

Researcher Considerations for the Long-Term Preservation of Ethnographic Research Materials

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Andy Kolovos (Vermont Folklife Center) and Cathy Kerst (American Folklife Center)

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In one way or another, the nature and intent of much ethnographic fieldwork conducted by folklorists and ethnomusicologists touches on the idea of preserving, or at the very least documenting, cultural practices. Most public sector folklorists and applied ethnomusicologists who conduct ethnographic fieldwork undertake research whose primary purpose is to create lasting records of the everyday creative expression found within the communities in which they work. Even those researchers who are not solely or primarily concerned with preserving cultural forms do document them through their research, recordings and writings. As a result, their fieldwork materials are rich and valuable records of the cultural lives of the communities and individuals they study.

Since the nineteenth century, folklorists have been concerned with preserving records documenting the range of human communicative behaviors they refer to as “folklore.” Over time the motivations for, means of, and approaches to the preservation of these records have changed in line with theoretical developments in the field and with the application of new technological tools used in the research process. This article explores a range of issues related to the preservation of these kinds of ethnographic research materials that are created today.

Preserving Ethnographic Research Materials

Although there are many reasons why one might want to preserve ethnographic field research materials, this article takes the position that there are three primary, practical motivations for doing so: 1) so that they can continue to be used effectively by the researcher who created them, 2) so that other people can make use of them for later research projects, and 3) so that persons and communities whose cultural practices are documented can access them. To insure that these goals are achieved, it is necessary to view preservation from a broad perspective that takes into consideration not only the physical preservation of the research materials themselves, but also the preservation of as much information about the research project, the research materials, and their systems of organization as possible.

Preservation is a two-fold process that requires the cultural researcher to:

- 1) Richly document the research process, the research materials collected, and the organizational decisions made in dealing with items that make up the research collection.
- 2) Securely and properly store and manage collected physical research materials and the information they contain.

To store only the research materials without documenting information about them and the project results in a collection of primary source materials whose utility is ultimately limited by the lack of contextual information. Further, to preserve records about the collected research materials without storing the research materials thoughtfully and securely serves only to deny future researchers access to the primary sources themselves.

And, since preservation is a process that involves both saving physical materials and creating information about them, decisions made before beginning a research project can have an enormous impact on the ability to preserve fieldwork materials over the long-term. Further, as field research tools and recording technologies increasingly move into the digital domain, researchers also need to be aware of the special considerations inherent in preserving the digital information they generate—whether they are document files of field notes and transcripts, digital images, or digital audio and video files. The remainder of this article is structured to highlight current approaches to preservation that should be taken throughout research.

Pre-Research Planning and Organization of Field Documentation

Planning for preservation needs to begin well before you start your research. The goal of preservation planning is to lay the groundwork for insuring that the

materials you generate through a fieldwork project not only survive physically, but also can serve as useful information resources in the future. Early decisions made about how a research project will be conducted, including which recording formats to use and how to organize what is collected, will have as much impact on the ability to preserve the materials over the long term as where the final results will eventually end up being stored.

As you conduct your research project, you will be keeping track of various kinds of information to help you in your work. Just as this information is helpful to you, it will also be valuable to other researchers who will make use of your research materials in the future. It is therefore important that you begin, early on, to consider how you will want to organize the materials that you will generate by undertaking the project.

Each method of documentation has standard types of information that are useful to note. For example, with interviews it is vital to record the names of interviewees, and the dates and locations of interviews. For images, digital or otherwise, it will be necessary to note who or what is in each image, and when and where the picture was taken.

Creating Metadata Forms to Help Organize your Field Research Materials

Create a list of the kinds of information or *metadata* you think you will want to collect for all of the documentary activities your research entails. Create forms to help you keep track of them. As you work, you may find that there are other kinds of information you would like to chart, but failed to note as you worked. Expand the kinds of data you collect as you go—the more you document about what you are doing, the more useful your research materials will be to you and others in the future.

Research forms help to make the job of recording, organizing, and retaining control of your field data, as you are doing research, or shortly thereafter. Among other things, using forms will help you keep track of the information you want to collect from your interviewees, control the types of information you collect and, if you are using a database system, simplify the task of entering information by forcing you to standardize the sequence you record it in.

Here are examples of some basic types of research forms used by ethnographic researchers:

- **Release Agreement Forms**

A Release Agreement Form is a legal and ethical document necessary for any ethnographic research project. Also referred to as an *Informed Consent Form* or *Permissions Form*, it provides a record verifying that you received the

consent of the individuals who shared their narratives and knowledge with you. A Release Agreement Form is a document that is reviewed and signed by an interviewee or performer after an interview or recording has been completed. The primary purpose of a Release Form is to create a document that an interviewee, performer, or narrator signs in order to give permission for your documentation to take place, and specifies what can and cannot be done with the materials collected. Fieldworkers often create their own release forms, crafted to align with the project at hand that specify how the collected materials may be used.

From a legal perspective, such a signed release is a requirement if you intend to do almost anything with the materials you have collected from a person or group—from publishing excerpts in writing to using recordings for a documentary. From an ethical perspective, it demonstrates that, as a researcher, you are giving the people with whom you are working the opportunity to consider their role in your project and its possible impact on their lives.

In a secondary sense, a release agreement form provides an opportunity to capture interviewees' contact information, if you do not have other mechanisms in place for doing so. They are especially important if you hope to eventually deposit your materials in an archive. In fact, many archives will not consider acquiring the results of your fieldwork, if you do have accompanying release forms indicating that you have a right to donate such documentation to such an institution.

- **Interviewee Data Sheets**

Creating fieldwork or interviewee data sheets provides a useful way to keep track of personal and demographic information about fieldwork you have done. For example, it can offer information about the circumstances of a recording or interview, who was present at the event, what background or education an interviewee might have, and any additional observations that may not be recorded elsewhere in the documentation.

- **Audio and Video Log Forms**

If you do not plan to transcribe the contents of an interview, a log form will be valuable in helping you locate information within an interview recording. Even if you plan to transcribe your interviews, creating a log sheet of the contents of an interview will be extremely helpful for you and others as a quick way to identify and locate content.

- **Image Log Form**

A still image or photo log is also an extremely useful tool for identifying the

date and contents of still images, and listing corresponding field notes or data sheets.

It is often valuable to create your own research forms, crafted to suit the specifics of your field project, unless they have been provided by the institution or project that has contracted you to do fieldwork. For examples of available research forms that you can pattern yours on, see the Additional Resources listed at the end of this article.

Keeping Track of Field Research Materials

Create a Filing System to Keep Track of Your Research Materials

The purpose of a filing system is to help you locate the information you need when you want it, and to help prevent the loss of documents and other materials that are important to your work. Although there are many standard approaches to setting up a system for filing research materials, the best filing system is one that works well for you. Common filing systems may involve sorting materials chronologically by date, alphabetically by interviewee, or arranging them by event or topic. They can also be configured so that you store all the materials related to an interview in one place (including images and transcripts), or keep different types of documents, such as release forms, data forms, logs, transcripts, slides, or field notes separately in groups by format and kind. Think about the most useful ways for you to access and use your research materials while you are working, and build a system that responds to those needs.

Create a Labeling System for Audio and Video Recordings, Slides, Prints, and Negatives, and Digital File Storage Media

Labeling still images and audio and video recordings is an extremely important aspect of documenting your research project. Any labeling system must include basic information needed to identify a recording or image so you can immediately tell where it fits within the scope of your project. As with a filing system, what matters most is that the labeling system is coherent and useful to you. However, there are some basic guidelines for labeling different physical formats.

- **Labeling Audio and Video Recordings**

Recent developments in digital audio and video recording complicate the classic approach to labeling these materials. However, if one is still using a cassette or MiniDisc based-audio recorder or a tape-based video recorder, the older guidelines do still apply. With this type of recordings, the basic data you should note are: *Name of interviewee; place of interview; date of interview; number of recording in a sequence (e.g. "tape one of two")*.

If you are using a digital audio recorder that stores audio information on reusable, removable media such as CompactFlash or Secure Digital cards or on fixed media such as hard disc drives, one must first decide what sort of tangible media—if any—you will ultimately output and store the recording on, and then label the media in the most archivally appropriate way. For some digital storage media, such as CD-R and DVD+/-R discs, the archivally appropriate space to record information—the plastic inner hub—is quite small, so not much information can fit. In these cases, it is best to limit what you write to very basic information such as a name and a

date, or to create a code system, such as the code system described below, to identify them and their contents.

- **Labeling Still Images**

Since the space available for writing on some still image formats, such as slides, is limited, and since writing on photographic prints can damage the materials, when creating a labeling and identification system for such items it is useful to mark the physical objects with a unique code that refers back to a log sheet or database.

For example, “SMITH-2005-10-31-IM001” could be used to refer to the first image taken of the interviewee identified as “Smith” on October 31, 2005. This code would then be useful in locating additional information about the image on your image log form or in a database record.

Develop a Naming System for Your Digital Files

Digital audio and video recorders and digital cameras have rapidly replaced analog recording and film-based cameras for use in documentary research. When working with these file based digital audio and video recorders and digital cameras, it is important to develop a system for managing individual digital audio, video and image files. The first step in keeping track of these virtual materials is to create a system for naming individual files.

A digital file name needs to do two things: 1) provide a unique identifier for each file, and 2) provide enough information so that the content of the file can be identified from the name. However, computer operating systems place limits on how long a file name can be. With this constraint in mind, developing an easily interpretable code can be the best approach. Using the example from above, let us say that a fieldworker conducted an interview on October 21, 2005 with Jane Smith. The interview resulted in five digital files, one audio file, three image files, and a transcript in the Microsoft Word format. Following the example above, the fieldworker could use a naming system as follows:

```
smith_jane_2010-10-31-audio001.wav  
smith_jane_2010-10-31-image001.tif  
smith_jane_2010-10-31-image002.tif  
smith_jane_2010-10-31-image003.tif  
smith_jane_2010-10-31-transcript001.doc
```

Each file name is unique—the odds are that there will not be a second interview with Jane Smith recorded on October 31, 2010. Each file name also provides information about the format and contents of the file. Additionally, the use of the interviewee’s name at the beginning of the name assures that all the files will be

easily viewed in one place when the display is set to present files alphabetically. This system is presented simply as an example. As with all filing methods proposed here, the best system is the one that works best for you.

Making Documentary Materials Last: Preservation Issues and Multi-Media Documentation Formats

From an archival standpoint, digital materials are extremely complicated to manage. Furthermore, due to the rapidly changing field of digital technology, especially in the areas of digital multimedia, any advice given will no doubt become outdated quickly. Since change in these matters occurs quite fast, there is no way an article such as this can be kept fully up to date. As a result, any advice given here for the preservation of digital research materials should be seen as the best suggestions possible at the time of publication.

See the Additional Resources section at the end of this article for links to organizations and web sites involved with archival preservation. We advise you to check with these web sites and organizational publications for the most current information on this topic.

Multimedia Preservation Concerns

In archival terms, the physical objects on which audio or video recordings are stored are referred to as *carriers*. Both a wax cylinder recorded in the 1920s and a Digital Audio Tape recorded in the 1990s are considered *sound carriers*. A reel of two-inch video tape from the early 1970s and a DVD-video disc are both *video carriers*.

Historically, the long-term preservation of multimedia records such as audio and video recordings focused on the best ways to preserve these physical objects. In recent years, particularly in response to the growing centrality of digital audio, this emphasis gradually has shifted. Today multimedia archives are placing a greater emphasis on the preservation of the information stored on the carrier—the recorded voice or image—than on the preservation of the physical audio or video carriers themselves.

This is not to say that archives are discarding old tapes, wax cylinders, and disc records. Nor is it to say that they are no longer interested in taking care of such materials. Rather, it is the result of a recognition that all audio and video carrier are inevitably affected by two factors: 1) that the physical materials that make them up will inevitably break down to the point where the contents will become unretrievable and 2) that all multimedia carriers will eventually become obsolete and the equipment necessary to access their contents will become increasingly difficult to locate and maintain.

Digital Preservation

There is no silver bullet when it comes to digital file storage. Every currently-

available storage option has both benefits and drawbacks, and there is no reliable data to tell us how long any of them will last under real world conditions. Furthermore, digital storage media tend to become obsolete quickly, so there is also no guarantee that a current popular format will still be accessible in the future. No matter how long a data storage format will last or how long it will be technologically viable, the formats in which the data they contain are stored may themselves become obsolete as well.

Digital preservation is an active process that requires the direct involvement of the archivist—regardless of whether that archivist is the researcher him or herself, or a professional archivist working in a managed archival environment—to check media for physical and data-content integrity, migrate materials to new storage media and new file formats, and remain fully involved in the preservation of the digital information.

Under good archival conditions, digital files are stored on internally redundant servers that are backed up to data storage tape on a regular basis. Additionally, data are not kept in any one geographic location, but are rather duplicated across two or more physical sites. It is also possible that an archive might keep other copies of digital resources on removable storage media such as CD-R and DVD+/-R optical discs.

Under such a storage plan, as servers age and become obsolete, the data they contain can be shifted en masse to new storage equipment. Additionally, as file formats change, entire batches of files can be saved in new formats at a single time.

Such a management and storage plan requires special training and a good deal of funding to execute and maintain. Generally an individual researcher cannot duplicate these conditions. Although the approaches outlined above are the current best practices detailed for digital preservation, there are approaches an individual researcher can take to preserve their own digital fieldwork materials on their own.

Digital Format Considerations

Before deciding on audio, video or still image recording technology, be sure to conduct research on preservation concerns associated with the multi-media documentation formats available to you. Points of consideration are: Format Longevity, Format Obsolescence, and Format Fidelity.

- **Format Longevity**

Format Longevity refers to how long one can expect a recording or data storage format--the physical sound, video or image carrier--to last under

optimum storage conditions. Outside of a professionally managed archive, “optimum storage conditions” will be extremely difficult, if not impossible, to maintain. As a result, select a robust recording format with a documented shelf life to help insure that your physical research materials can hold up over time.

- **Format Obsolescence**

Format Obsolescence refers to how long equipment will be available to access the content stored on a multimedia documentation format. Even if a recording format were somehow guaranteed to last for five hundred years, such a format would not be of any use if, three years after you finish your research, the equipment necessary to play it back were no longer available.

- **Format Fidelity**

Format Fidelity refers to how well the documentation technology--audio, video, or still image--captures and stores information. Although a hissy, scratchy recording of an interview does serve as a document of the interview event, a clean and clear recording would do a much better job of preserving the substance of an interview in a way that is useful to researchers in the future. The better the quality of your audio, video and still image recordings, the more useful they will be to yourself and others. Test and buy the best quality equipment you are able to afford on your budget. Most importantly, practice with it extensively so that you learn its limitations and will be able to get the most from it under field conditions.

Making Your Materials Last: Conservation supplies

Making proper choices in the supplies you use to store your research materials can have an enormous impact on how well your
Consider preservation issues when selecting audio, video or still image formats for use in your research project.

Store research materials using archival-quality storage supplies purchased from reputable archival supply houses.

Preservation Considerations to Pay Attention to During Research

Once your project begins you will have to apply all the preservation plans you established before you began working.

Before You Record

Although creating excellent field recordings takes practice and experience, there are some factors to consider that will help you do a much better job.

- Use the best equipment you can on your budget.
- Avoid equipment that will only record in compressed or proprietary formats.
- Never record on micro-cassettes.
- When recording digitally, a good rule of thumb is to look for equipment that supports the creation of uncompressed WAV files of at least CD quality: 16bit/44.1kHz.
- Always use an external microphone. In most cases even the worst external microphone will do a better job of picking up sound than the built-in, internal microphone on an audio recorder. Further, remember that when using a built-in microphone on a recording device, any external handling of the machine while recording is being made will be picked up.
- Test and prepare your equipment. Prior to conducting any interviews or recordings, be sure all your fieldwork equipment such as audio and video recorders and cameras are in full working order, that batteries are fresh and that you have ample recording (cassettes, MiniDiscs, extra memory cards, video tapes) and image storage (film, memory cards) media. Being sure of these matters in advance will do much to insure you are able to record the event to begin with.
- Fill out forms, label folders, and label recording media. Fill out any information you are able in advance (collector's name, date of recording, location where recording made, narrators or performers recorded, etc.), label the folders you will use to store the forms, and label any recording media prior to your arrival at the interview site. If you are using a film-based still camera, be sure to note the number of the first frame you will shoot and mark it as the first image on your photo log. Not only will all this save time later, it will ensure it gets done at all.

During Your Recording Session

- To begin with, tag your recording and set your recording levels. At the beginning of a recording, it is excellent practice to state your name, the date, and the location of the interview, and to have the interviewee state his or her name, and provide its proper spelling. This practice serves several functions. One, should the recording ever become separated from its label, there will be some identifying information about the recording contained within it. Two, it allows you to record the proper pronunciation and spelling of the interviewees name for future reference. Three, it affords you the opportunity to be sure your record levels are properly set and that your recording equipment is functioning properly.
- When recording interviews, place the external microphone close to the mouth of your interviewee—or if recording a performance, make sure it is situated so that the full range of the presentation is captured.
- Check your recorder periodically throughout your interview or recording to make sure your recording equipment is running properly. It is useful to monitor a recording with headphones at least occasionally during the course of a recording session to make sure that it is functioning as you wish it to. If using an audio recorder with manual level controls, monitor the record levels occasionally to make sure your recording does not clip and distort.

After Your Recording Session

Working with Forms and Digital Files

1. File your data forms.

Since you have already prepared the folders in which you will store your data forms, file them to be sure they do not get lost.

2. Save digital files properly in uncompressed, open, standard formats:

- Document files (.doc; .wpd): Save copies of your file in both the original format and a second copy as ASCII text (.txt), Rich Text Format (.rtf) and PDF.
- Audio files (.mp3; .aac; .wma, .dss): Convert to uncompressed WAV files (.wav)
- Image files (.jpg; .gif; various RAW formats): Convert to uncompressed TIFF (.tif).
- Video files (.wmv; .mov; .dvs;): Save original file and create a copy as an MPEG2 file saved at the highest quality setting.

3. Store digital files properly:

Store digital files on standard, non-proprietary storage media, such hard disc

drives, CD-ROM, DVD-ROM or LTO data tape.

4. Create several redundant copies on a range of media types and store them in different physical locations. For example, save materials to two or more hard disc drives and two or more CD-ROM or DVD-ROM discs. Even flash memory, such as USB memory sticks, are viable form of additional, short-term, backup storage. Store them securely and properly and in several different locations.

5. Re-save files in new uncompressed, open, standard formats as they emerge. Shift to new storage media before old storage media becomes obsolete and unreadable. Remember that storage media formats change rapidly. Be aware of looming obsolescence and try to choose a new, stable, secure, and open storage format before hardware to access the old format is no longer available. Try to keep abreast of these developments so you can re-save your digital files to new standard formats.

Writing Field Notes, Logging, Labeling, and Transcribing Your Materials

1. Write field notes. Field notes are very useful for you as a researcher, they are also very useful for people in the future who might want to make use of your research materials. Write up field notes as soon after your interview as possible so your memory of the event will be as rich as possible.

2. Log or transcribe recordings. Take the time either to log the contents of or transcribe—partially or fully—your interview recordings. Creating a log or transcript will make your materials more useful to you, and will also create a secondary record of the interview should your recordings be lost. When creating transcripts from an analog or digital source, never use the original master recording, but rather transcribe from a duplicate or secondary back-up. With analog recording media, each playing will degrade the quality of recording. Transcription, with its frequent starts and stops, is much harsher than normal playback. In the case of digital recordings, transcribing from your primary back up could risk damaging the storage medium. In these cases it is best to use a secondary back up as your listening and transcription copy.

3. Label photographic prints and slides and log their contents. If you are using a film-based camera, you will most likely not have immediate access to your prints or slides. Once you receive them from the processor, you should label, log and properly store them as soon as possible. When labeling slides limit marking to the cardboard or plastic frame that holds the transparency. Although from a strict archival perspective marking a photographic print is not advised, in practice it is often unavoidable. When marking prints, write identifying information on a small spot on the back near an edge, using a soft pencil or a permanent, water-based, felt-tipped marking pen.

4. Back up recordings and digital files, log digital images, and make database entries. The means for backing up recordings will differ based on the recording format you employ, however the principle is remains the same—make duplicate copies immediately to prevent loss. If you are using analog audiocassette or tape-based video recorder, duplicate the tape. If you are using a memory-based recorder or MiniDisc, upload the recording to your computer and save it, name it according to your file naming system, and create several back-ups of the data on a non-proprietary, standard removable data storage medium such as compact disc. If you are using a digital camera, do the same—upload your images, save them, name them according to your file naming system and back up the data on a non-proprietary, standard removable data storage medium. This is also a good time to log information about any digital images on log forms and enter information about the interview and the resulting recordings and images into a database.

Storing Your Field Research Materials Properly

As discussed above, while you are still conducting and writing up your research project you will want to organize your materials in a way that facilitates access to them. At the same time, it is important to store these materials in ways that will also encourage their longevity. Two factors you can control to some degree are the storage environment and the nature of the enclosures you use.

Storage Environment

The storage environment includes all the external, environmental factors that have an impact on the longevity of your research materials. In managed archives the effects of the environment, including temperature, humidity, exposure to ultraviolet light, atmospheric pollutants, and, in the case of magnetic media, exposure to magnetic fields, are as tightly controlled as possible. In a home or office situation, it is impossible to manage these factors with a high degree of precision. However, even if you do not have a climate-controlled archival storage vault in your home, there are some simple things one can do to limit environmental damage.

- Temperature/Humidity

The easiest way to have some influence over temperature and humidity is to store your materials in a room in your home or in an office that maintains a fairly stable temperature year round, rather than in the trunk or backseat of your car, your basement, porch or attic. Store all images, data storage media, and audio and videotapes away from sites of high-temperature variation, such as windows, heating/cooling vents, and radiators. Wide fluctuations of heat and humidity can be detrimental to

collected materials.

- Ultraviolet light

Ultraviolet light (UV), in particular sunlight, but also artificial light sources such as fluorescent and halogen bulbs, can be damaging to all archival materials. UV light is one of the factors that causes paper to yellow and colors to fade on paper and in photographic prints and slides. The easiest way to limit exposure to UV light is to store your research materials in a dark place such as a covered box or file drawer when you are not using them.

- Atmospheric Pollutants

Dust is the most common atmospheric pollutant in both the home and office environment that can have an impact on the condition of research materials. Dust settling on photographic prints, slides and negatives, as well as on recording or data storage media can damage materials. Furthermore, the act of removing dust by wiping can simply redouble damage done. If materials will be sitting out for any extended periods of time, it is best to cover them with a sheet of light plastic or cloth. Rather than remove dust from photographs by wiping, blow dust free with compressed air. It is also important to make sure that heating equipment such as woodstoves, fireplaces, and furnaces are in good working order and not distributing soot.

- Magnetic Fields

Strong magnetic fields can destroy information stored on magnetic media such as analog audio cassettes, Digital Audio Tape, floppy diskettes and computer data storage tape. Sources of magnetic fields in a home or office environment include audio speakers, computer monitors, televisions, computer cases and electric motors such as those found in vacuum cleaners. The easiest way to avoid problems with magnetic fields is simply to keep magnetic media away from such magnetic field generators.

Storage Enclosures

Storage enclosures such as file folders, photographic print and slide storage sheets and cases for recording and data storage media serve the dual function of helping researchers organize their materials, and protecting the research materials from certain environmental hazards such as dust and accidental liquid spills, and from handling damage from abrasion, tearing or the transfer of skin oils.

It is important to consider the chemical constitution of all storage enclosures and how the chemical make-up of an enclosure will interact with the materials it will contain. Enclosures made of certain kinds of plastics, for instance, should be avoided at all costs. Furthermore, just because an enclosure is described or marketed as “archival” does not make it so.

- Plastic enclosures

Plastic enclosures are excellent for organizing and storing many common photographic materials and paper ephemera. They come in standard sizes for holding photographic prints, slides and negatives and are normally designed to fit into binders or hanging files. Enclosures made of chemically inert plastics such as polypropylene and from polyester, including those manufactured under the trade-names Mylar D and Melinex, are best. However, quality polyester enclosures tend to be expensive. For any materials intended to hold photographic prints, slides or negatives, be sure the material has passed a “Photo Activity Test” to establish that the enclosure will not chemically interact with any photographic materials it will hold. Do not use storage enclosures made of polyvinyl chloride (PVC). It is also not a good idea to use any plastic enclosure for long or medium-term storage where the materials that compose it are not detailed.

- Paper enclosures

The most ubiquitous paper enclosure in an archive is the acid-free folder. In addition, archivists employ a range of other paper enclosures including envelopes and boxes. For the fieldworker interested in taking good care of his or her research materials, it is a good idea to purchase a number of acid-free, buffered folders to store transcripts, forms and ephemera.

- Enclosures for audio, video and data storage media

Different data and multimedia media storage formats have different requirements when it comes to proper enclosures. Tape media of all sorts are best stored in non-PVC plastic boxes. Optical disc formats such as CD-R are best stored in standard-sized plastic jewel cases. Avoid slim cases and plastic, Tyvek or paper envelopes to store CD-R and DVD+/-R discs as these kinds of enclosures greatly increase the risk of the disc surface being scratched. The use of plastic enclosures for these materials will provide some protection from dust and from water damage.

Additional Preservation Storage Considerations

It may be valuable to take a multi-layered approach to the storage of digital audio files, namely:

1. Save your audio files on multiple hard disc drives—both internal and external.
2. Create multiple CD-ROM discs that contain the audio files for each interview using two different brands of high quality, blank CD-Rs.
3. Store copies of your files in more than one location.
4. Turn on and run any external disc drives regularly. Check CD-R discs periodically for errors. Transfer data if discs are suspect.

CD-R and Audio Storage

Audio files can be saved on standard blank CD-Rs in two ways: So that the audio file stored on the CD disc can be played back in an audio CD player—the *CD-DA format*—or simply as an audio file in the same way you might store digital images or document files to a CD—the *CD-ROM format*. CD-ROM discs cannot be played back in audio CD players like the ones in cars or home stereo systems. To access the audio files on them you will need to use a CD-ROM drive on a PC and the audio editing and playback software on your computer. However, audio files on CD-ROM discs are somewhat more secure, and it is much easier to directly access the files themselves than with audio files burned to CD-DA discs.

This is not to say that CD-DA discs are bad. CD-DA discs are great for listening and for sharing copies with interviewees. One of the downsides to making and using audio CDs of interviews is that if your interview recording is burned as one long audio selection—essentially as one long track—fast-forwarding through the interview can be frustrating, if not outright impossible. Many audio CD players do not have a feature that will allow you to search through individual tracks as opposed to simply jumping from one track to another. In those cases in order to reach a particular part of the interview you will need to listen to the entire recording up to that point each time. In the case of CD players that have a search function, you generally have to hold the search button down as the laser quickly skips over the disk until you reach the point in the recording for which you are searching. This takes time, creates a racket and wears your equipment.

The solution archivists have arrived to remedy this problem is to break up long interviews or recordings into a series of tracks in order to burn those individual tracks to a CD rather than burning one long file. There are two approaches to doing this. One approach involves dividing up the audio at points determined by subjects discussed. The other method involves placing tracks at regular intervals, usually five or ten minute intervals, across a recording. It is important to be sure that you configure your CD burning application so that it does not automatically insert the standard two seconds of silence between each track. With periods of

silence inserted, there will be a short break between each track. Without the silences, there will be a seamless transition from one track to another. In order to perform this function, you will need a CD burning application that supports “Disk-at-Once” recording. Whichever method you choose, each audio editing program will have a different technique for breaking up long audio selections into separate tracks, and each CD burning application will have a different means of preparing audio for CD. You will need to consult the documentary materials of your particular programs.

If you want to be able to play back your digital audio on an audio CD player such as a stereo component or a car CD player, you will need to burn an audio CD. On an audio CD a digital audio file is stored in a special way that allows audio CD players to interpret it as sound. Digital audio files burned as audio CDs are restricted to so-called “CD-quality.” CD-quality audio files are 16 bit/44.1kHz stereo files, and we advise saving audio for CD in .wav format. If you are starting with a file that is not CD-quality, you will need to convert the file to meet the specifications for CD audio. A standard CD can hold 74 minutes of audio. If your file is longer than 74 minutes, you will need to break the file into smaller files and burn each one separately to its own disk. Longer CDs are available, but for a number of reasons addressed below (?), we recommend the use of 74 minute CD-R blanks.

One of the downsides to making and using audio CDs for recordings of interviews is that if your recording is burned as one long audio selection—essentially as one long track—fast-forwarding through the interview can be frustrating, if not outright impossible. Many audio CD players do not have a feature that will allow you to search through individual tracks as opposed to simply jumping from one track to another. In those cases in order to reach a particular part of the interview you will need to listen to the entire recording up to that point each time. In the case of CD players that have a search function, you generally have to hold the search button down as the laser quickly skips over the disk until you reach the point in the recording for which you are searching. This takes time, creates a racket and wears your equipment.

The disadvantage of burning your audio files as audio CDs is that in order to access the files directly, for example to edit them in Audacity, you first have to go through an intermediate process called “ripping.” Ripping requires an additional piece of software that essentially strips the audio file out of the audio CD. Ripping can create audio problems with your files, so if you intend to keep working with your audio, you are probably better creating data CDs.

Data CDs (CD-ROM)

A data CD contains audio information stored to the disk in the same way any other computer file—such as photographs or documents—would be stored. For

this reason, audio files burned as data cannot be played back in audio CD players. In order to access the audio files on a data CD, you need to play it back on your computer via your CD-Rom drive using either an audio editing program such as Audacity or audio playback software such as RealPlayer or Windows Media Player. Although data CDs cannot be played back on audio CD players, they are very useful for many applications such as back ups, storage and archiving. If you intend to continue working with your audio files or uploading them to the web using the CD as a source, you'd be better off burning data CDs rather than audio CDs. Additionally, digital audio files burned to CD as data are not limited to CD quality—they can be any format or size that fits within the 650 megabyte limitations of a standard CD-R.

Post-Research Preservation Considerations

Once you have completed your research and writing, what do you do next? If you hope to preserve your research materials and want the information they contain continue to be accessible well into the future, the best thing you can do is donate them to a professionally-managed archive. This is the surest way to insure your documentary research records will withstand the ravages of time.

However, there are many reasons why a researcher might not want to immediately deposit his or her research materials—for example, he might hope to use them again for another project, or she might have promised informants that she would not let anyone use them for a certain number of years. Although it is always best to trust fieldwork records to the care of people trained to preserve them, there are a few things you can do to help take care of your research materials until you are ready to donate them to an archival institution.

1. Create an inventory. For the sake of your own memory down the road, create a full inventory of all the items that comprise your research collection. When you or your heirs choose to donate your fieldwork materials, having such an inventory will greatly simplify the work of permanent archiving, and provide archivists with excellent information to pass along to researchers and the community from which it came. Be as thorough as possible, and do not hesitate to include additional background information about the project, such as why you undertook it, the relationships you developed, and the publications you drew from it.

2. Conduct a physical preservation survey. If you have the funds, switch any folders made of highly-acidic paper to those made of acid-free, buffered materials. Additionally, if your other research materials such as photographic images, CD-R discs, etc., are stored in non-ideal enclosures, this is the time to change that. Move photographic slides and prints into non-PVC plastic sleeves, CD-R discs into standard sized jewel cases, etc. Review the storage guidelines detailed in this document for best practices for storing various kinds of archival materials. In addition, it is good to store all these materials “on edge” (as described above) in closed boxes.

3. Conduct a digital preservation survey. A two-hour video documentary or three hundred pages of transcribed text is of no use to anybody if it only exists in a computer file format that, several years down the road, can no longer be read. Review all your digital materials and convert any that are stored in proprietary and/or compressed formats into standard, uncompressed formats. Although this is no guarantee that your files will continue to be accessible into the future, it will increase the likelihood that they will.

There are several variations to this rule. In the case of document files, it makes sense to retain a copy of your proprietary original file (for example, a Microsoft Word file) as well as creating a new copy in a standard text file format. In the

case of video files, due to their enormous size, there is no practical way to store uncompressed video. It is recommended to retain a copy in the original format and save a new copy as an MPEG2 file at the highest quality setting. Digital formats are recommended for long-term file storage.

4. Duplicate digital materials on a variety of available of storage media and store them in a number of locations. When digital storage media fail, they fail catastrophically. The best strategy to insure the survival of the digital resources you create is to make many copies on a variety of storage media and keep sets of copies in a number of locations. This approach, often referred to as LOCKSS (Lots of Copies Keeps Stuff Safe), is the best strategy we have to date to help ensure the survival of digital information.

5. Box it up. To prevent the loss of individual items from the collection and to reduce their exposure to light and dust, box up all your research materials. Ideally use storage boxes made from acid-free, buffered paperboard. If your collection requires more than one box, label and number each box in the series—for example, “Quilting Project, box 1 of 2;” “Quilting Project, box 2 of 2.”

6. Choose your storage sites carefully. In a professionally managed archive, your research materials would be stored in a tightly controlled environment, at an ideal temperature and humidity, with limited exposure to ultraviolet light, and be protected from fire and flood. In a home or office, such environmental conditions are impossible to attain. Store your fieldwork collection in a cool, dark, dry place not prone to sudden changes in temperature and humidity, and secured against damage from flooding due to broken pipes, leaky roofs, etc. Although not optimal by any measure, storing your materials on a shelf in an interior closet is probably as safe as you can get. In contrast, storing your research collection in a garage, basement, bathroom, attic, car trunk or porch (enclosed or otherwise) is flatly a bad idea. If an interior closet is unavailable, then the next best situation would be to keep your collection in a filing cabinet or boxed on a shelf away from heating/cooling elements, direct sunlight, and, if your collection contains magnetic media such as audiocassette tapes, away from strong magnetic fields.

7. Handling and storage of older format recordings, including cylinders, discs, and tapes. Do not touch the playing surface of recordings of any kind and wash your hands before handling them. For grooved discs (78s, 45s, LPs, and acetate discs), handle by their edge and label areas only. Touch compact discs only on the outer edge and center hole. For open reel tape, only handle by the outer edge of the reel flanges and center hub areas. Cassette tapes should only be held on the outer shell. All discs and tapes of all kinds need to be shelved standing upright on their edges. Do not lay any recordings flat, including audio or videocassettes.

8. Check video, data and audio storage periodically. It is important to play back

recordings and test data storage media periodically to be sure the media are still viable and the contents can still be accessed. If any problems are detected, the information on the carrier should be promptly transferred to a new storage format.

9. Migrate digital recordings to new storage formats/file formats. It is good practice to migrate to new storage media on a semi regular basis. The viability of storage media is dependent on two things—the availability of the necessary equipment to playback the format and retrieve to data off it, and the physical integrity of the medium. Both of these matters must be kept in mind.

More on the Importance of Digital Migration

As mentioned above, in the case of digital materials, media failure can be catastrophic. Regular migration to new media can mitigate the threat of catastrophic failure and help ensure your data will survive into the future. Driven as they are by a consumer market, multimedia and data storage formats change rapidly. Keep tabs on the availability of playback equipment for your video and audio carriers and data storage media, and be prepared to transfer your research materials to new storage formats *before* the media are totally obsolete. If you own equipment to access these materials, be sure to keep it is in good working order—in the end, your video camera, for example, might be the only working one left!

In a related sense, it is also good practice to migrate to new storage media *before* the physical integrity of the old media is in question. Make a habit of copying all your files and recordings to new media at least every few years. Just as media can become obsolete, so can digital file formats. Keep abreast of developments in the areas of digital multimedia and convert any files saved in files that are approaching obsolescence into new uncompressed, standard formats. For materials such as text stored in proprietary word processing formats, it pays to periodically re-save your word processing files as the most current version supported by the manufacturer.

Field recording as a documentary exercise is much more than simply turning on a tape recorder and letting it run. Although such an approach will garner an audio document of the interview event, it will, under most normal circumstances, end up sounding awful.

The better quality a source recording, the better a record it will be for the future. If you hope to create excellent records for the future, you owe it to yourself and your research partners to create the best quality recordings you can.

Final thoughts

The recordings you make are not just physical things. Although taking care of the physical object itself is very important to insuring the longevity of a recorded voice or moving image, it is also important understand how to make a quality recording in the first place so that the listener or viewer does not have to struggle to hear or see its content.

Concerns about the best way to preserve the physical integrity of sound carries are absolutely valid. However, this is only one part of a broad issue. By this I mean that the clearer a recording, the more useful it will be. So spend time before you begin your project learning to use your recorder optimally.

Additional Resources for the Long-Term Preservation of Folklore Research Materials:

- Research forms:
Model Forms from the American Folklife Center's *Folklife and Fieldwork*. <http://www.loc.gov/folklife/fieldwork/formsmenu.html>
- Conservation and Preservation Resources:
Caring for your Collections, Advice from the Library of Congress' Preservation Division <http://www.loc.gov/preserv/careothr.html>
- Documents created and maintained by Andy Kolovos on the Vermont Folklife Center's website:

Digital Audio Field Recordings Equipment Guide. An overview of digital audio field recording technologies currently available to researchers.
http://www.vermontfolklifecenter.org/archive/res_audioequip.htm

Audio Recording Equipment Guide: Retired Equipment List. A list of audio field recording technologies that have been retired from inclusion in the Digital Audio Recordings Equipment Guide. Covers information on analog cassette, DAT, laptop interfaces, MiniDisc and Hi-MD.
http://www.vermontfolklifecenter.org/archive/res_audioequip_retired.shtml

Field Recording in the Digital Age. Information on working with Solid State digital audio recording equipment such as the Marantz PMD660.
http://www.vermontfolklifecenter.org/archive/res_digital-age.html

Digital Editing of Field Audio. A basic introduction to digitizing and editing field audio for access and distribution.
http://www.vermontfolklifecenter.org/archive/res_digitalediting.htm

Resources on the Preservation of Materials in Ethnographic and Oral History Collections, compiled by Andy Kolovos (Vermont Folklife Center) and Marcia Segal (American Folklife Center, Library of Congress) An overview of Web and print resources on the preservation of multimedia materials commonly found in ethnographic and oral history archives.
<http://www.vermontfolklifecenter.org/archive/preservation-resources.shtml>