

What's new?

- **Most square dance music is available digitally.**
 - Virtually all new square dance music is being released digitally, both as MP3s and as CDs. Many out-of-print recordings are being rereleased digitally..
- **Digitizing vinyl is more mainstream**
 - A little web research will find tons of information about recording old LPs to CDs. USB turntables make connecting a turntable to your computer easier. Sound editing and noise removal software continues to improve.
- **Music piracy remains a problem**
 - We're going to lose new music for square dancing if callers share their music. If you're going to use the music, buy it!
- **Computers are getting smaller and cheaper**
 - Netbooks are small, inexpensive, and perfectly capable of playing music and running square dance software. You probably wouldn't want to edit sound on them, but they're great for carrying around.
- **MP3 players are getting more powerful**
 - Smart phones and tablets have software that will adjust tempo and pitch on the fly. With powerful systems like Android and iOS, perhaps someone will write some calling software.
- **Tablets: New possibilities**
 - MP3 players can be hard to use because they're so small; the new tablet form, with the right software, could be great for calling..
- **Custom music possibilities**
 - With digital music production techniques, it's possible to get custom music made for a reasonable cost.
- **MiniDisc is dead**
 - As of September 2011, Sony is no longer shipping MD products.

- Do you want to go digital?

- **Pros:**
 - **Greater music selection**
 - While most music released through Palomino is in all three (vinyl/CD/MP3) formats, some producers are going totally digital and selling their music online independently.
 - Out-of-print records are being re-released as MP3s.
 - Non-traditional square dance music: music that can be used for square dancing, but is not released by square dance record producers.
 - **Convenience:** More music, less space.
 - **Longevity:** Digital music doesn't wear out and get scratchy.

- **Music control** (with some equipment): independent pitch and tempo control
- **Speed:** You can get (almost) instant gratification with MP3 files--order your music and get it the same day.

- Cons

- **Expense:** you'll need some additional equipment and additional software.
- **Time:** If you choose to go completely digital, it takes time to digitize your vinyl recordings.
- **Complexity:** You'll need to learn about new equipment and new techniques.
- **Reliability:** Vinyl always works (unless the turntable breaks). Electronic equipment is more fragile.-

Factors to consider in choosing a system

- How **easy** is it to use at a dance? You don't want the hardware to interfere with your calling and your relationship with the dancers. MD, CD, and MP3 players may have tiny buttons and a confusing interface. Some functions may only be available on the remote control. A computer requires working with the software you choose to play your music.
 - Do you need **tempo control**? At the dance? The slider on a turntable is easy.
 - Do you need to **loop** your patten music? The reset button on a turntable is easy.
 - How will you handle **singing call lyrics**? The record jacket is convenient.
 - How will you keep your music **organized**? It's easy to keep records in a case with dividers, and you can find one by flipping through them. It's harder with CDs with multiple tracks.
 - Do you work with **other callers**? It's easier to flip through someone's records than it is to examine their laptop.
 - How much **money** are you willing to spend?
 - How comfortable are you with **modern technology**?
 - How easy is it to **convert your vinyl to a digital format**? Recording to a computer requires some knowledge, but gives you the power to improve your recordings and more flexibility in the future.
 - What kind of **image** do you want to project? Most people under thirty have never used vinyl or even seen records.
- **You don't want to use a computer**
 - **You don't want to go completely digital**
 - You don't have many options. Buy an inexpensive portable CD player and buy CDs. If a song is offered only as an MP3, buy the MP3 and ask a friend with a computer and a CD burner to download it and burn a CD for you.

- You do want to go completely digital.

- If a song is offered only as an MP3, you're still going to need to get help from a friend with a computer.
- A big disadvantage of not using a computer is that you cannot remove the noise and scratches from your vinyl.
- **CD Audio Recorder:** You can record from a turntable to an audio CD recorder. Some CD recorders include a hard disk, allowing you to split tracks and delete parts of tracks before you burn the CD.
 - Equipment needed: An audio CD recorder and a CD player to use at dances.
- **MP3 Player:** Some MP3 devices have recording capabilities. NuMark has a USB turntable that will record directly to an iPod. Without a computer, you would not be able to edit these recordings.

- You do want to use a computer

- You don't want to go completely digital

- Buy an inexpensive CD player. Use the computer to burn MP3s to CDs when necessary. You can also use the computer to burn compilation CDs to cut down on the number of CDs you need to carry.

- You do want to go completely digital

- You'll need software for digitizing your vinyl records, cleaning up your recordings, and converting your recordings to some other media. Once you've done that, you can transfer the music to other media.

- Do you want to use a laptop at dances?

- Pros:

- **Power:** A laptop allows you to change pitch and tempo on the fly. You can have easy access to thousands of songs. You can set up playlists, do looping, display information on the screen. You can quickly filter and find music based on keywords, lyrics, etc.
- Can **eliminate paper:** display all information on screen

- Cons

- **Expense:** Laptops are the most expensive playback technique.
- **Reliability:** Laptops are fragile. Hard disks can crash. Software can crash. You must carry some kind of backup music.
- **Complexity:** Along with the power comes a steep learning curve.

- You don't want to use a laptop at dances

- **MP3 players.** Hard disk MP3 players can hold all your music and then some. Looping is possible, especially if you plan ahead and divide your pattern music into separate tracks on your computer. Tempo control may be possible, but check the interface and the granularity. Most tempo control features are designed for speeding up audiobooks, and aren't suitable for minor tempo adjustments. Check the interface; when you have thousands of songs on the device, you need a way to find and organize them to make it easy to play them at dances.

Solid state MP3 players hold less music, which may force you to plan ahead to decide what music you want to have with you. However, flash memory is becoming less expensive; an 8 GB player can hold up to 2000 songs.

- **CDs.** DJ CD players provide tempo control and looping (which may involve setting loop points every time you play the track). If you use MP3 CDs, you can pack a lot of music on a single disk. CDs are more fragile and are larger than MDs.

- Ways to handle looping:

- All players have a single-track repeat mode. Be sure to check the interface. This works if you don't mind starting the track from the beginning when you reset, or if you divide the song into separate tracks on your computer.
- Alternative: Create longer tracks on the computer, using your sound editing software's capability to copy and paste sections of the music. This is more work up front, but easier at the dance.

- Ways to handle tempo control:

- Note which records are slower and faster, and use records with the appropriate tempo.
- Alternative: Use your computer's sound editing software to create different versions of the track at different tempos.

- Ways to handle track organization and cue sheets:

- CDs can hold multiple songs, so you'll need a way to keep track of which song is on which disk. Also, you'll need a way to quickly find cue sheets, since each tune doesn't have its own cover any more. If you keep a database of your songs, you can print various lists and keep them in a notebook: by disk, by title, by record label—any way that would help you find what you're looking for. You could keep the record jackets, or you could copy them onto notebook size paper to keep with your lists of records.

- You do want to use a laptop at dances

- Choose software for organizing and playing the MP3s and for displaying cue sheets.

- Factors to consider

- **Features.** Looping, tempo control, searching, multiple play lists, displaying cue sheets, keywords, ease of backing up
- **Ease of use at the dance.** I look for single key control of major functions.
- **Ease of adding data** or setting up to use. Consider cue sheets, keeping track of tempo, setting up for looping, organizing your music and related information.
- **Support:** If you have questions or issues, can you get answers? Are bugs fixed quickly? Is the software being improved?
- Initial **cost** and cost of updates.

- Options

- Winamp, plugins, html or .doc files
 - Inexpensive, hard to keep organized, not easy to loop or keep track of tempo.

- Specialized programs for callers

- Ceder Square Dance System - Vic Ceder
- Digital Music Magician - Supreme Audio
- Sqmp3 - Dave Wilson
- Sqview - Thomas Bernhed

- Purchasing Music

- Square Dance Music: Which Format to Purchase?

- Now that most square dance music is being released in multiple formats (vinyl/CD/MP3, vinyl/CD, or CD/MP3), which should you buy? The price for all three formats is the same. With CD and MP3, you will often get three versions in different keys. Sometimes, you'll get one track with vocal backing and one without. Some labels will give you both a short and long patter track. When I have a choice, I will always buy the CD. It's easy to get the uncompressed sound onto a computer, and I like having a "hard copy". You can avoid delivery costs and delays by buying MP3s, which are delivered digitally (if Palomino ever provides immediate delivery, I would probably start buying MP3s on impulse for a particular dance). I tend to buy vinyl instead of MP3s because I sometimes need to change the song's pitch and I'd prefer to work with an uncompressed file.

- Alternative Music

- If you buy music from an online music service (iTunes Store, for example), it may be in a format that your digital music management program doesn't play. For example, music purchased from iTunes is in the AAC format, which Winamp can't play. If the digital rights management in the format allows it, you can make a CD, and then convert the CD to MP3s. (Note: this is a decompression/lossy recompression technique.)

- Conversion

- Vinyl to Anything:

- Best technique: Record to computer, use software to remove scratches and clean up sound, back up .wav files to CD, transfer to desired format. There are several USB turntables available that make connecting and recording to a computer easier—just plug the turntable to your computer's USB port. If you decide to record to CDs, record at a fairly slow rate; the CDs will be more likely to play in a wide variety of CD players.

- MiniDisc to MP3

- Best technique: re-record your original vinyl to computer. See above.
- Record to computer. There's currently no way to avoid the step of re-converting the ATRAC format MD files to .wav files and then converting to MP3. With old equipment, there's also no way to avoid real-time recording. But, if you're willing to buy new equipment (the Sony MZ-RH1 (about \$350)), you can digitally upload music from old MDs. Otherwise, the best you can do is look for convenience: if your MD player has an optical out, and your sound card has an optical in, you may be able to avoid a digital to analog to digital conversion. Back up .wav files to CD (to avoid future lossy conversions) and then convert to MP3s.

- CD to MP3

- Use computer software to "rip" the CD files. Most software can create MP3 files directly. You don't need to back up, since you have the original CDs as your backup. However, re-ripping the CDs is time-consuming, so you probably should back up your MP3 files to CDs, DVDs, or another hard disk.

- MP3 to Anything:

- Try to avoid doing this. MP3 is a lossy compression format. You should use your original .wav files or CDs to convert to other formats. If it's unavoidable (i.e., you bought MP3 files), use software to convert the MP3 to a .wav file. Back up the .wav file, so you won't have to do this again. Convert the .wav file to the desired format.

- Backup

- For the dance

- Have some music in some other form. Possibilities: Vinyl, MP3 player, MD player, PDA with some MP3s on it, cell phone with MP3s. I personally have an iPod and a Palm.
- If you rely on a computer for choreography, have some backup for that also.

- All your music

- You should back up your digital music; you don't want to have to re-record it from vinyl. Possibilities: CDs, DVDs, an extra hard drive..

- Legality

- Technically, it's probably illegal to copy music that you've purchased and use it in a profit-making activity. Ethically and practically, it's considered okay.
- It is illegal to make copies of your digital music and give or sell them to others while you also retain copies. It is also unethical and impractical, as it will result in less music for all of us.

- Calling at Festivals

- You may prefer to carry vinyl to use when you're calling single tips at a weekend or festival. If you choose to use your digital music, you need to be prepared. Your goal is to be able to set up and start calling as quickly as someone with a record.

- Before the event

- Familiarize yourself with various Hilton models: where to plug in auxiliary sound and what kind of connector to use.
- Make sure you have the proper connectors. Different Hilton models have used different audio connectors. You need to carry all three:
 - 1/8 inch (mini)
 - RCA
 - 1/4 inch
- Older Hiltons may need a stronger sound signal than your computer can generate. You may want to carry a small pre-amp, just in case.

- Before your tip:

- Make sure your computer/other device is charged up. You want to avoid taking the time to plug in to power.
- Get to the hall early and see what kind of amplifier is being used, so you can have the right connector ready in advance.
- If you're using a laptop, boot it up and open the software you use.
- Select your music in advance. Have your pattern cued up and your singer quickly accessible.
- Walk on stage, plug in your sound source, plug in your microphone, hit "Play" and go.

- Sharing a tip:

- Make sure the other caller is comfortable with using music from your laptop.
- Make sure the other caller can see the cue sheet.
- Don't change the pitch or tempo while the music is playing... especially if the other caller is singing.

- After your tip:

- Unplug your sound source, unplug your microphone, pick up mic and sound source, and get off. You can organize your stuff off-stage.

- Recording and editing sound files:

- Equipment needed:

- A turntable. Don't use your Hilton turntable if you can avoid it. You'll get better sound from a "hi-fi" turntable. If you're going to buy a new turntable for this purpose, consider one with USB output.
- An amplified signal from the turntable that has been RIAA equalized. Some modern turntables provide amplified and equalized output. Some provide equalized output, but still need pre-amplification. Some computer programs can take normal phono output and do the RIAA equalization in software.
- Software that can record audio to the computer's hard drive.
- Software to process and clean up the audio. (May be the same as the software used to record the audio.)
- Software to convert the uncompressed audio files to MP3s.

- Process

- Clean the record (garbage in, garbage out). Check out Gruv-Glide; it may make your record sound better. If your record is badly worn, consider buying a new copy.
- Check the recording levels; maximize signal without clipping.
- Record in stereo. Don't worry about trying to record just the music; you want some of the "noise" without music.
- Remove the background noise if necessary. Most sound editing software includes the ability to sample the noise and then remove that noise from the music. Results vary widely; you should listen and make sure the music is still acceptable after processing.

- Trim the non-music from the start and end of the recording. Some callers like to add a couple of seconds of silence to the start and end.
- De-pop and de-click the music. Some sound editing software includes click-removal processing, but you may prefer to do this manually.
- Equalize if needed.
- Normalize or amplify the music if needed.
- Change the tempo, if needed. (I tend to change the tempo as needed at the dance. If I'm adapting some non-traditional music for square dancing, and it's very slow or fast, I'll use sound editing software to change the tempo to a normal square dance tempo.) If you're using a playback device without tempo control, you may want to create different versions at different tempos.
- Change the pitch, if needed. If you're using a laptop, you can do real-time pitch-shifting at the dance. I prefer to figure out what I want and do it using sound editing software.
- Convert the file to MP3.

- Files to keep:

- The original, unprocessed recording. Sound processing software might improve in the future and you might be able to get better results.
- The cleaned-up recording.
- The tempo- and pitch-shifted recording.
- The MP3.

References

Links to several papers on digital music can be found at:

<http://www.squarez.com/digitalmusic2012/>

Vic Ceder's Digital Music Info: http://www.ceder.net/digital_music.php4

This site has pointers to other good sources for digital music.

Dick Henschel's (Hilton Audio) presentation from CALLERLAB 2004: http://www.hiltonaudio.com/digital_music_04.htm

Useful tables on hooking up Hiltons both for recording and playback.

Good source for cleaning up vinyl: <http://www.delback.co.uk/lp-cdr.htm>

Detailed description of all the steps in recording vinyl to a computer, including lots of software recommendations.