



BASIC TOOLS AND RULES FOR THE EXCHANGE OF BROADCAST CONTENT:

Playing it safe for most broadcast systems:

One thing that we're all dealing with is the ability to share content with many different systems. Standards are pretty good these days, and staying somewhere in between all of them is pretty easy by keeping a few basic rules in your head and tools on your laptop. In most cases you can usually use what you already have to do so if you remember a few basic concepts:

- **Sample Rate/Resolution:** 44.1K @ 16 bit for both WAV and MP3 - It's the standard for burning CDs, and usually is the best common format for all systems.
- **WAV File type (be careful):** WAV files should be WINDOWS PCM (*.wav). Don't use WAV ADPCM, or WAV AVI -- It is a very common mistake when saving files, especially in Cool Edit/Adobe Audition.
- **MP3:** If using MP3: Remember that the fancy name for MP3 is "MPEG Version 1, Layer 3". Another common mistake people make is using MPEG Version 2.
- **Bit Rate:** Use 128kbps to 256kbps, CBR (which is constant bit rate). Stay away from VBR (variable bit rate). This format is usually "way good enough" for "News".
- **CODEC:** Use converters that use the LAME codec (coder-decoder) which usually provides the best results, without confusing other systems.
- **Avoid Pro:** Use regular MP3, and avoid MP3 Pro. Again, this is based on best results with less confusion for most systems.
- **Avoid Tags:** Avoid using metadata tags (like Title, Artist, etc) in your MP3 files. As a matter of fact, I usually use my WINAMP (see below) to UNCHECK the IDv1, and IDv3 selections under FILE INFO. Unless you are requested to include metadata in your MP3 files, avoid using it at all.



- **File Size:** In most cases you want to keep your upload somewhere in the area of 5 to 8 Meg, or at least below 10 Meg so that the upload goes fairly quick. Some systems (especially the network that you are uploading from) get confused if the connection is dropped during a long upload. Keep it short and sweet. If you have to, break the file up into segments.
- **File Names:** Avoid using long file names or crazy characters in your file names. Some FTP/HTTP and ingest systems don't like crazy characters. Use an underscore to separate information in your file name and AVOID using spaces. Example of a good file name:

ThePresidentSaysHi_JoeC_20070101.mp3

GENERAL RULE OF THUMB FOR FILE SIZE:

- MP3 @ 128kbps about 1 Meg per minute
- MP3 @ 256kbps about 2 Meg per minute
- WAV Mono, about 5 Meg per minute
- WAV Stereo about 10 Meg per minute
- Base your choice of format on the duration of your file. In most cases you want to keep your upload somewhere in the area of 5 to 8 Meg. In most cases MP3 @ 256kbps is "plenty good for News"



LEVELS:

This can be VERY confusing for all. Some systems "digital meters" are really not "What you see is what you get", and that's the first thing you need to consider.

What is FSD (Full Scale Digital)?

Forget about numbers like "0" on your digital system meter. "0" can mean lots of things on a digital system meter. Full Scale Digital (FSD) is what the real deal is. FSD is the highest level that you can go in the digital world. However FSD does NOT mean "0" on the meter in all systems. Some systems build in HEADROOM on their meters and so sometimes when your system is showing "0" it may actually be 12 DB lower than the highest you can go. You really need to find out what your system meters mean.

General Rule Of Thumb for levels:

- You first need to know what "0" means on your meter (see test tones below).
- If "0" means 12 DB down from FSD, then it's OK to prepare your files to peak around "0".
- **WARNING:** If "0" means FSD on your system, then it is REALLY IMPORTANT that you prepare your files to peak around 12 DB down from "0". And even MORE IMPORTANT TO NEVER GO ABOVE "0" because in a system where "0" really does mean FSD, mixing above "0" will result in clipping, drop out, distortion, or other bad things. You may not hear the problem on your end, but systems that you upload to and share with will most likely freak out!
- After finding out what your meters really mean, ALWAYS Prepare your files to peak around 12 DB down from FSD.



TEST TONES:

Download and play the following test files in your system and check your meters:

[1K Tone, Stereo, at FSD:](#)

(http://www.greenpointusa.com/jcc/audio/1kStereo_0_FSD_Adobe_Aud.WAV)

If your meter reads "0", then your system is "real world" FSD. In this type of system, you MUST prepare your files to peak around 12 DB down from "0" (See warning above)

[1K Tone, Stereo, 12 DB Down from FSD:](#)

(http://www.greenpointusa.com/jcc/audio/1kStereo_12_DB_Down_From_FSD_Adobe_Aud.WAV). If your meter reads "0" then it's OK for you to prepare your files to peak below or around "0" on this type of system.

Here are a few other test tones for the really curious:

[1K Tone, Mono, 12 DB Down from FSD:](#)

(http://www.greenpointusa.com/jcc/audio/1kMono_12_DB_Down_From_FSD_Adobe_Aud.WAV)

[400 Hz Tone Left, 1K Tone Right, 12 DB Down from FSD:](#)

(http://www.greenpointusa.com/jcc/audio/400HzLeft_1kRight_12_DB_Down_From_FSD_Adobe_Aud.WAV)

[400 Hz Tone, Mono, 12 DB Down from FSD:](#)

(http://www.greenpointusa.com/jcc/audio/400HzMono_12_DB_Down_From_FSD_Adobe_Aud.WAV)



TOOLS:

There are lots of "free tools" out there for conversion. However, two of my "standard toolbox pack" file format converters are:

dBpoweramp Music Converter

<http://www.dbpoweramp.com/dmc-power-register.htm>

And

Acoustica Audio Converter Pro

<http://www.acoustica.com/audio-converter/index.htm>

A GREAT TOOL FOR TESTING & TROUBLESHOOTING:

One of my most useful tools for viewing audio file information, and usually my first step in troubleshooting is an old version of WINAMP. A right click on the file in the playlist (then View File Info) will tell you all about the file format, etc. It will also allow you to edit or remove the metadata (Title, Artist, etc).

I can't speak for newer versions of Winamp with regard to spyware, etc and so I always keep an old version of Winamp around. This is probably illegal (so my apologies to the Winamp folks) [but here is the installation EXE to that old version](http://www.greenpointusa.com/jcc/audio/winamp276_full.exe). (http://www.greenpointusa.com/jcc/audio/winamp276_full.exe)

When installing it, select the OPTION THAT SAYS YOU DO NOT HAVE AN INTERNET CONNECTION. Again, this is NOT A FILE CONVERTER, but a great tool to be able to view information about the file and clean up metadata.



A GREAT LITTLE EDITOR:

Finally, there are many free tools out there. One of those are AUDACITY (<http://audacity.sourceforge.net/>) which is a great little audio editor, and if you download the LAME ENCODER DLL (Lame_enc.dll) (<http://www-users.york.ac.uk/~raa110/audacity/lame.html>), you'll be able to work with MP3 files. However, with all free tools YOU MUST REMEMBER TO READ THE USER LICENSE VERY CAREFULLY. "Free" usually means free for home use. If you're using it professionally (to edit news, convert programs that will actually air, etc) then you MUST BE ESPECIALLY CAREFUL ABOUT THE LICENSE agreements.

This was a little long winded, but it is all about the rules and concepts I've been using for a very long time, and I rarely have any problems sharing data. Hope this helps.

Questions, Comments?
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