Audio Preservation: A Beginner's Guide

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Introduction

The field of audio preservation is an ever-growing one that faces many challenges. There is a huge variety of recording formats, each of them requiring differing methods of care, storage, and handling. The same issues that apply to the preservation of print media in libraries, museums, archives and other collections are applicable to audio formats as well, but there are many important differences. The challenges that this type of preservation pose can seem daunting for someone just starting out in the field. This resource guide is meant to provide such a person with an introduction to audio preservation and to list several resources to aid and instruct the user. As there has been extensive research in this field to date, many of the resources listed here can also serve as "jumping-off points," that is, they can lead the researcher to further resources as needed.

It is important to note that audio preservation can be broken down into two main categories: preservation and conservation. Preservation (as is the case with other forms of media such as print, photographs, and other artifacts) deals mainly with the proper storage and maintenance of recordings to ensure that they do not become damaged (or that their decay is slowed as much as possible). Conservation is the practice of attempting to restore already damaged recordings to a usable state so that the information they contain may once again be accessed. Because these two aspects of audio preservation are closely linked, many resources out there provide information on both. However, all researchers have their specializations and specific expertise, so some of the literature focuses more on one aspect than the other. When relevant, this will be noted in the descriptions of the resources listed below.

A Good Starting Point

A person finding themselves in need of information on audio preservation may find themselves in such a situation for a variety of reasons. Some may have had a long-standing interest in sound recordings, or they may have a background in library or archival studies with an emphasis in preservation. Others may find themselves suddenly forced by circumstances beyond their control into a situation where they are in charge of an audio collection and, having no back-ground in the field (audio or preservation) at all, may feel initially overwhelmed.

Slow Fires: On Preservation of the Human Record
http://www.americanfilmfoundation.com/order/slow_fires.shtml
This film was produced in 1987 by the American Film Foundation. While it does not focus on audio preservation, it can be a good starting point for someone with no background in preservation at all. The film does an excellent job of explaining the challenges faced by libraries and how urgent the need for preservation is. This urgency is magnified when it comes to audio preservation because recorded media is much more fragile and prone to decay than its print or photographic counterparts.

There is a sequel to this film, ***Into the Future: On the Preservation of Knowledge in the Electronic Age,*** made in 1997. Viewing both of these films is not necessary in order to provide a person brand new to preservation with the appropriate introduction, but it is interesting to see the differences between the two films and how evolving technologies further compound the difficulties that all preservationists, including audio preservationists, must face.

Slow Fires may be purchased at the above link, but there are other ways to find copies of the film on loan. The easiest way to find information on alternate methods of obtaining the film is to go to Google's advanced search page: http://www.google.com/advanced_search. Type the full title of the film in the "exact phrase" box, and many hits will come up.

Stewart, Eleanore and Banks, Paul N. **"Preservation of Information in Non-Paper Formats."** In *Preservation: Issues and Planning,* ed. Paul N. Banks and Roberta Pilette, 323-342. Chicago: American Library Association, 2000.

This article is the final chapter in an excellent introductory book on preservation. The entire book, ***Preservation: Issues and Planning,*** should be read by anyone who has no previous preservation background. This final chapter has a smaller section within it devoted to sound recordings, and it is at this point that it should be noted that most of what can be found in print on audio preservation is in sources like these or articles in scholarly journals that deal with broader topics. (There is, by the way, no LC subject heading for "audio conservation." Information on this topic will be found in books filed under the call number **Z701, Library materials -- Conservation and restoration**.)

Now, to Focus on Audio

A person trying to acquaint themselves with audio preservation can quickly find themselves overwhelmed with all of the technical jargon that permeates professional discussions on this topic. Quite frankly, there are some people who are better than others at explaining these complicated concepts in simple terms that the layman can understand. To that end, this resource guide will attempt to present the most straightforward and easiest to understand sources of information first, increasing in complexity as it goes on. Because of the nature of some of these sources (particularly the ones available online), though, this level of complexity can get confused and complicated by the presence of cross-references (or links) to more complex material.

Bucknum, Mary Russell. **"Music Sound Archives in the United States."** *Fontes Artis Musicae* 48, no. 4 (2001): 381-90.

This article gives a good introduction to sound archives by detailing their history in the United States. Archives' practices involving collection development, cataloging, access, and preservation are discussed.

Care of Sound Recordings: National Library of New Zealand
http://www.natlib.govt.nz/en/services/2sound.html

This is a rather simple site with some good information on the care, handling, and storage of the most common types of sound recordings. (It is also worth noting that many professionals in the field consider Australia and New Zealand to be the leading countries in audio preservation.)

Sound Directions: Digital Preservation and Access for Global Audio Heritage
http://www.dlib.indiana.edu/projects/sounddirections/index.shtml

This site is an example of the many projects going on around the world in audio preservation. On its introductory page, it briefly describes some of the problems involved in preserving sound recordings by converting them into digital format, which is the latest trend in audio preservation. There are significant risks involved in this practice, known as digital preservation, and there are debates on it throughout the professional community.

Digitizing the voices of the past / Science perfects sound of century-old recordings
http://sfgate.com/cgi-bin/article.cgi?file=/c/a/2004/07/12/MNGJP7JRC21.DTL

The article on this site describes the work of audio preservationists at the Lawrence Berkeley National Laboratory. Using state-of-the-art technology, they have found ways to retrieve audio from old wax cylinder recordings without harming them. Articles like this often cause excitement within the audio preservation community, but careful audio preservationists should know that newly developed techniques and technologies should be viewed with appropriate skepticism.

Pennavaria, Katherine. **"Film, CD, and Audio/Video Tape Preservation: A Serious Problem for Libraries!"** *Kentucky Libraries* 66 (spring 2002): 14-17.

This article starts off with a startling account of precisely how short the shelf life of audiovisual media can be (anywhere from 10 to 100 years). It goes on to suggest several sources (print, electronic, and audiovisual) for further information on audiovisual preservation.

Getting into More Detail

Now that we have been through some of the introductory material, it is time to delve into the more detailed resources that are out there. It is at this point that a newcomer to audio preservation may feel overwhelmed, but they should not. The resources listed below are not meant to be things that should be read immediately and committed to memory. Rather, one should read through these resources and know that they are available for future reference as needed.

Recording Technology History
http://history.acusd.edu/gen/recording/notes.html

This extremely detailed timeline traces every significant development in recording technology from the first tinfoil cylinder recording in 1877 to the 2005 release of Apple's iPod Shuffle. Pictures and an exhaustive list of links to related information are also provided. An understanding of the history of recorded sound is essential for an audio preservationist for many

reasons, one of them being that the seemingly endless variety of formats (or variations within formats, such as different kinds of tapes, records, and such) have evolved for complicated reasons.

Paton, Christopher Ann. **"Preservation Re-Recording of Audio Recordings in Archives: Problems, Priorities, Technologies, and Recommendations."** *The American Archivist* 61 (spring 1998): 188-219.

As its title suggests, this article examines several aspects of audio preservation. It describes in great the detail the physical nature of such old formats as magnetic tape and grooved phonodiscs (records), then discusses precisely what should be reformatted (that is, recorded onto a newer, more modern format) and when.

Review of Audio Collection Preservation Trends and Challenges
http://www.arl.org/preserv/sound_savings_proceedings/brylawski.html

This article, written by the former head of the Library of Congress Recorded Sound Division, addresses conservation practices and the impact of digital technologies on audio preservation.

The Safeguarding of the Audio Heritage: Ethics, Principles, and Preservation Strategy
http://www.iasa-web.org/iasa0013.htm

This document, prepared by the International Association of Sound and Audiovisual Archives (IASA), goes into extreme detail on its practices in audio preservation. It starts off with a list of definitions of terms commonly used in the field, then describes the various preservation problems inherent in "an increasingly digital environment."

Task Force to establish selection criteria of analogue and digital audio contents for transfer to data formats for preservation purposes
http://www.iasa-web.org/taskforce.pdf

Another document from the IASA that focuses on determining which recordings should be reformatted for preservation. All available formats are discussed in great detail, as is the issue of technological obsolescence, a problem that comes up often in the preservation of non-print media.

Reformatting: Terminology, Intent and Practices
http://mic.imtc.gatech.edu/preservationists_portal/presv_reformtg.htm

This article is written by Chris Lacinak, head of Vidipax, a well known media restoration company in New York. In it, he describes his findings in a survey he conducted of audiovisual preservationists as well as his theories on the different kinds of reformatting that can be done for magnetic media.

Audio and Video Preservation Reformatting: A Library of Congress Perspective

This article by Carl Fleischhauer goes into detail about the practice of converting analog formats to digital, the difficulties involved, the reasons for doing so, and how this impacts preservation. (A frequent debate among information professionals is whether the term "digital preservation" is an oxymoron given that digital media can be frightfully unstable.)

Rothenberg, Jeff. **"Ensuring the Longevity of Digital Documents."** Scientific American 272 (January 1995): 42-47.

An article on the unstable nature of digital media and the misconceptions people have on its use as a stable format for preservation. It is important for an audio preservationist to be aware of the dangers of relying on digital media given that transfer from analog to digital is the way in which most institutions currently preserve their recordings. This article is included in this resource guide as an introduction to this concept; there are a great deal more similar articles out there to be found.

Are DVDs Archival?
http://videosystems.com/e-newsletters/Are_DVDs_Archival082505/

As may have become apparent already, information on audio preservation is often grouped with information about the preservation of other non-print media, particularly video. This is because the media used to store video is very similar to that used for audio, so a lot of the same preservation issues apply (though not once you get down to the details). This article, written by D.W. Leitner, addresses the same issues in some of the above resources in regards to how stable DVDs may or may not be for long-term storage of digital information. (Some archives have also developed the practice of storing sound recordings on VHS videotape and on DVD, a method that many audio preservationists are uncertain of.)

The article also contains a link to an article that many audio preservationists consider the definitive source on CDs and DVDs: **"Care and Handling of CDs and DVDs – A Guide for Librarians and Archivists"** by Fred R. Byers.
The direct link to this extensive article is:
www.itl.nist.gov/di! v895/carefordisc/CDandDVDCareandHandlingGuide.pdf

Copyright Information Center at Cornell University
http://www.copyright.cornell.edu/

Another issue that arises in audio preservation, in fact in all preservation that involves reformatting of the original, is copyright. The details of this complicated issue are too great to go into in this resource guide, but there are links to articles on the topic in some of the resources listed below.

This site is included in this resource guide as a reference to the information it contains on copyright law, including the yearly updated **chart on copyright term and public domain** at
http://www.copyright.cornell.edu/training/Hirtle_Public_Domain.htm

Into the Future

As was alluded to at the beginning of the previous section, the links and citations included in this resource guide are not meant to be a straightforward reading list, that is, it is not necessary to read every single word in every single resource listed and have it memorized. This guide is meant to be a reference for an audio preservationist who is just starting out in the field and does not know where to look for advice, and they may return to this list whenever necessary.

To that end, we close with five more resources which are extremely exhaustive in their content. Anyone could spend months reading through all of the material on these sites, but that is not why they are there. They are, like this resource guide, meant as starting points, and it is up to the researcher to decide precisely what information they are seeking.

Association for Recorded Sound Discussion List (ARSCLIST)

This is perhaps the most valuable resource I can put in this guide. Based at the Library of Congress, the ARSCLIST is a forum for audio preservationists to discuss all aspects of sound recordings, exchange ideas, ask questions, offer advice, make announcements, post jobs, etc. A newcomer to the list is warned, though, that many of the topics discussed may be quite technical and perhaps intimidating at first. However, the listserv exists to provide information to people with all levels of expertise, no matter how high or low. As with any online community, there are the occasional show-offs who like to speak only in jargon so as to seem impressive, but for the most part, it is a very friendly and helpful listserv with many members who! are willing to answer even the most basic questions about audio preservation or sound recordings in general. Users may subscribe to the list at: http://listserv.loc.gov/cgi-bin/wa?SUBED1=arsclist&A=1

ARSC Journal
http://www.arsc-audio.org/journal.html

ARSC also publishes a bi-annual journal with articles on all aspects of sound recording, audio preservation and conservation, history, and current research. Back issues can be ordered from this site.

Sound Savings Proceedings
http://www.arl.org/preserv/sound_savings_proceedings/

This site provides online access to papers that were presented at the symposium "Sound Savings: Preserving Audio Collections" in Austin, Texas in 2003. There are many useful sources of information for audio preservationists here, all written by experts in the field.

Audio Archiving Resources
http://www.eden.rutgers.edu/~vforrest/poets_house/Audio_Archiving/

This "webliography" is an extensive list of all sorts of sites pertaining to audio preservation and its related fields. There are many topics here that are not covered elsewhere i! n this resource guide, so it is definitely worth bookmarking for future reference.

Audio Preservation and Restoration Directory
http://www.arsc-audio.org/Directory2005-07-25.pdf

This is a guide to professionals in audio preservation. Descriptions and contact information for their institutions and businesses are listed and categorized according to their specialization (preservation transfer, restoration, disaster recovery, equipment and supplies, and consultation and training).