means that, although you *can* record everyone in your band playing a song together — or you can sing and play the piano at the same time — if you do, you can't adjust only the drums or only the vocals later in the mixing stage. If you want to adjust, say, the guitar or the vocals separately from the rest of the song, you have to record each part individually on a separate track.

To record a track, follow these steps:

1. Open GarageBand, and create a new song.

You can create a new song in one of two ways:

- If this is the first time you've launched GarageBand or no song was open when you quit GarageBand, you see the dialog box that's shown in Figure 4-2. Click the Create New Song button, and that's what will happen — a new song window appears.
- If a song opened when you launched GarageBand, you can create a new song by choosing File⇧N.

Figure 4-2:

You'll see this prompt the first time you launch GarageBand (and rarely after that).

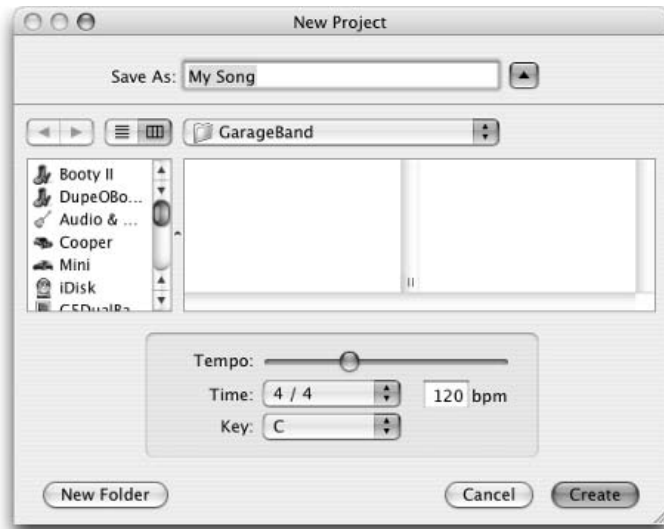


2. When you see the standard OS X Save As dialog box appear, as shown in Figure 4-3, give your song a name and tell GarageBand where to save the file. You can also set some basic settings for the song.

The settings that are shown in Figure 4-3 are the default and the most common settings for a song. Of course, you can change these settings for any song using the menus and slider, as follows:

- **Tempo:** Use this slider to adjust the tempo.
- **Time:** The pop-up menu lets you adjust the time signature. The adjacent bpm box indicates the beats per minute as selected with the Tempo slider. (If you type a new number in the box, the Tempo slider will move by the appropriate amount.)
- **Key:** Use this pop-up menu to adjust the key.

Figure 4-3:
GarageBand's Save As dialog box offers several unique touches.



It's probably a good idea to leave the Tempo, Time, and Key settings alone if you don't know what they mean, at least for now. You can always change them later if you like.

After you save the file, you see the timeline, where your new song is just waiting for you to put something on its tracks.

Loops and tracks

You may be wondering where loops fit in to the scheme of things (that thing being tracks), and that's a darn good question. The darn good answer is that loops are pre-made snippets of music and sound that come with GarageBand. You can use them to build a whole song or use them in combination with your own singing and playing. When you want to use a particular loop, you drag it onto a track.

Loops come in two flavors: Some are software instrument loops, which you put on software instrument tracks, and the others are real instrument loops, which (of course) you put on real instrument tracks.

You may have as many different loops on a track as you like, but they all have to be the same flavor. In other words, you can have an unlimited number of software or real instrument loops, but you can't have both kinds on the same track. Don't worry if this isn't making sense yet—it will soon . . .

Loops can be combined with your performances as long as the loop and performance are both the same flavor — real instrument or software instrument.

It's no biggie, though; GarageBand watches out for you behind the scenes. For example, you can't drag a loop onto the wrong kind of track —

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GarageBand doesn't allow it. And here's the best one of all: When you drag a loop from the Loop Browser onto the Timeline, GarageBand automatically creates the right kind of track for it.

So there's your answer: Loops are either real or software. They can only be used on the appropriate kind of track, and that kind of track is created automatically when you drag and drop a loop from the Loop Browser to the Timeline. For example, in the following figure, I dragged the Rock Steady loop from the Loop Browser at the bottom of the window into the Timeline. When I did that, GarageBand created a software

instrument track because Rock Steady is a software instrument loop.

You can tell which kind of loop you're looking at in the Loop Browser by its icon (a musical note for software instruments or a sound wave for real instruments). You can tell them apart in the Timeline by the shapes they contain (dots and dashes for software instruments and sound waves for real instruments). And if this book were printed in color, you would know instantly that software instrument loops are greenish and real instrument loops are bluish, on the Timeline and in the Loop Browser.



3. **Create a track by choosing Track → New Track, by pressing ⌘-W, or by clicking the New Track button on-screen.**

Whichever you choose, the New Track dialog box appears, as shown in Figure 4-4.

4. **Click the name of the type of track that you want to create (at the top of the window): Real Instrument or Software Instrument.**

GarageBand offers three different kinds of tracks: Real instrument tracks, software instrument tracks, and one master track per song. You can have as many real and software instrument tracks as your hardware can handle, but each song has but a single master track.

Figure 4-4:
The New
Track dialog
box.



When you're laying down tracks, real and software instrument tracks are the ones that you need to focus on. The master track comes into play in the mastering stage.

Here's how to choose the right type of track for the instrument that you want to record:



- **Real instrument tracks:** If you connect an instrument — an electric guitar, electronic piano, synthesizer, or any other electronic instrument or a microphone — directly to your Mac when you record, this device requires a real instrument track in GarageBand. Vocals are also considered real instruments in GarageBand, so you record them on *real instrument tracks*, as shown in Figure 4-3. There is one exception — a MIDI keyboard.
- **Software instrument tracks:** If you connect a MIDI keyboard to your Mac, you use a *software instrument track*. This is also the type of track to use if you want to record a track using GarageBand's built-in software instruments.

After you select the type of track that you want to record, a set of related options appears in the left. At this point, recording a real instrument track becomes a little different from recording a software instrument track. Chapter 6 contains more information on recording software instrument tracks; Chapters 7 and 8 have the scoop on recording real instrument tracks.



Nice touch: After you record a track, the “region” you just recorded appears on that track in the timeline in its proper color—real instruments are blue, and software instruments are green. The tracks even glow their proper color when you select them. Loops and real audio regions in the timeline are also colored this way. You'll have it memorized in no time; blue tracks are real instrument tracks, while green tracks are software instrument tracks.

Listening to tracks during recording and playback

Creating a multitrack recording is an iterative process. You record a track; when it's done, you listen to it to make sure it's okay before you move on. When you're certain that track sounds okay, you record another track and listen to it. Then you might listen to both tracks together. And record another track, and then listen to all three tracks together as well as in different combinations.

Later, during mixing and mastering, you can add an effect to a track or to the entire song and then you listen again. Or you change an instrument sound and then listen to the change. And so it goes — you record a bit, you listen a bit, you adjust a little, you listen a little, you tweak this and that, and you listen some more.

To play or record your project, you use GarageBand's transport controls, which move the playhead much like the controls you'd find on a tape recorder, audio CD player, iPod, or DVD player. These controls can be seen in Figure 4-5.

With all that playing, recording, and listening, it would behoove you to memorize the myriad ways you can move the playhead hither and yon:

- ✓ Click the Play button (or use the keyboard shortcut, the space bar) to play or stop the song.
- ✓ Click and drag the playhead to a new position in the beat ruler.
- ✓ Click anywhere in the beat ruler to move the playhead to that point.
- ✓ Click the Go to Beginning button (or use the keyboard shortcut, the Home key) to move the playhead to the start of the song.
- ✓ Click the Rewind button (or use the keyboard shortcut, the ← key) to move the playhead backwards one measure at a time.
- ✓ Click the Forward button (or use the keyboard shortcut, the → key) to move the playhead forward one measure at a time.
- ✓ Click the numbers in the time display and then drag up or down without releasing the mouse button to move the playhead to that point in the song. Or, double-click the time display, type in a new number, and then press Return.

Choosing which tracks you hear

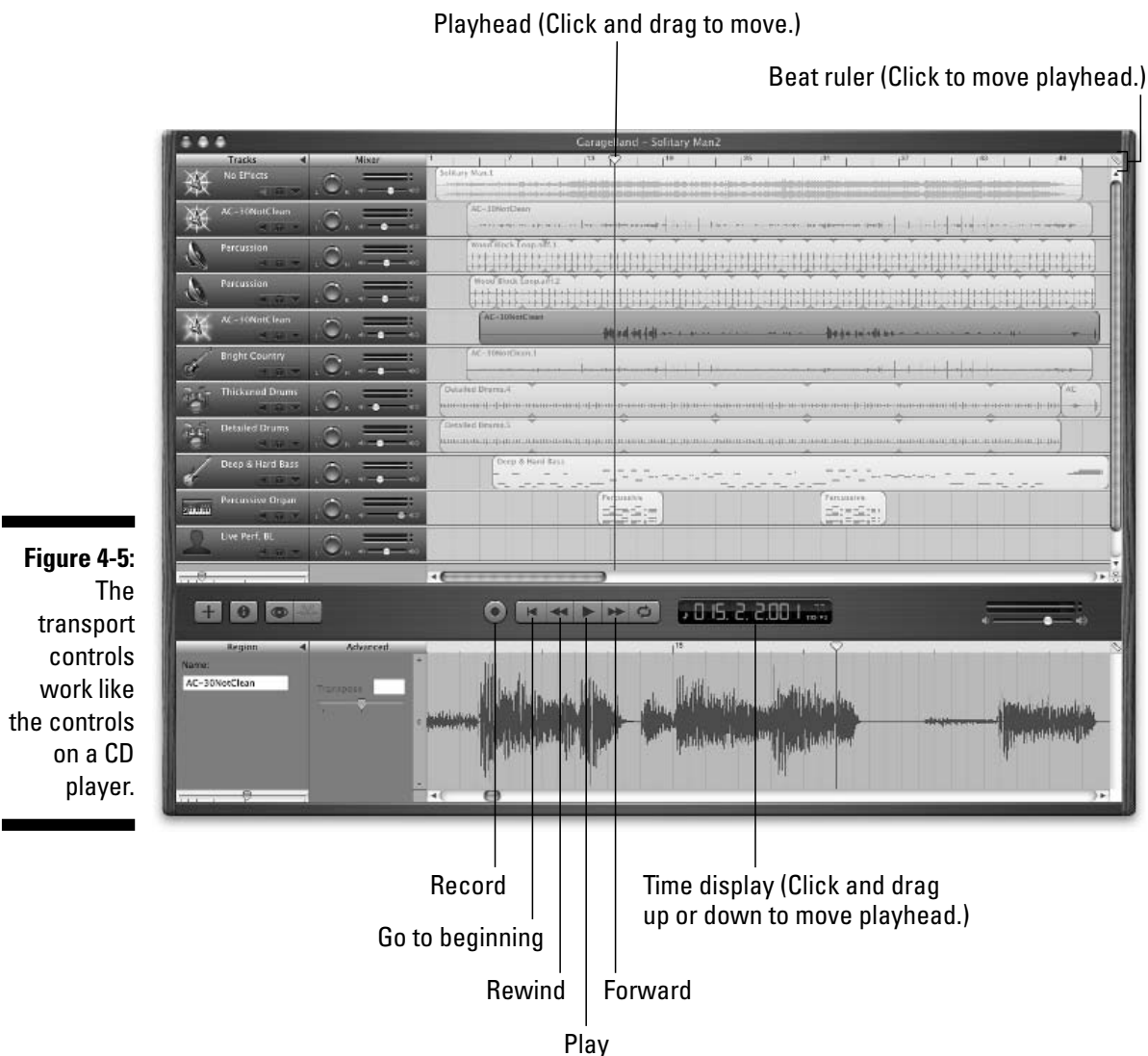
The Mute and Solo buttons are opposite sides of the same coin. You use them to determine which tracks you hear (or don't hear) during recording and playback. The Mute button mutes (that is, silences) the track; the Solo button

mutes every track except one. So, for example, if you had four tracks numbered 1 through 4, but only wanted to hear tracks 1 and 3, you would either mute tracks 2 and 4 or solo tracks 1 and 3.



Having both the Mute and Solo options is very convenient as you begin to have more and more tracks in your song.

The buttons “light up” when enabled, as shown in Figure 4-9. In that figure, the Mute button (which looks like a speaker) is enabled for the Grand Piano track, the Solo button (which looks like headphones) is enabled for the Male Basic track.



Mute and solo work during recording and playback to allow you to select only the tracks that you want to hear. You may mute or solo as many or as few tracks as you like (or none or all) during playback or recording.

Deciding a track's fate: Scrap bin, editing room, or mix?

After you play back a track, you may notice that it has some flaws. If you want to correct those flaws, you have a few options:

- ✓ **Punch in and re-record over the mistake.** See Chapter 9 for details on editing and tweaking.
- ✓ **Delete the region you just recorded and start over:** This is what to do if you want to re-record the whole part you just recorded. To delete the region, just click it in the timeline and press Delete (Backspace on some keyboards). Now move the playhead to the appropriate spot in the song and re-record that part.
- ✓ **Delete the track entirely:** If you decide the track just isn't working and probably never will, you can delete it by clicking on its name in the Tracks column and pressing ⌘-Delete (⌘-Backspace on some keyboards).

Changing a track's settings

You can change the settings of a track by double-clicking its name in the Tracks column, or by selecting it (with the mouse or the arrow keys) and then choosing **Track** → **Show Track Info** (or press ⌘-I) to display the Track Info dialog box, as shown in Figure 4-6.



Figure 4-6:
The Track
Info window
for the Male
Basic track.

You can choose a completely different instrument or change any preset for any effect you've applied to that track. In fact, the only limitation is that you can't change a real instrument track into a software instrument track, or vice versa. Other than that little hiccup, you may change the instrument on any track at any time.

Checking levels during recording and playback

A simulated LED display shows the level of the track in real time as you play or record, as shown in Figure 4-7.



Level is audio-speak for the relative loudness of the track.

Figure 4-7:
A quiet
passage,
with the
level display
unlit.



So, when you play or record, the level display for each track tells you that track's record or playback level at that precise point in your song. The playhead always shows what that point is on the Timeline. Wherever the playhead is located, that's where the song will resume playing or recording if you've stopped or paused.

Figure 4-7 was captured during the playback of the Male Basic vocal track. The playhead is near the 3-second point, which is a very quiet passage. As you can see, the level display is unlit, and the sound wave for the Male Basic track is flat at about the 3-second mark.

Now take a look at Figure 4-8, which was taken 2 seconds later when my voice was much louder.

Figure 4-8:
A loud
passage,
with the
level display
fully lit (and
red on the
right).



The red LEDs on the right end of the level display are your enemies. You want to see as little of them as possible when you record a track. If you see too much red, the track is too “hot,” and it sounds broken up and distorted when you play it back. An old studio saying goes like this: “If you see much red, your track is dead.” Believe it.

In Figure 4-8, the little red dot just to the right of the rightmost red LED is called a *peak hold indicator* or *clipping indicator*. It lights up whenever your track has gone “into the red,” and it stays lit until you turn it off by clicking it.



If you notice that this dot is lit after you record a track, you should listen to the track very carefully. The track may have been spoiled if you recorded it in the red — or hot — zone.

If a track is too hot when you’re rehearsing or recording, adjust its level so you see little or no red, and then record (or re-record). The following section provides further details on adjusting levels.

Adjusting levels

When you record, you mostly use the level faders to keep tracks from being recorded too hot, which can ruin the take. Later, during mixing and mastering, you use the level faders to “mix” all your tracks so each instrument and voice is heard clearly.

There are two ways to adjust the level of a track, as follows:

- ✓ **Adjust the level of the entire track with the Fader control.** *Fader* is a pro audio term for a sliding control. The fader is located in the Mixer column (see Figure 4-9).
- ✓ **Adjust only part of a track with the Rubber Band control.** When you want to make part of a track louder or softer than the rest (or adjust its level in more sophisticated ways), you use a “rubber band” Track volume

control, which appears below the track when you click the triangular Track Volume button. There is no pro-audio term for rubber band controls; they're strictly a computer innovation. If you've used iTunes or Final Cut Pro, you know how to use rubber band controls already; if not, I'll show you a little later in this section.

Figure 4-9:
The Level
Fader and
Rubber
Band
controls.



But I'll start with the faders, which you click on and slide to the left to lower the level and slide to the right to raise it. In Figure 4-9:

- ✓ The Grand Piano track is silent.
- ✓ The Male Basic track plays at a normal listening level.
- ✓ The Fingerstyle Bass track plays very loud and is horribly distorted.

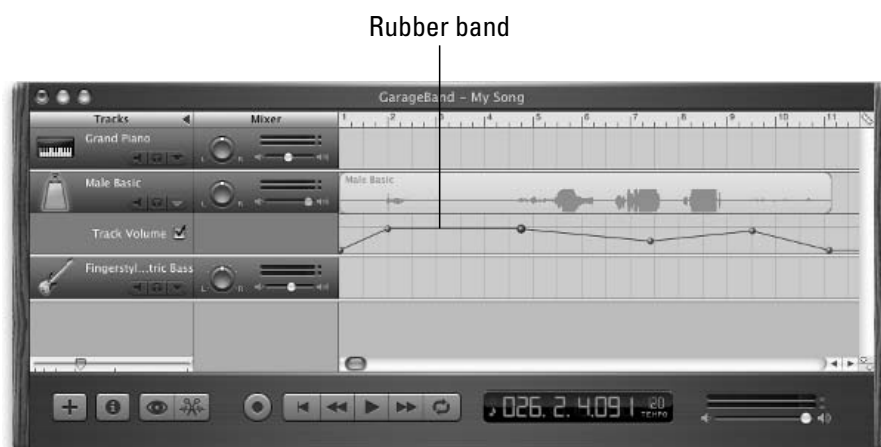
So that's about it for the Level Fader control, but you have a second way to adjust the level of a track that's often better, and here's why: The fader only lets you choose one level for the whole track. The way that I'm about to show you lets you change the level anywhere you like — and as many times as you like. For example, a track may start very quietly and build to normal levels (a “fade in”), play at that level until a really loud passage occurs, drop the level for the loud part, bring the level back to normal again, and then fade out.

To use the Track Volume rubber band control, follow these steps:

1. **Click the triangular Show/Hide Track Volume button in the Tracks column to make the rubber bands appear.**
2. **To change the level of a track at any point, click the rubber band and drag the resulting bubble up or down on the rubber band to raise or lower the level at that point in the song.**

Figure 4-10 shows a Track Volume rubber band.

Figure 4-10: This rubber band tells the track “Fade in, play a few seconds, get softer, get louder, and fade out.”



Here's a blow-by-blow description of what happens to the level for the Male Basic track in Figure 4-10:

<i>Time (Seconds)</i>	<i>Action</i>
0	Silent
0–2	Increase the level from 0% to 75% (fade in)
2–4.5	Remain at the 75% level
4.5–7.5	Decrease the level from 75% to 50%
7.5–9.5	Increase the level from 50% to 75%
9.5–11	Decrease the level from 75% to 0% (fade out)

The rubber band method gives you more precise control than using the fader, so you'll probably use the former on most of your tracks during mixing and mastering.



I recommend against using the Track Volume controller when recording. It can be done, but it's tricky and more likely to hurt your efforts and waste your time. I highly recommend using the level faders when you record (instead of the Track Volume controller) and only use Track Volume controllers when you mix. I discuss mixing in great detail in Chapter 10.

Polishing tracks

So you now know enough to lay down some tracks. After you've got most or all your tracks in the can, you can polish and embellish your song. You may want to redo a vocal part that isn't as good as it could be, add the gentle strains of a string ensemble in your choruses, or insert some handclaps or the sound of

a tambourine. You can trim noise at the beginning or end of a track, or cut out mistakes and delete them, and more, all of which comes under the heading of “editing” your tracks and is covered in Chapter 9.

One of the greatest things about multitrack recording is that it’s not over until you say it’s over. If you ever decide that something doesn’t sound right, even months after mixing and mastering the song, you can go back to your original GarageBand file and change it to your heart’s content, then remix and remaster, and you’re off to the races with a new version of your song.

Two things that you can do to polish your songs are overdubbing (redoing) any part of a track that isn’t as good as it could be and sweetening, which is adding new tracks to fill out the sound of your song. I describe these terms briefly in the following sections and in more detail in Chapter 9.

Overdubbing

Overdubbing is re-recording a part of a track to fix mistakes that were made in its performance or recording.

In the old days, you couldn’t overdub unless you had fairly sophisticated high-end tape machines that let you “punch in and punch out.” You would listen to playback, and right before the bad part of the track, the engineer would “punch” the Record button. As soon as you finished singing or playing the replacement part, he would punch the Record button again. What came before and after the replacement part remained intact, but the replacement track was grafted into the middle like magic.

Overdubbing doesn’t sound convincing if the replacement part sounds much different from the original part, so try to use the same setup that you used when you recorded the original track — the same microphones, room, instrument, audio interface, level and other settings, and so on — when you record overdubs on that track.

Multiple takes versus overdubs

You can reduce your need to overdub by recording multiple “takes” of a part. When you finish recording a take and you’re relatively happy with it, create a new track just like it and then mute the original track. Record the part again on the new track. If you like the new track, repeat the process; if you don’t, use the Undo feature and try again.

When you have three or four good takes in the can, you can usually pick and choose pieces from them and use them in place of overdubs to create one superb take. This way, you don’t have to worry about whether the overdub matches the sound of the original. Because the takes were recorded at the same time on the same setup, they should naturally sound the same.

One last thing: If you flub an overdub take (or any take, for that matter), GarageBand is very forgiving. Just undo the flubbed take by choosing Edit→Undo (or pressing ⌘-Z), and try again.

GarageBand makes overdubbing and punching in and out easier than it's ever been. I show you how in detail in Chapter 9.

Sweetening

Another way that you can make your song sound more professional and “finished” is to add tracks after your primary recording is done. Sometimes, you listen to a semifinished mix and realize that what this song really needs is one or more embellishments, such as

- ✓ Handclaps
- ✓ Bells
- ✓ Whistles
- ✓ Violins and cellos (also known as a string pad)
- ✓ Tambourines
- ✓ Or some other embellishment

You can sweeten a song anytime you want. If you've already mastered it, go back to the GarageBand file that you mastered from, add the new track or tracks, and remaster the song. Sweetening is also covered in detail in Chapter 9.

Mix That Sucka

When you think you're done recording tracks, overdubbing, and sweetening, you're ready to start mixing. When you mix a song, you're actually doing two things:

- ✓ Adjusting the level for each track until all the tracks blend beautifully together, with none too loud and none too soft
- ✓ Setting the pan position for each track to place it on the sound stage — left, center, or right

Here's an overview of how I work through the mixing process:

- 1. I usually start mixing by using the Fader Level controls until the relative level of each track is close to what I want to hear.**

This is a very rough mix, but it is fast and easy to get this far this way.

2. I use the Track Volume controls on tracks where I need better control over their level throughout the song.
3. After I get the individual track levels set to my liking, I adjust the pan location of each track.
4. Finally, I turn on and adjust effects (if necessary) for each track and then check all my levels and pans again.

Once I've done all that, I'm ready to move on to the final step, Mastering. Figure 4-11 shows a song that's mixed and ready to be mastered.



Figure 4-11:
This song is
mixed and
ready for
mastering.

Setting the pan

For every thing — turn, turn, turn — there is a season — turn, turn, turn. And for every track, there is a Pan knob — turn, turn, turn. Turn the knob to the left to make more of that track come out of the left speaker; turn it to the right to do the reverse. Figure 4-12 shows a track (Drum Kit) with its pan set to dead center (top), hard left (middle), and hard right (bottom).

In the top version, the track is panned dead center, and you can hear equal parts of it from the left and right speakers. In the middle version, the track is panned all the way to the left so that all the sound comes from the left speaker. And, of course, the bottom version shows the track panned all the way to the right.

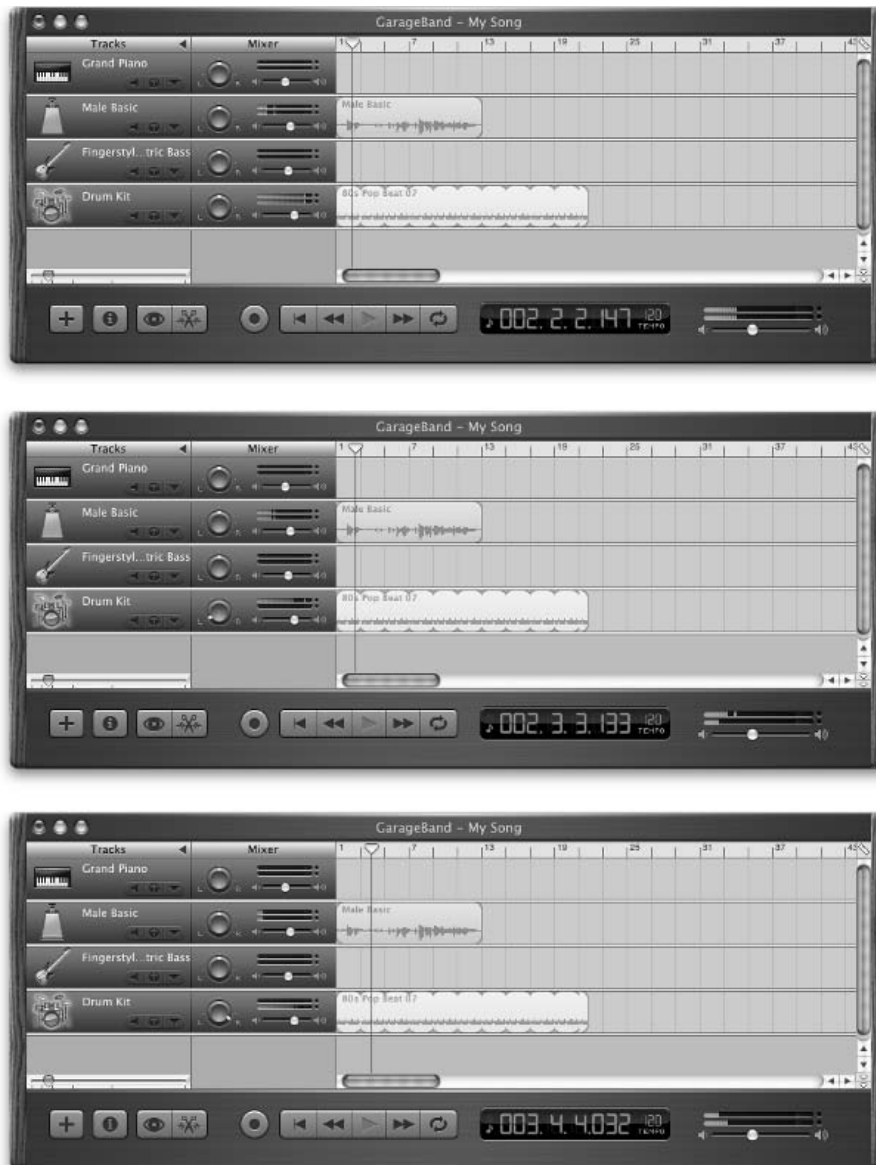


Figure 4-12:

A track panned dead center (top), hard left (middle), and hard right (bottom).

Notice that the middle and bottom versions have only one of their two rows of LED level-display lights lit, but the top version has both rows lit. That's because the level displays are showing you the stereo output for the track. The top row of simulated LEDs is the level of the left channel; the bottom row shows the level for the right channel.

So, to make a track sound like it's coming from slightly to the left of center, you would turn the Pan control slightly to the left of center. And so on.

(Lord and) Mastering

Once you're satisfied with your mix, heave a big sigh of relief — the end is near. All that's left is to master that puppy and be done with it.

Mastering is setting the song's level. This is mostly used to fade in and fade out, but mastering is also useful for emphasizing a quieter passage. You can also apply a master sound to the whole song.

All it takes is a few clicks. . .



. . . which makes it nothing like mastering a stereo recording in the real world. The art of changing a two-track mix into a fantastic-sounding Red Book Audio CD (e.g. the type of CD you buy at a music store) is just that — an art. Only a few hundred truly great mastering engineers exist in the world today, each an artist who can take a decent-sounding stereo mix and master it so that it sounds absolutely brilliant when you play the CD.

Mastering your song with GarageBand couldn't be easier. Here's an overview of steps:

1. **Enable (show) the Master Track by choosing *Track ⇨ Show/Hide Master Track* or pressing ⌘-B.**



Like the Metronome and Grid, the Master Track is a toggle. If the Master Track is showing, the ⌘-B command hides it; if it's hidden, this command shows it. So, if you don't see a Master Track at the bottom of your Timeline, press ⌘-B now.

2. **You may have to scroll down to see the Master Track; it always appears as the last item on the track list, as shown in Figure 4-13.**
3. **Double-click the words *Master Volume* (or choose *Tracks ⇨ Show Track Info* or use the shortcut ⌘-I) and choose a mastering preset.**
4. **Click the Master Volume checkbox to reveal the Master Track's rubber band controller and adjust the song's level that way if you like.**



The Master Volume rubber band is the easiest way to create the fade-in or fade-out effect at the beginning or end of your song.

In Figure 4-13, I've set up the master volume rubber band to fade in quickly at the beginning of the song and fade out slowly at the end. I've also got the first part of the bridge vocal a little louder than the rest of the song, because it had some quiet, delicate guitar work. (Yeah, sure.)

5. To apply a preset sound to the Master Track, either double-click it in the Tracks column (it shows Master Volume in Figure 4-13) or select the track with a single-click and choose **Track** → **Show/Hide Track Info** (or press **⌘-I**).

Whichever method you choose, you should see a Track Info window just like the ones that you used for Software Instrument and Real Instrument Tracks, as shown in Figure 4-14. In the Track Info window for the Master Track, the left column contains categories and the right column contains presets in that category.

6. Try a few presets and see if you like them — or maybe you did such a superb job mixing the song that it doesn't need any master effects applied.

Figure 4-13:
The Master
Track
always
appears
at the
bottom
of the
track
list.



Figure 4-14:
The Track
Info window
for the
Master
Track.



7. **In any event, when you're satisfied with the sound that you're hearing, choose File→Export to iTunes.**

In a few moments, you can switch to iTunes and listen to your masterpiece.

And that's that. You've laid down the tracks and produced, mixed, and mastered your song.



At this point, the song may not really be done. If you want to get the best possible song, you still have a bit more work ahead of you:

1. **Listen critically to the song in iTunes while you burn it on an audio CD.**

Play the CD on your favorite audio systems: in your car, your portable CD player with headphones, and your boom box. You may even want to play the CD on your Mac (which will sound slightly different than when you play it from the hard drive using iTunes).

2. **Throughout the process, take notes on what you hear and what you don't hear — and what you think you would like to hear.**

3. **Remix and remaster according to your notes.**

4. **Repeat the process until you're totally satisfied with the song.**

Now, it's really done.

For details on tweaking the Master Volume, applying presets, and more, see Chapter 11, which covers mastering in more detail.

Managing Song Files



Don't trash your GarageBand files after you master a song. You may want to remix, sweeten, and remaster the song, and you can't do it if the GarageBand file isn't available.



When and if you remix or remaster a song, add a number or descriptive word or two to the new version. If you added some tambourine and handclaps to a song named "Bliss," name the revised version something like "Bliss2" or "BlissT&C." Then, you at least have a chance of finding the version that you want a few months from now.

When a song is absolutely perfect, you can add something like GoldenMaster (for example, "BlissGoldenMaster").

Note: I have never finished a song that was even close to being absolutely perfect, but I'll probably add GoldenMaster to its name if I do.

Why and when to consider Save As rather than Save

One last thing: If your song is good, or even if you think it may be pretty good, it behooves you to save early and save often while you work on it. I save every few minutes. If I get out of the chair while a project is open, I save the file before I walk away from my desk.

And if your song is really, really good — or really, really important — consider using the Save As command to create backup copies, too.

I prefer to use Save As (choose File⇨Save As or press ⌘-Shift-S) to save songs on a different hard drive than the original. But even if you don't have an extra hard drive, using the Save As command to create a backup copy of your song file may be the most important thing you do all day.

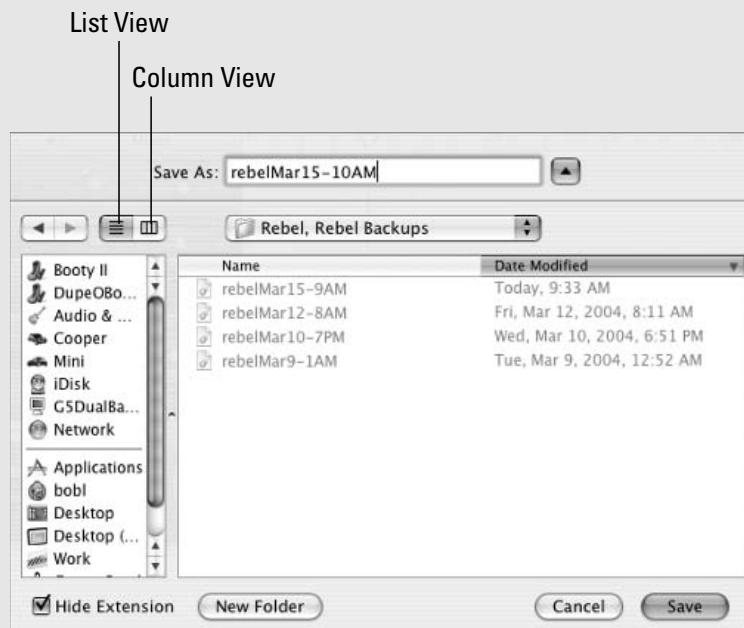
If you have only one copy of a song file, it can be lost in a heartbeat. If you use the Save As command to create a backup copy, however, you'll have a copy that's frozen at that moment in time. You can always use the backup if something awful happens to the original. The more

important the song, the more often you should stash away a backup copy of it.

Warning: After you perform a Save As command, the version of the song on your screen is the new one that you just saved (as). You may (or may not) want to close it and reopen your original song file. You should know which file you're actually working on and where that file resides (so that you can reopen it and work on it again after you quit GarageBand).

I put my backups on a separate FireWire hard drive, appending time and date information to each new version. If the original song file is called *rebel*, its backup copies would be named *rebel030604-5p*, *rebel030904-2a*, and so on.

Tip: Adding the date and time is completely superfluous these days, but because I've done it that way for years, it has become a habit. So even though Mac OS X makes this practice unnecessary by letting you sort files in an Open dialog box by their modification date, I still find myself doing it my way.



If you don't see a *Date Modified* column in your Open dialog box, click the List View button. Click the words *Date Modified* in the column header to sort by modification date; click the words *Date Modified* again to reverse the sort order (that is, to sort from A to Z or from Z to A). Neat!

Trust me: This can be a lifesaver if you totally screw up a song, if you delete tracks that you didn't mean to delete (and didn't undo), if your Mac and/or hard drive are damaged, or if the file becomes corrupted. Many fates can befall a song file, and most of them have unpleasant consequences if you don't have a backup.

Part II

Laying Down Tracks

The 5th Wave By Rich Tennant



In this part . . .

Because you don't need to have a single shred of musical talent to create a song using Apple Loops, I discuss loops first in Chapter 5. With that groundwork laid, I move along to explore the wild world of MIDI in Chapter 6, which delves into the art and science of laying down tracks using GarageBand's built-in software instruments. Then, it's on to the big time — recording vocals and acoustic instruments with microphones in Chapter 7, and recording guitars and electronic instruments in Chapter 8. By the time you've finished reading Part II, you'll know everything you need to know about tracks and how to use them.