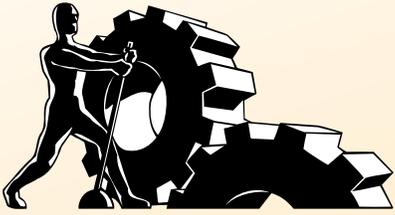


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# Recording with GarageBand

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# Read Me First

Welcome to *Take Control of Recording with GarageBand '11*, version 1.0, published in March 2011 by TidBITS Publishing Inc. This book was written by Jeff Tolbert and edited by Geoff Duncan.

This book teaches you how to record real and software instruments, how to work creatively, and how to turn your recordings into a great-sounding piece of music in GarageBand '11 (part of Apple's iLife '11 suite), also known as GarageBand version 6.

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## Updates and More

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You can access extras related to this book on the Web (use the link in [Ebook Extras](#), near the end of the book; it's available only to purchasers). On the ebook's Take Control Extras page, you can:

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- Get a discount when you order a print copy of the ebook.

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## Basics

---

In reading this book, you may get stuck if you don't know certain basic facts about GarageBand or if you don't understand Take Control syntax for things like working with menus or finding items in the Finder.

Please note the following:

- **Menus:** When I describe choosing a command from a menu in the menu bar, I use an abbreviated description. For example, my description for the menu command that activates the metronome is “Control > Metronome,” which refers to the Metronome command under the Control menu.
- **Path syntax:** I occasionally use a *path* to show the location of a file or folder in your file system. For example, the default GarageBand install puts GarageBand's Learn to Play lessons in the `/Library/Application Support/GarageBand` folder.

The slash at the start of the path tells you to start from the root level of the disk. You will also encounter paths that begin with `~` (tilde), which is a shortcut for any user's home directory. For example, if a person with the user name `joe` wants to install fonts that only he can access, he would install the fonts in his `~/Library/Fonts` folder, which is just another way of writing `/Users/joe/Library/Fonts`.

- **Finding GarageBand's Preferences:** I often refer to preferences in GarageBand that you may want to adjust. To display the program's preferences (not to be confused with the system-wide settings found in the System Preferences application), choose GarageBand > Preferences (or press Command-). Within that window, click a button at the top to display a pane for that category of preferences. Instead of giving detailed directions each time, I refer to each pane using an abbreviated notation such as “go to GarageBand's Audio/MIDI preferences.”

### **For the Sake of Brevity...**

You'll see under GarageBand > About GarageBand that this the program is called GarageBand '11, and that the latest version number (as of this writing) is 6.0.2. To keep things simple, I refer to it as GarageBand '11 when I'm talking about this version and call it simply GarageBand the rest of the time.

### **Listen As You Learn!**

I occasionally give an audio example by linking to a song at Apple's iTunes Store. You can click the link to connect to the iTunes Web-based preview; to hear the example, hover over the song title and click the play button that appears.

---

## **What's New in This Edition**

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I updated this book to cover new features in Apple's latest upgrade to the program, GarageBand '11, as follows:

- Apple has added seven new amp models to GarageBand '11. I discuss all 12 of GarageBand's amps and tell you what they're supposed to represent in [Just What Are Those Amps Anyway?](#)
- GarageBand also has five new stompboxes for use on Electric Guitar tracks. I describe them all in [Understand GarageBand Effects](#).
- Flex Time and Groove Matching help you clean up sloppy performances without complicated editing. I tell you how to use them in [Fix It with Flex Time](#) and [Get In the Groove](#).
- From analog to digital, you can play with quite a few synthesizers in GarageBand. I explain how they work in [Program Your Own Synth Patches](#).
- I added a section on using score view. Although score view is briefly covered in my other book, *Take Control of Making Music with GarageBand '11*, I give you more detailed instructions in [Learn the Score](#).
- Compressors and limiters can be a bit daunting at first. I added a few tips about using them in [Dynamic Effects](#).

- I updated and remixed the two sample songs, and added links to their GarageBand project files. Read about the changes in [Listen to the Sample Songs](#).
- I added a few small tips and tricks in various sections, and made small edits here and there to keep the book relevant to the new version of GarageBand.
- Finally, I updated screenshots to reflect GarageBand's new interface, and added many more to illustrate tricky concepts.

**Note:** This book talks about the Mac OS X version of GarageBand '11, not the iPad version. The two applications share some features, but this book does not discuss the iPad version at all.

# Introduction

GarageBand has changed the way Mac users create music. Many of us thought we'd need to spend hundreds, if not thousands, of dollars to make decent recordings. Instead, GarageBand makes recording much more affordable. Sure, it doesn't include some features of higher-end programs, but what it does for the money is simply amazing.

Songwriters can make great-sounding demos to play for their bands or prospective record labels. Proud parents can record their children for friends and relatives. Those of us who never fulfilled our rock-and-roll fantasies in our youth have another chance.

GarageBand's recording process is easy and intuitive. Even if you have no experience in a recording studio, this book will get you working like a pro in no time. Whether you're recording using a MIDI keyboard, an electric guitar, or with a vocalist using a microphone, you don't need a lot of fancy equipment to get great-sounding tracks. I show you bucketloads of tricks you can use to get the best sound possible out of your equipment. Even inexpensive keyboards, microphones, preamps, and guitars will give you wonderful results.

One thing to keep in mind: GarageBand isn't meant to compete with top-of-the-line recording software such as Pro Tools or Logic Pro. The truly demanding user will discover GarageBand's limitations. GarageBand can't control audio or automation as well as its high-end brethren, its effects and instruments aren't as sophisticated, and you can't apply effects to groups of tracks at once, among other things. But for the typical songwriter, home recording artist, or weekend rock-and-roller, GarageBand has more than enough mojo to get your ideas out of your head and into the real world.

I assume that you're somewhat familiar with GarageBand. If you've played with it a little already, you'll probably feel right at home. If not, I suggest my other book, *Take Control of Making Music with GarageBand '11*, to learn fundamental aspects of the program, as well as tips on arranging songs and using loops.

# Quick Start to Recording with GarageBand

GarageBand offers a variety of ways to record music. *Software Instrument* tracks use sounds generated by your computer, using prerecorded samples or models of different instrument types; *Real Instrument* and *Electric Guitar* tracks require you to plug an external sound source (such as a microphone or an electric guitar) into your Mac. *Electric Guitar* tracks also give you access to GarageBand '11's many amp models and [stompboxes](#).

To use this Quick Start section, choose the heading that describes your situation or your interests. Then, follow its suggestions. However, I recommend reading through the entire book to get the most from your GarageBand experience.

## **Plan ahead:**

- Choose the best way to structure your recording time in [Strategize Your Recording Session](#).
- Decide whether to use a Software Instrument, a Real Instrument, or an Electric Guitar in [Choose a Recording Method](#).

## **Record Software Instruments:**

- Do you have the equipment you need? [Learn about MIDI Gear](#) and find out what's required for using Software Instruments.
- Review [Set Up Your MIDI Keyboard](#) for information and troubleshooting on getting connected.
- Check out [Record Your Tracks](#) to get your ideas into the computer.
- Learn how to use GarageBand's synthesizers in [Program Your Own Synth Patches](#).
- Tweak your parts so they're just right in [Edit the Performance](#).

## **Record Real Instruments:**

- Learn about microphones and electric guitars, and find the best (and cheapest) way to get a signal from your instrument into your Mac in [Consider Your Equipment](#).

- [Set Up Your Input Device](#) to get yourself connected and ready to record.
- Get a killer sound out of your guitar or bass, eliminate hum, and record a great performance; read [Use a Real Instrument Track](#) and [Use an Electric Guitar Track](#).
- Learn about microphone placement and how to best use a mic to record vocals, instruments, or anything else in [Record with a Microphone](#).

### **Rerecord a section:**

- Make a mistake? Have no fear. Check out [Fix a Section](#) to learn how to correct errors, including how to correct pitch and timing.

### **Understand effects:**

- You can make your song shine by adding cool effects. Read [Understand GarageBand Effects](#) to learn, for example, the difference between a compressor and a phaser.

### **Go backstage with GarageBand tips and tricks:**

- [Learn GarageBand Tips and Tricks](#) such as making a guitar sound like a bass, turning your tracks into loops, and more.

### **Check out the sample tunes:**

- I created two songs to highlight many of the techniques described in the book. [Listen to the Sample Songs](#), read descriptions of how I made them, and download the GarageBand project files.

# Strategize Your Recording Session

GarageBand lends itself to many uses. You can make a quick and dirty demo of an idea you had in the shower, or you can record your latest rock opera to sell on CD. Your intentions for a recording dictate how you set up and record. In a nutshell, imagine a continuum with speed, ease, and cheapness on one end, and quality of sound and performance on the other.

Your plans for the final recording should determine where you stand on this continuum; here are some examples:

- **Speed:** If you want to quickly plug in and record a brilliant song idea you just had, speed is of the essence. Sound quality is secondary—use whatever is handy and easy, and don't worry about small mistakes or imperfections.
- **Quality:** If you're making a final recording for a CD or an iMovie project, you want quality. You should use the best equipment you have and spend the time necessary to get everything right. Right doesn't necessarily mean perfect—often slight imperfections are what give a song its life and excitement—but you don't want wrong notes or an electrical buzz ruining your song. Work carefully to get good sounds and strong signals.
- **Middle of the road:** If you're recording a song demo to play for your band or working out ideas for a more finished recording later, you lie in the middle. You want the recording to sound nice so you can approximate the final product, but it need not *be* the final product: small imperfections are okay, and spending three days to get the perfect guitar sound makes no sense.

**Note:** Musicians often find themselves trying to replicate a great take from a demo, and sometimes end up using parts of their demos in final recordings. There's something freeing about the lack of pressure when recording a demo that can lead to inspired performances. It can pay to make sure your guitar isn't buzzing and your recording isn't [clipping](#)—just in case.

# Choose a Recording Method

GarageBand uses three types of tracks: [Software Instruments](#), [Real Instruments](#), and [Electric Guitar](#) (actually a variation of Real Instruments). The casual listener may not be able to tell the difference, but they involve completely different ways of working.

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## Software Instruments

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Software Instruments use *MIDI* (Musical Instrument Digital Interface) data rather than actual sound waves to create a track. MIDI is a digital language used to connect synthesizers, computers, and other electronic instruments. MIDI information includes details about the note played, its velocity (or volume), and any vibrato or pitch bending that was applied.

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***One at a time:*** A catch with Software Instruments is that you can record only one Software Instrument track at a time. Even though GarageBand offers multitrack recording, that applies only to Real Instrument tracks.

---

MIDI is a flexible format that can open up options that would otherwise be unavailable when recording. For example, not many people own drum sets. Even if you do, you may not have three or four (or ten or twelve) microphones to record professional sounding drum tracks. Maybe you want a flute in your song. Do you *have* a flute? You could probably rent one, or put a sign up at the local music school asking for flute players, but it would be so much easier to play the part on your keyboard. MIDI makes all this possible.

# Recording Software Instruments

Software Instruments are great tools for testing out ideas and working on your compositions, even if you plan on rerecording some of the tracks later with real instruments. And don't let your guitarist friends give you grief—there's absolutely nothing wrong with creating a song entirely from Software Instruments (see [The Software Instrument Song](#), later in the book).

---

**Missing something?** *The default installation of GarageBand leaves out 1.2 GB of loops and Software Instruments. If you're missing loops (like in **Figure 1**) see the sidebar below for instructions on downloading the missing content.*

---



**Figure 1:** If many of your loops are grayed out and have little arrows next to them, you haven't yet downloaded the additional 1.2 GB of content. See the sidebar below for instruction on how to install the extra Apple Loops and Software Instruments.

# Recording Real Instruments

Recording Real Instruments in GarageBand is a snap. Once your equipment is set up and you understand a few basic principles, it takes a matter of minutes to lay your ideas onto a track. But some preparation is required to get to that point.

## **The Most Important Audio Tip Ever**

A guiding principle of audio recording is to *always get the best sound possible* when you record. The reasoning is simple: if you use a lousy microphone to record your acoustic guitar, you're going to get a muddy or thin sounding guitar track. No amount of equalization will fix it because you can't add frequencies that aren't there. Use the best preamp you can afford, use good microphones and place them carefully, and make sure you have clean, strong audio *levels* throughout your signal chain.

## **Cousin of the Most Important Audio Tip Ever**

*Trust your ears.* If you try something I suggest (or anyone else suggests) and it sounds bad, don't do it! The buck stops at your ears. Maybe using a crappy microphone will sound cooler than you expect. What matters in the end is how the recording sounds, and especially how it sounds *to you*.

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## **Consider Your Equipment**

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To record Real Instruments, the first thing you need is, well, a real instrument. I mean this more broadly than you might think. A real instrument can be anything from a high-end electric guitar to a tin can—and if a tin can isn't handy, there's always your voice (although with some people it's hard to tell the difference). The term *Real Instrument* sounds intimidating and exclusive, but it's just meant as a distinction from Software Instruments covered earlier. Instead of producing MIDI data, Real Instruments make physical sound waves.

# Fix a Section

As with anything, every once in a while we all make mistakes. Fortunately, you don't need to rerecord an entire track to fix your mistakes. You can redo a small section of a track, and you can even fix timing and pitch.

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## Punch In

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In the audio world, rerecording a portion of a track is called *punching in*. It's a great way to rescue a performance that has one bad section.

### Punching In on a Real Instrument Track

When you punch in on a Real Instrument track, you need to duplicate all the conditions of the original recording or the repair will sound different. If you put your mic in another place or set the knobs on your guitar differently, you'll hear it on the recording. If at all possible, record punch-ins during the same session you record the rest of your track.

Here's how to punch in and a fix a mistake:

1. Select the track with the error.
2. Make sure Control > Snap to Grid is turned on, and align the playhead with the beginning of the section you want to replace.
3. Choose Edit > Split (Command-T).
4. Do the same at the end of the region with the mistake. This creates a new region in between the two points that contains only the section you want to replace.
5. Select this new region and delete it.
6. With the same track still selected, choose Track > Duplicate Track (Command-D).
7. Select the new track. If multitrack recording is enabled, either enable the selected track for recording or disable multitrack recording using Track > Disable Multitrack Recording.

# Learn GarageBand Tips and Tricks

It's no secret that GarageBand is entry-level music editing software. For the non-musician getting started, a peek at the controls and settings in Pro Tools or Logic Pro can fry synapses faster than a late 1960s road trip on the Rolling Stones' tour bus. But at the same time, GarageBand can perform feats that aren't immediately obvious.

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## Double-Track Vocals and Guitars

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*Double-tracking* is an old technique for thickening vocals and other types of tracks. The idea is that you record two takes of the same part and lay them on top of each other. The resulting product has a thicker sound and a unique quality. Double-tracking can also hide minor tuning flaws in vocal tracks. The two versions blend together and mask the out-of-tune bits.

To double-track a part, simply duplicate the original track (choose Track > Duplicate Track or Command-D) and rerecord your part onto the new track.

### Thickening a Track

Double-tracking isn't the only method of thickening a track. Other techniques include:

- ◆ Add chorus (see [Time-Based Effects](#)).
- ◆ Duplicate the track and offset the new track ever so slightly. It's tricky to move a track by tiny increments in GarageBand, but it can be done. You need to zoom the timeline way in.
- ◆ Use Track Echo (or AUDelay) to add a single, quick echo. Play with the delay time and mix to see how the sound changes.

# Listen to the Sample Songs

I wrote and recorded two short sample songs to use as examples of the techniques in this book. The first uses only Software Instruments and the second uses Real Instruments (except for the drums). You might want to listen to the song files with a set of headphones to hear the different parts more clearly.

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## The Software Instrument Song

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For the Software Instrument song, called “The 30 Percent Factor” ([30percent3.mp3](#)), I began with the acoustic guitar part. It came to me while I was noodling around on my keyboard, so I recorded it on the spot. I repeated it four times before coming up with more parts.

I used the Jazz Kit for the drums, and I played the part on my keyboard. It’s a slightly unusual drumbeat, but it seemed to flow naturally from the guitar part and it came quickly. I didn’t need to record many takes of it before it felt right. I added an Overdrive effect to thicken the sound a little and get rid of some of the high end.

The organ was next. So far the song had a fairly fast pulse, with two instruments playing eighth and sixteenth notes. I wanted to contrast that with some longer, slower notes, and organ seemed like the perfect instrument. I held a couple two-note chords with a staccato figure at the end to tie it into the rest of the song and provide some punctuation.

At that point, the song definitely needed some bass; there were absolutely no low frequencies at all. This was fine for the intro, but once the organ came in, I wanted the song to fill out more. I felt that the rubbery-smooth sound of a fretless bass would complement the mellow atmosphere well. The descending slide is worthy of note: this is actually one key press. When you strike a note at maximum velocity, GarageBand plays a whole-note slide down. And when you play a note at just below maximum velocity, GarageBand plays it with vibrato

# Learn More

For additional information, consult these Web sites, books, magazines, and videos.

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## Web Sites

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**Apple's GarageBand Discussion Board:** One of the best sources for GarageBand information, tips, and answers. The archives are extensive and extremely useful. I learned a lot from the forum when I started using GarageBand. No question is too tricky, too unusual, or too stupid, and users are for the most part helpful and courteous.

<http://discussions.apple.com/category.jspa?categoryID=127>

**Audio Recording Terms Glossary:** A handy one-stop resource for definitions of audio terms.

<http://www.recordingeq.com/reflib.html>

**AudioTutsPlus:** A great site with a wide array of audio-related tutorials. Most are geared towards professional applications like Logic and Cubase, but there's still plenty of use to GarageBand users.

<http://audio.tutsplus.com/>

**The Garage Door:** Hosted in part by Hangtime, a man familiar to anyone who frequents Apple's GarageBand discussion board. The site is full of tutorials and resources for GarageBand users, including news about free loops and links to other GarageBand-related sites.

<http://www.thegaragedoor.com/>

**GuitarNuts:** If you're interested in upgrading or shielding your electric guitar, this is the site for you. You'll find more details than you ever wanted to know about guitar wiring.

<http://www.guitarnuts.com/>

**iCompositions.com:** One of several sites where GarageBanders can post songs.

<http://www.icompositions.com/>

# Appendix A: GarageBand MIDI Drum Sounds

**Table 2**, below, shows the keys on your MIDI keyboard that map to drum sounds in the Rock Drums kit. In most cases, other acoustic drum kits are similar. The digital drum kits differ more significantly from this list, so you'll have to experiment to find sounds you like.

<b>Table 2: Key Map for the Rock Drums Kit</b>			
<b>Key</b>	<b>Instrument</b>	<b>Key</b>	<b>Instrument</b>
G#0	Open-closed high hat	F3	High timbale
A0	Snare roll	F#3	Low timbale
A#0	Pedal high hat	G3	High agogo
B0	Bass Drum 1	G#3	Low agogo
C1	Bass Drum 2	A3	Cabasa
C#1	Rim shot	A#3	Maracas
D1	Snare 1	B3	High whistle
D#1	Snare flam	C4	Low whistle
E1	Snare 2	C#4	Guiro (high)
F1	Low floor tom	D4	Guiro (low)
F#1	Closed high hat	D#4	Clave
G1	High floor tom	E4	Wood Block (high)
G#1	Half-open high hat	F4	Wood Block (low)
A1	Tom 1a	F#4	Mute Cuica
A#1	Open high hat	G4	Open Cuica
B1	Tom 1b	G#4	Mute Triangle
C2	Tom 2a	A4	Open Triangle
C#2	Crash cymbal 1	A#4	Egg Shaker
D2	Tom 2b	B4	Sleigh bells
D#2	Ride cymbal 1	C5	Bell tree
E2	China crash	C#5	Gong
F2	Ride bell	D5	Taiko drum
F#2	Tambourine	D#5	Bowed cymbal
G2	Splash cymbal	E5	Guiro 2
G#2	Cowbell	F5	Udu
A2	Crash cymbal 2	F#5	Metal drum
A#2	Vibraslap	G5	Cajon
B2	Ride cymbal 2	G#5	Cajon 2
C3	High bongo	A5	Goat hoof rattle
C#3	Low bongo	A#5	Rain stick
D3	High conga (muted)	B5	Tom with jingles
D#3	High conga (open)	C6	Finger snaps
E3	Low conga		

# Appendix B:

## Troubleshooting

Like most programs, GarageBand has its share of quirks and issues. These tips and workarounds should help you remain productive and keep using the program to its full potential.

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### Improving Performance

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Although its performance has improved in recent versions, it's not uncommon (especially in larger or more effects-heavy projects) for GarageBand to stop in the middle of playback and greet you with confusing messages like "System Overload" or "Disk Is Too Slow." If this happens to you, here are some suggestions:

- **Quit all other programs:** Especially quit programs that perform background tasks such as checking for email. GarageBand is greedy; it wants *all* your computer's attention.
- **Turn off FileVault:** If you use Apple's FileVault to encrypt your data, either turn it off or store your song files outside your Home folder. Remember that the Documents and Music folders are in the Home folder, and GarageBand automatically stores song files in the Music folder.
- **Lock your tracks:** Locking tracks, especially Software Instrument tracks, greatly reduces the processor drain. When you lock a track, GarageBand renders it to disk, meaning that instead of having to generate instrument sounds and effects on the fly, the program only has to play the rendered track. It's much easier for your poor little overworked processor. If I see the dreaded red playhead or get system overload messages, I can make the problem go away by locking a couple of tracks.

# Glossary

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## Terms

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**AAC:** A compressed audio format, designed to be the successor to [MP3](#). It generally has better sound quality than an MP3 of the same size. AAC is Apple's default file format for iTunes and the iPhone.

**Active electronics:** An electric guitar or other instrument with active circuitry has an on-board preamp that boosts the signal. Active pickups generally offer wider dynamics and a fuller-range sound than passive pickups, but usually require an onboard battery to operate.

**AIFF (Audio Interchange File Format):** A sound file format developed by Apple. Most Macintosh audio software can handle the AIFF format, and GarageBand exports files in AIFF format. Expect a GarageBand-exported AIFF file to consume about 10 MB of disk space per minute of song. See [MP3](#).

**amplifier:** A device that increases the amplitude of a signal, thereby making it louder.

**automation:** The ability to record track, instrument, and effect parameter changes like volume, panning, and effect level so they change automatically in real time as a track plays. Most modern [DAWs](#) feature some form of automation.

**baffles:** Pieces of sound-absorbing material used to block sound waves from entering or leaving a certain space.

**bass:** The low frequencies of human hearing. See [midrange](#), [treble](#).

**bleed:** A situation where audio from one device is unintentionally picked up by another during recording. For example, if a singer is wearing Walkman-style headphones to monitor the song's instruments, the music could be picked up by the microphone she's using.

**capsule:** The sensitive transducer in a microphone. The capsule is typically covered by a wire mesh grille that protects it from harm. See [microphone](#).

# About This Book

Thank you for purchasing this Take Control book. We hope you find it both useful and enjoyable to read. We welcome your comments at [tc-comments@tidbits.com](mailto:tc-comments@tidbits.com).

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## About the Author

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Seattle-based musician and composer Jeff Tolbert writes music for films, advertising, and video games. His latest work includes scores for the films *Walk Right In* and *Modern Views*, as well as the video game *Faerie Solitaire* and numerous other smaller projects. He's also the president of the Seattle Composers Alliance, a group of Seattle composers working in the field of film and media composition.

Jeff plays bass, guitar, keyboards, ukulele, and trombone. He's a veteran of innumerable home and studio recording sessions, and has played in many bands over the years, including Repulsions and Afflictions, Fine Dishware of the Lord, What Fell?, the Goat-Footed Senators, the diary of Anne Frank String Quartet, 80 Bones, the

Penelopes, and the Fireproof Beauties. He's currently playing bass with Tiger Zane and in the James Howard Band.

Jeff has been a GarageBand user since its release in 2004. He now mostly uses Logic Pro, GarageBand's big brother. Hear Jeff's work and read about his latest projects at <http://www.jefftolbert.com/>.

## Author's Acknowledgments

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## Shameless Plug

If you don't have it already, be sure to get a copy of *Take Control of Making Music with GarageBand '11*. It covers using loops, basic song composition, and mixing in GarageBand.



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## About the Publisher

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Publishers Adam and Tonya Engst have been creating Apple-related content since they started the online newsletter *TidBITS*, in 1990. In *TidBITS*, you can find the latest Apple news, plus read reviews, opinions, and more (<http://www.tidbits.com/>). Adam and Tonya are known in the Apple world as writers, editors, and speakers. They are also parents to Tristan, who thinks ebooks about clipper ships and castles would be cool.

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*Thanks to Tristan for adding some fun on April 1 by putting a stuffed zebra in the refrigerator.*



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