

**The laptop computer:
Friend or Foe to the Square Dance Caller?
By Stephen Cole**

As a square dance leader, there are a number of very compelling arguments to using a computer to manage your music. However, there is also a downside to using a computer, so it is important to be informed before you become involved.

First and foremost, the computer is a tool. It could be said that the computer is a power tool and, like any power tool, you should always follow any and all safety instructions as well as instructions for its use. That might seem silly to say, but if you think about it, it isn't. While you might not lose a limb or put out an eye using a computer, there is a risk of losing dancers, or as scary as this might be, losing a future booking.

Let's look at the positive and negatives of the computer.

Pros:

- No bulky record case (or cases) to lug around. In fact, on a computer, you will probably be able to carry your entire library.
- Unlike other digital media, there is no need to edit music for length, speed, or pitch as all three of these things can be done on the fly.
- Finding songs takes a keystroke (or two).
- Digital music is easy to purchase. This includes traditional square dance music from such venues as dosado.com as well as non-traditional music from iTunes.
- Digital music delivery is often delivered the same or next day.
- Individual play lists can be created as a "program" for a dance. Of course, this implies that you pre-program your dances.
- It is a nice place to have notes. This is especially true when it comes to remembering the chorus to a singing call.
- The Transportation Safety Administrator (TSA) is very familiar with laptops, so they are less of a hassle at the airport.

Cons:

- Existing analog vinyl has to be converted to digital. This can be a time consuming process. Especially if you want to clean up a recording of a 45 rpm record to get rid of the pops, clicks, hiss, and dead space at the beginning and ending of a record.
- Digital music is easy to steal. **READ THAT SENTENCE AGAIN.** Borrowing/sharing music is a violation of copyright law. As an owner and user of digital music, you may be placed in the position of being asked for a copy of a piece of music that you have, or wanting a copy of music that someone else has. The *legal and ethical response* is to not participate or condone this illegal activity.
- It is easy to get into a rut and not create new play lists for a dance.
- Rather than managing a messy record case, you have to manage your computer files.

Cons: (Continued)

- Computers are “one more thing to buy.” As in all things, consult a tax professional about writing off a computer. The rules are complex.
- Computers are “one more thing to break.” If you don’t know the proper care and feeding of a computer, you run the risk of a malfunction at a dance or dance event such as a festival.
- Computers are easy to steal.
- In case of theft, crash, or damage... do you have a backup? This has two meanings. Do you have a backup way to play music at a dance and/or do you have a backup of your music in case your computer and/or its data is lost?
- Computers are designed to be used by one person. It makes sharing a stage complicated. It is a bad (and I mean VERY BAD) idea to share files on one computer.
- Computers are complex. They can take a long time to turn on and not everyone is an experienced computer user that is able to recover from unexpected happenings.

Care and Feeding:

Know Your Computer’s Purpose.

Computers, in general, are multi-function tools. You can balance your checkbook, check email, play games, surf the web, and even play music on them. **Resist the temptation to do anything but run square dances with your laptop.**

To restate that, this means **NO** games, **NO** web surfing, **NO** email, **NO** extra software. The caveat to this is that if you learn enough about the technology you have, and know without a doubt that what you’re doing will not impact your ability to run your dance, then by all means do so. However, it never hurts to have a backup and then test, test, test to be sure.

To illustrate this point:

At the Harborview Medical Center in Seattle, they have computers that do patient monitoring. These machines become “medical equipment” the moment they monitor patient care and are no longer thought of as computers. These machines are updated as needed, but since they are used for one single purpose, their success rate is very high. The FDA mandates this so it is easy to justify telling medical doctors they can’t check their email with them. It isn’t easy, but for sake of reliability, it is a must.

Beware of Malicious Files!

In the 1980s there was a bumper sticker “Trust in God, but lock your car doors.” For your computer, “Trust in God and a backup, but have a virus scanning program and keep it up to date.” **This is not an option.** Just about any file type can become infected with a computer virus.

Be proactive. What if the computer you use to make your music is infected? Do you want to risk your dance because you were in a hurry to transfer files?

Have a Backup Plan!

Forewarned is forearmed. Some clubs require that, if you use a computer, you must have an alternative source of music for the dance. What happens if your computer suddenly stops working? Some keep a record or two in their laptop case. Others have a portable music player like an iPod that can at least get you through a tip, if not a dance.

Power, Power everywhere...

It seems that there is a push everywhere on the planet to conserve energy. Turn on the television and you'll hear about carbon footprints, reduction of greenhouse gasses, saving electricity, and various energy saving methods designed to save the Earth. At a square dance, pretend you never heard any of this. **Disable any and all screen savers and power management devices.**

Why? Because such things are designed to activate when you're not using it and if you don't touch your computer for three minutes while singing a song, how much fun will you (or your dancers) have when your computer shuts off? Zero. Or, during a round dance break, how much fun is it to have to wait for your computer wake up (if it will wake up) once it falls asleep? Again, zero.

Also, never, ever depend on a battery to get you through a dance. This is true even if it is one tip at a festival. Virtually every battery life monitor lies. (Okay, so they're not human, so can't have human traits. However, they are not as accurate as those in marketing, who are human, would have you believe.) The more you use a battery, the less it holds a charge. This is a basic truth of electronics. Also, when on battery power alone, the computer will run slower to save electricity and some models will disable functionality of the computer including screen brightness. Your computer will perform best while being plugged into an AC outlet.

Music, Hardware, and Software!

Before we look at the hardware and software, it might help to talk about digital music files for a moment. When music is stored on a computer, there are two fundamental ways this is done. Either way, the music is stored as a file, just like a word processor file is stored, or a spreadsheet file is stored. The two ways a music file is stored is either 1.) compressed or 2.) uncompressed. With the proper software, music files can be edited and saved.

Uncompressed music files are very large. For a long time, this size was their sole method of protection. Computer storage was fairly limited and expensive.

Compressed music files are much smaller. Various algorithms are used to analyze the sound. Similar sounds are combined, and inaudible sounds (to the human ear) are also removed. As such, the computer can store a fair number of compressed songs in the space of one uncompressed song. When the original compression algorithms were invented, they got very little attention as the amount of computing horsepower needed was not available for consumer purchase. That is, until the mid 1990s. The Pentium II and Pentium III processors from Intel made creating compressed music files easy to do for the average consumer. The most common compressed type of music is mp3. (The origins of the name mp3 are complicated. If you're interested, it is online or at your local library.) Major music vendors have their own proprietary formats. Real Audio has one, as does iTunes. Most vendors like iTunes and Real use what is called "Digital Rights Management." Abbreviated DRM, this is technology designed to prevent users from giving (stealing) music. It is not perfect and, in fact, is being debated (as of 2007) in the open market.

Another consideration with digital audio is that uncompressed audio files are “pure.” When you play back one of these files, it will sound the same every time you play it. When you play back an mp3 file, it is “reconstituted on the fly” so no two playbacks will be identical. If you learn to edit music, it is better (but not essential) to edit the uncompressed audio.

Any laptop computer made since 2000 will easily handle playing music files. Most every model of laptop includes ability to produce sound. Windows 98 will work, but Microsoft no longer supports it, so it is probably a good idea to move to Windows XP as it is. Be sure that you’ve got as much memory as your computer will support. (Talking about memory can be problematic as some people talk about memory as physical storage and others talk about memory as what the computer is using to process its calculations. Physical storage is important. It is the real estate where your music files are kept. Computer memory, or RAM, is what the computer uses to “think.” The more it has, the fast/easier it can think. However, past a certain point, there is no benefit.)

As a caller, you have a number of different options for playing music on a computer. Sadly, those solutions that have been custom designed with a square dance caller in mind are limited to Windows based computers. That’s not to say that you can’t play music on Apple Macintosh computers. You certainly can. It’s just that there isn’t a Mac program that is a self contained solution.

Acquiring Digital Music

In order to use a computer to play music, you need to need to have digital music. Getting it from a friend without paying for it is stealing, so that’s out. Instead there are a number of options to consider:

- Buy digital music from www.dosado.com. From here, you can buy music as mp3s or on CD.
- Buy “non-traditional” square dance music from a 3rd party website such as iTunes.
- Record existing analog (vinyl) onto your computer.

A brief aside: When you start working with digital music, decide on a file naming convention and stick with it. It makes music much more manageable over time. Popular methods include:

Song Name – Label – Number – Vocal.mp3
Song Name-Label-Number.mp3
Label-Number-Song Name.mp3
Song Name.mp3

Adding the word “vocal” to a file name to let you know it is the called side of the record is a good idea. (As is including the label and number.) This way, if you have one song from two different label, you can tell them apart.

Buying digital music as mp3 files takes most of the effort out of the process. Nearly every software program on the market can play mp3 files, so it is a matter of copying them to your computer and playing them.

If you're going to use a laptop to play music, and you bought a CD, you're going to need to "rip" (a fancy "hi tech" term that means to convert the audio file) from the CD and compress it.

Music from iTunes and the like frequently has to be "burned" (another "hi tech" term that comes from the idea the CD drives use lasers) to a CD, then "ripped" to become mp3 files. This intermediate burning stage is due to the DRM mentioned earlier.

The most difficult process is actually converting vinyl records into mp3 files. The difficulty comes not from the complexity, but rather the number of steps it takes (and therefore time) to complete the task.

There are several options when it comes to recording music to your computer, and even more things to consider.

While it is possible to record from a Hilton turntable, it was not designed for such activity. If you've got a large library of music, it might behoove you to invest in a turntable dedicated for recording. There are a number of low end DJ turntables on the market available at music stores. Some even have digital output.

It is also possible to record directly to your laptop computer. The circuitry in laptops is adequate for "road work" but isn't always the best for serious music editing. Save your pennies and work with a desktop computer with a better-than-average sound card.

On that desktop computer there are a number of options to record music. There are a number of programs available for free and for a fee, so your best bet is to find something that suits you. Here are a couple of options that are popular:

(A listing here neither condones nor supports its use. It is merely informative. Your mileage may vary.)

One free solution is Audacity. It is cross platform which means it will work on Windows and the Mac (as well as other) computers. It can be downloaded at: <http://audacity.soundforge.net> When you download this software, be sure to download the LAME MP3 encoder. (It is a separate download due to copyright issues.) LAME is an add-on that will convert your uncompressed audio files to mp3 files.

There are a number of inexpensive solutions on the market.

Goldwave is a popular shareware solution. (Shareware is basically "try before you buy.") It is about \$45.
<http://www.goldwave.com/>

Another (somewhat) inexpensive software package is from Sony. It is called Sound Forge Audio Studio. It has a free trial and retails for \$69.96.
<http://www.sonycreativesoftware.com/>

On the expensive side, Adobe sells a product called Audition. It retails for \$349.00. It is designed for professionals and has a very refined interface. Information can be found online at <http://www.adobe.com>.

Why edit digital music?

There are a number of reasons to edit music. They include, but are not limited to:

- Removing the silence at the beginning of a song.
- Removing the silence at the end of a song.
- Removing pops and clicks from a vinyl recording.
- Making a longer version of a hoedown to avoid looping.
- Change the pitch of a song.
- Change the tempo of a song.

Learning to edit music can be a time-consuming task, but it is not without rewards. Be ready for a number of trial and error sessions.

Square Dance Software

Microsoft Windows comes with a program called Windows Media Player. If all you want to do is play music files, then that's all you need. However, if you want/need more bells and whistles, there are a number of choices. The mainstream options (forgive the pun) are: (In no particular order.)

Digital Music Magician

Available from www.dosado.com

2007 price: \$149.00 – 30 Day Demo Available

CSDS – The Ceder Square Dance System

Available from www.ceder.net

2007 price: \$200.00 – Trial Demo Available \$25.00

SqMP3 Gold

Available from www.sqmp3.com

2007 price: \$129.00 – Demo Available

Plays mp3 files only.

SqView

Available from <http://hem.passagen.se/thomasb/sqview.htm>

2007 price: Free

Using the Laptop to change pitch and tempo:

With a laptop, using Square Dance software, you can change the pitch and tempo of a song on the fly. That is, you don't have to edit the original song to make the change, and you can return the song to its original settings with a keystroke. This ability to time/pitch-shift the music can be done in two ways.

The first way is that they are done in tandem. This is just like speeding up or slowing down a record. Play the song faster and the pitch goes up, play it slower, and the pitch goes down. There is a price to be paid here... if you put the tempo out of reach for your dancers, (too fast or too slow) just to make a song be in your vocal range, then it isn't worth doing.

With the computer, you can time-shift or pitch-shift independently of one another. That is, you can slow the music or speed it up without changing the pitch. Or, and this is something that a number of women consider a boon, you can change the pitch without changing the tempo. There is a price to be paid, however, and that price is referred to as "artifact." Artifact, in digital music circles, is, in a word, "noise." The farther you shift the pitch or the tempo from the original the more likely strange gaps, clicks, or stutters will appear.

Connecting your laptop to an amplifier:

Yes, you still need an amp. However, depending on what amplifier you have, you'll also need cables to connect it. Which ones? Well, that depends on the type of computer you have and which amp you are using.

Most laptops have an eighth inch headphone jack as an output. The various Hilton amplifiers (with and without turntables) have various connectors. You'll have to check and see what you've got. Though, if you're going to work with other callers and cuers, it will pay off, in the long run, to have a number of adapters in your laptop case to handle whatever comes your way. The most common types of connectors are RCA, Quarter Inch, and Eighth Inch.

Some laptops have problems with their electrical ground creating interference. If you've got a three prong electrical adapter, you can neutralize this problem with a three-prong to two-prong adapter. Though, you run the risk of not having a your equipment running to (and protected by) an Earth ground.

Older Hiltons don't have a pre-amplifier built into them that can take sound from a laptop or other media player. You might need a signal booster for your Hilton turntable. Hilton Audio sells and services them. <http://www.hiltonaudio.com>

In a nutshell:

Using a computer to manage a dance is not a magic bullet. It is simply another tool at your disposal and "your mileage may vary." It requires a number of things of you as a caller.

- You must have some understanding of computer technology. (Or, have someone close to you that does.)
- You must have some understanding of digital audio. (This includes its ethical use.)
- You must know how to connect the laptop to your existing hardware.
- You must have the patience required to learn new software.

Is the laptop your friend or foe? Only you will truly know. It is a powerful tool, but like any and all tools, you need to know how they work to be effective. There are a number of great sources online and within your peer group that will be of assistance. However, the digital age is upon us, and vinyl records are becoming fewer and fewer in number.

Acknowledgements:

The following people helped me proofread and add missing content to this document. I would like to thank them for their time, their help, and their friendship: Susan Morris, Larry Morris, Clark Baker, and Brent Besse.