

# Field Recorder Tutorial:

Modified from OHA's webpage: Technology (<http://www.oralhistory.org/technology/>)

## You are Using Solid-State (Flash Memory) Recorders

- Compact Flash, SD, SDHC are the primary media types (at present)
- Familiar due to popularity of digital photography
- Flash memory is reusable
- Record at very high quality settings
- Upload at rapid pace
- File based workflow
- Media is cheap and getting cheaper
- Portable, but requires a computer
- Fastest growing portable recorder market



## File Formats:

Most portable field recorders utilize a technique called Pulse Code Modulation (PCM) for digital conversion of an uncompressed analog signal. This digital data is then saved as a data file.

- *Uncompressed—This is the format set for your field recorder*  
The standard file formats associated with uncompressed recordings are Wave (.wav), Broadcast Wave and .AIFF. Portable field recorders normally utilize Wave files. AIFF files usually are associated with Mac Computer applications. Since both are uncompressed, the quality is the same. The Wave file is the more common file format that professional and prosumer portable field recorders utilize, and unlike AIFF, enables the incorporation of metadata into the digital file itself. These are the only audio files with proven archival quality.
  - You will be recording in 24-bit/96 KHz/Stereo/.wav = 2 gb per hour
- *Compressed—Later, you will save a version of your interviews, your “user copies,” in this type of format.* For this project, do not record your interviews in this format. MPEG recording will dramatically decrease your data footprint and thus increase your recording time. The compression degrades your recording quality. MPEG, however, is ideal for placing audio files on the web. Indeed, Mp3 files have become a standard uncompressed codec almost universally accepted by most computer players. Mp3 files are usually measured by “bit rate” rather than by sample rate and bit depth. Also included among more proprietary audio compression codecs are the Windows Media Audio Files, and Real Audio files. Many low-end consumer recorders—ones designed for dictation and usually purchased at office supply stores—record in a proprietary compressed format that can only be accessed using a proprietary software package. Because format compatibility is of the utmost importance from an archival perspective, these low-end consumer recorders are not recommended for recording oral histories.

## **Adjusting Levels On Your Recorder**

### *Manual level control*

Manual level control involves the operator adjusting the levels by use of the input level or recording level controls. When recording with manual level control it is best to use a limiter to protect against clipping.

### *Limiter*

A limiter sets a threshold above which the signal will be gently “pushed down” in order to prevent clipping. This is preferred over ALC or AGC (see below) as it allows the operator to set optimal levels and minimizes noise while still protecting the recording from clipping. Limiters are not foolproof however, and good levels must still be determined by the operator.

### *Automatic Level Control/Automatic Gain Control (ALC/ALG)*

ALC and AGC are circuits in a recorder that determine an average optimal level. Use of one of these will minimize the risk of clipping but typically not produce as high a quality of recording as manual level control, because they boost quiet moments in the recording up to record level and thus boost background noise.

### *Headphones*

It is also recommended that operators utilize headphones, at least in the beginning of the interview, in order to monitor the sound quality of your recording. Levels will not indicate if there is a minor buzz, or the introduction of extra noise from a ceiling fan or an air conditioning unit, for example, that you may not have noticed during setup. A microphone can greatly exaggerate noise unnoticed by the ear, and can often be rectified by a different, typically closer, microphone placement (See microphone section). Monitoring through headphones at the beginning of a recording can greatly improve sound quality, and on occasion prevent the loss of an entire recording.

## **Your Field Recorder: You are using the Marantz PMD620**



Please consult the manual for full instructions

### **Marantz PMD620 Quick Guide:**

- Ensure Memory Card is blank and installed correctly
- Ensure batteries are fresh or you have all wires for electrical outlet use
- Power On by sliding the “Key Lock” switch back so that you can no longer see the orange dot, and sliding the “Power” switch forward, holding it in this position until the recorder comes on.
- Settings:
  - Use ALC or adjust manual settings, using limiter
- Record:
  - Push “Record” button (once)
  - Double check the screen to ensure recording in progress
  - Audio engineer monitors recording in progress using headphones
    - Make sure audio quality is good—no clipping
    - Make sure recording is actually on, not paused
    - Monitor battery life, if not plugged into outlet
    - Monitor memory left on card
    - **\*\*If, during the recording, you must stop the recording, please hit “pause” rather than stop, so as to have only one audio file per interview session\*\***
- At the conclusion of the interview, push “Stop”
- After the file has finished writing, power off the recorder
- Slide the Key Lock switch forward so that the orange dot is visible. This will prevent the recorder from accidentally turning on, recording, or erasing any data.
- Store the recorder safely away