Reading for Life -- from home

Doing radio recordings at home is a bit more work than letting an engineer run the board for you. But it's not overwhelming and it has its own satisfactions. I've been doing home recordings for a few months now, and I confess that I love the chance to edit out my worst fumbles.

For those who want to give it a spin but don't know where to start, I'm going to walk you through what works for me -- what I bought and how I use it. At almost every turn there are other options you can choose. I'll briefly mention a few of those alternatives.

MICROPHONE

I have a Shure SM58 Microphone (actually, two since I record two-host shows). I've seen this described as "the most popular microphone in the world," known for its sound quality and durability. It has a built-in pop filter and an internal shock mount (which helps reduce vibration noise). Get it with an XLR cable unless you already have one. You can get it with cable for about $110 at places like J&R Music World or B&H Photo, which should also have all the other hardware I mention here. You'll pay about ten dollars less for the mic without the cable.
    It comes with a stand adapter, but you'll also need a stand to screw that into (more on that later).

> Alternatives: USB microphones produce signals that are ready to go into a computer, and don't require the adapter that I'll describe in the next section. Some people think USB mics don't have as high a sound quality; I haven't heard them side by side so I can't speak to that.
>
> Whatever microphone you choose, I recommend a *dynamic cardioid* microphone.
>
> Dynamic (as opposed to condenser) means it's sturdy and isn't so sensitive that it will hear a pin drop across the room. Unless you're in a soundproof booth, you WANT it to be less sensitive.
>
> Cardioid means a heart-shape pickup pattern, so it will MOSTLY hear what's right in front of it, somewhat reducing the amount of background noise.
>
> If you get a mic without a built-in pop filter, you'll probably want to get one separately.

AUDIO ADAPTER

Unless you have a "USB Microphone" you'll need a way to convert the analog audio from the mic into digital audio for the computer.

I started with a "Blue Icicle," a simple $50 connector. It takes the signal from the microphone through a standard microphone cable (known as an XLR, with round 3-pin connectors). Using the USB cable that comes with the Icicle, connect it to a USB port on your computer. One disadvantage: it has no headphone jack. If you like using a headset while you record, you DO want to connect it to the adapter itself, and NOT to the computer (which would add a delay to your voice).

After I started recording co-hosted shows (and after we got really tired of passing one microphone back and forth) I upgraded to an Alesis Multimix audio adapter ($70) that takes inputs from two mics. It also has a headphone jack and volume controls. Unlike the Icicle or the alternative listed below, it requires its own AC power source.

Alternatives: Shure has a $99 adapter, the X2U, with a volume control and headphone jack. Some stores, including B&H and J&R sell it packaged with the Shure SM58 microphone for about $200.   And, again, if you get a USB microphone, you do not need an audio adapter.

MICROPHONE STANDS

With the kinds of microphones I'm recommending, you'll sound best when they're just a few inches away from your lips. That's called the proximity effect; it makes your voice sound richer. Keep that in mind when you select a stand.   I use two different stands. Both make it easy to get the mic close to your mouth while keeping some desk surface free for reading materials.

 -- A small boom (about $25) which sits at the back of the table and suspends the mic over the reading area (like the Samson MB1 Mini Boom Stand) .

-- A 13" Gooseneck that screws into a Podium Flange that's screwed into the tabletop. (total about $8)

Alternative: A simple desk stand (around $15) may work for you, just be sure you don't have to crouch. Some USB Microphones come with a stand.

I also use a $12 copy stand from Staples to prop up my magazine while I read. Actually, to make it high enough I put that stand on a copy of Harry Potter and the Deathly Hallows ($23)

> Alternative: Webster's Collegiate Dictionary

COMPUTER

The heart of the system. I use an old Dell PC. You will, of course, need an internet connection to upload the files.

> Alternatives: I think any reasonably modern PC or Mac with USB ports will do.
> Even the little netbooks that cost a few hundred dollars can do the trick, though
> you'll probably be happier if you have a bigger screen and a mouse.

SOFTWARE

I use a great audio recording/editing program called Audacity. It's powerful, easy, and free. This link:

http://audacity.sourceforge.net/download/

will get you to downloads for Windows or Mac. You'll be given a choice between the 1.2 series and the 1.3 Beta. These instructions apply to the Beta version, which I recommend.

You'll also need to download something called a LAME encoder, also free, which will allow you to save your programs as MP3 files. The links for that, and instructions for installing it, are available through that same site.

> Alternatives: If you have a Mac, you probably already have Garage Band,
> which can also record your program. It uses iTunes to create MP3 files.

And you'll need a way of uploading your completed files. I use a free program called FileZilla, which makes the whole process quick and easy.

> Alternative: Internet Explorer has a "File Transfer Protocol" function (FTP),
> which lets you drag-and-drop files to the destination computer.

TIMER

You'll want some way of keeping track of time. I found this digital timer online for $7 with free shipping. It took about three weeks to arrive from Singapore, but it's just perfect for this project.

http://www.dinodirect.com/Digital-Large-Screen-Count-Up-Down-Alarm-Kitchen-Timer-Light-Yellow.html
And that's all the "stuff" you need.

PROCEDURE

- Make a comfy quiet set-up

   As best as you can, put your microphone back from a window and at least a few feet away from sound sources in your home, including appliances and (if it's noisy) your computer. I met one reader who turns off her refrigerator when she records. DO remember to turn it back on when you're done!

- Set up Audacity (this will NOT be a complete guide to Audacity; there are plenty of online instructions for that. I'll walk you through specifics for this project)

   Before you record, make sure the window in the Audacity screen called "Project Rate" reads 44100 (that's the number of audio samples it takes each second).

   You'll see a cluster on the Audacity screen with four rectangles - 2 labeled L and 2 labeled R. That's your Meter Toolbar. Click the down-arrow next to the microphone logo and select "Start Monitoring." When the mic is hooked up and spoken into, this meter should show you sound levels. Nearly all of your sound should register at or below the -12 mark in this meter. To make it easier to see, you can drag that whole cluster elsewhere on the screen and expand it. I stretch it the full width of the screen and keep an eye on it from across the room.

- Record half your show

   It will be useful, either before or after your reading, to record a few seconds while you're NOT talking. Consider that "room tone." We'll get back to that shortly.

   I start the timer (which beeps when I do so), pause a second or so, then start reading. If I need to pause more than a second or two during the recording, I'll stop the timer so that my total time is still valid. I can easily cut out the gaps and the beeps later.

   Any time there's something I'll want to edit out later, I clap twice. As the software draws a visual waveform of the entire session, the claps generate a distinctive pattern of

twin peaks that's easy to see when it's time to make edits. If a restart is more than a momentary stumble, I'll try to make a mental note of how much time I have to make up. If I'm repeating a sentence, for instance, I may add another ten seconds or so to the total time for the half-hour.

   When time's up…

- Save the first half, and record the second half as a new Audacity "project."

 - Tweaks

   Before you complete and upload your program, there are a few tricks you may want to try, beyond editing out the awful stuff.

Noise Removal -- This will help if there's a steady hum or whine in the background. In Audacity, it's a two-step process. First select some of that "room tone" I mentioned earlier -- the part where you were recording but not talking. In the effects menu, find Noise Removal then select "Get Noise Profile." Now select the whole track, the choose Effect/Noise Removal again and select OK. If it doesn't take enough of that noise away, undo what you just did (control+z is the quickest way) then try again with the setting marked "Noise Reduction" set to a higher number.

If the program is just a little too long or short, you can stretch or shrink your reading time, without changing the pitch. Use the effect called "Change Tempo."

- Output

Once you've loaded that LAME encoder, you'll be able to save each half-hour as an MP3 file.

To do that, select everything in your project by typing control+a (making sure that it ends at the 27:30 mark on the time line, unless you're editing in your own intro/outro music). From the File Menu choose Export Selection. As your File Type choose MP3, then on that same dialogue box choose Options.

Select Constant Rate… 128 kbps… and Joint Stereo.

Save it with the assigned file name (e.g., the second half of Business Week might be BUSb_030519.mp3) Note that if you save the PROJECT with that file name it will automatically offer that name for the mp3 as well.

-- Upload

   You'll receive separately the website and password for uploading your programs. Log on with Internet Explorer (using the FTP function -- it's NOT exactly the same as going to a regular website), or with Filezilla, and drop your files in the folder for your show.

The SECOND time you do it, it'll be easy!

Good luck!

Gordon Rothman