From Cassette to Cloud

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Today’s Presenters

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Research in digitization standards, oral histories and ethical issues related to digital dissemination of cultural heritage materials.
ALCTS Preservation Week Partners

Hosted by ALCTS
The Association for Library Collections and Technical Services
Digital Preservation Lifecycle

- Inventory
- Sustainability
- Evaluation
- Rights
- Delivery
- Digitization
- Metadata
Webinar Scope Note

- Open Reel Tapes
- Audio Cassettes
- Digital Audio Tape
- Vinyl Discs
- Lacquer Discs
- Wire Recordings
- Others

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Inventory

- How Much?
- What Type?
  - Manufacturer
  - Make
  - Model
  - Recording Speed
- What Condition?
Evaluation: Condition Emergencies

- Tape Pack Problems
- Binding Issues
- Vinegar Syndrome
- Mold
- Other

(Casey 2007)
Rights

- Deeds of Gift
- Release Forms
- Copyright

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(Half of) The Metadata Universe
Dublin Core Metadata Spreadsheet

Metadata standards/schema will be determined by local needs

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Storage Options

Local Storage

- CDs/DVDs/Blue Ray
  - 25 discs @ $1/Disc
  - Software $40-$60

- External Hard Drives @ $1/GB – ($100/TB)

Cloud Storage

- Google Drive, Amazon Cloud Drive, iCloud, Dropbox

  FREE OR @ $120/year or $10/month for 1TB
The Formula & Its Relationship to Preservation Standards

\[ L \times S \times B \times C = \text{Audio File Size in MB} \]

Length of recording in seconds

- **Sampling Rate**: 44.1kHz, 96kHz
- **Bit Depth**: 8 bit, 16 bit, 24 bit
- **Channels**: 1 (mono), 2 (stereo)

(Cunningham and Johnson, Gault and Florence in White, 2016)
Audio Preservation Standards

Digitization Parameters

Digitization Standards

Minimum Standard: 44.1kHz Sampling Rate, 16 Bit, 2 Channels

Recommended Standard: 96kHz Sampling Rate, 24 Bit, 2 Channels

High Level (Maximum) Standard: 192kHz Sampling Rate, 24 Bit, 2 Channels

(Beard, et. al., 2010)
Audio Preservation Standards
Digital File Formats

Uncompressed, Unedited Archival Masters
.WAV or BWAV (Broadcast Wave)

Presentation Files
.MP3 or .AAC

(Beard et. al., 2010)
Converting the Sound: Hardware

Computer: $1,800
Original Format Player: $?
Digital Analog Converter (DAC): $60-75
or External Sound Card
Speakers: $20-30
Analog RCA Cables: $10
Staff Work Hours: $?

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Converting the Sound: Hardware
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Open Reel Player

Dual Cassette Deck
### Converting the Sound: Software

<table>
<thead>
<tr>
<th>Software</th>
<th>Price</th>
<th>Link</th>
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<tbody>
<tr>
<td>Audacity</td>
<td>Open Source/Free</td>
<td><a href="https://sourceforge.net/projects/audacity/">https://sourceforge.net/projects/audacity/</a></td>
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Converting the Sound: Software
Converting the Sound: Software
### Other Considerations: Delivery

- **Create your own website from scratch**
  - HTML, Interface Design, Network Administration

- **Use a web platform or content management system**
  - OMEKA, WordPress, SoundCloud, CONTENTdm

- **Keep local availability via storage only**
  - Users use a single computer to access recordings
Other Considerations: Sustainability

- Digital Storage Replacement/Subscriptions
- File management and Checksums
- Website Maintenance and Hosting Fees
- Work Hours

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Questions?
References


Resources 1

Isaiah Beard, et al., *Sound Objects: Recommended Minimum Requirements for Preservation Sampling of Audio* 


Sam Brylawski, Maya Lerman, Robin Pike and Kathlin Smith, Eds., *ARSC Guide to Audio Preservation* 

Mike Casey, *The Field Audio Collection Evaluation Tool: Format Characteristics and Preservation Problems* 

For Help with Damaged Tapes, Vinyl and other objects: 
ARSC Technical Committee Audio Preservation and Restoration Directory (Updated October 2015) 

Newegg.com (Evaluating/Purchasing DACs) 
http://www.newegg.com

WordPress .org for download 
https://wordpress.org/
WordPress Pricing (site hosting) 
https://wordpress.com/pricing/

Omeka Digital Exhibit Software for download 
https://omeka.org/
Omeka hosting at Omeka.net 
https://www.omeka.net/signup

SoundCloud 
https://soundcloud.com/
PB Core Metadata Standard  http://pbcore.org/

Dublin Core Metadata Standard  http://dublincore.org/documents/dces/

Metadata Basics from the Dublin Core Metadata Initiative  http://dublincore.org/metadata-basics/

Audio Software Tutorials

Audacity  This tutorial is specifically designed for learning to digitize analog audio recordings with Audacity:
http://manual.audacityteam.org/man/tutorial_copying_tapes_lps_or_minidiscs_to_cd.html
http://manual.audacityteam.org/man/tutorials.html
http://wiki.audacityteam.org/wiki/Category:Tutorial


Adobe Audition  This tutorial from the University of Nebraska Libraries is quite old, so the menus and settings on Audition will have changed, but the basic information is sound. It also has options for bypassing the purchase of a DAC. You can experiment with this – I have not attempted to do replicate this process and have always used DACs in my digitization work.
http://libraries.unl.edu/images/Services/digital_media_services/Cassette_tape_to_%20mp3.pdf
https://helpx.adobe.com/audition/tutorials.html