

# Processing Audiovisual Resources

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## Introduction

While the difference in working with audiovisual and paper resources in an archive may appear obvious, the overarching, brass-tacks difference between the two has less to do with physicality than intellectual approach. Simply put, audiovisual collections require Level 4 description to be adequately accessible to scholars and students doing their initial research; that is, without an item-level inventory, it is highly unlikely that audiovisual resources will be used, meaning there is a parallel unlikelihood that the resources will receive preservation attention. Therefore, the first step in preservation of audiovisual collections is capturing existing textual description of materials, and linking that description to a unique identifier so that the resource can be easily tracked and found. This guide will focus on item-level processing of AV resources. Transfer and migration of resources will be touched on, but only broadly.

## The Assumption

The AV items have been separated from other materials in the collection, and notes made where items relate to paper or other resources. [If AV items have not yet been separated from paper, consult this guide before moving on.](#)



## Setting Up

- Acquire an RL collection number, if one does not already exist for the collection, so you can create unique identifiers for your items. The easiest way to do this is to check ArchivesSpace for the last collection number shown in the Resources pane. Lay claim to the next available sequential number by creating a resource record for the collection. For our example, we'll use RL99999.
- Ensure that the collection has been weeded or that there is an understanding that everything in front of you will be kept. Numbering can go forward without weeding, but then a note will need to be made regarding deaccession of a particular item, to explain gaps in the numbering.
- Create unique identifier labels to apply to the AV items. Unique identifiers are constructed from a combination of the RL number, the format abbreviation, and a sequential number.
  - For format abbreviations, [consult this sheet](#). If a format does not appear on the sheet, consult the Audiovisual Archivist.
  - The numbers should look like: RL99999-F16-0001, RL99999-F16-0002, etc., for 16mm film, RL99999-CS-0001, RL99999-CS-0002, etc., for audiocassettes, and so forth. Each format has its own sequence starting at 0001. If a particular format within a collection exceeds 9,999 items, the sequence should begin with four leading zeroes (00001).
  - Use Gaylord foil-backed ½"h x 1¾"w labels. These will fit a variety of format cases or spines. The current supplier for the label is Demco:  
<http://www.demco.com/goto?BLS250613&ALL0000&es=20150526080653654200>.
  - Write the numbers in pencil on the labels, or use an Excel sheet as your data source and set up a mail merge in Word, using the Avery 6467 label template (access templates here: <https://sharepoint.oit.duke.edu/sites/perkins/rubenstein-electronic-records/HowTo%20Guides/label%20template.aspx>). Note that for films we often use a Sharpie to write the number on the top and side of the can, rather than use a foil-backed label.
- In SpeColl\Audiovisual Materials\Tools\Templates, open the latest version of the spreadsheet, audiovisual\_master\_inventory\_template. Immediately do a SaveAs to F:\SpeColl\Audiovisual Materials\Collections\collection name\collectionname\_audiovisual\_master\_inventory.xls, creating the collection folder if it doesn't already exist. The fields in this sheet represent the metadata you need to capture. Note that you may not need to use all the fields, but the ones marked \* are required. (You can also access this template [here](#)).
  - **\*Item unique ID.** This is the RL item number, e.g. RL99999-F16-0001.
  - **Accession number.** If an accession number is available, it goes here.
  - **Program/interview/component title.** This is where you would put a series/subseries/file name in cases where multiple items will be represented



under a common component. For instance, “Rubenstein Smith oral history” might apply to multiple items produced during an oral history interview, or “Rubenstein Smith’s trip to Tahiti” would be used to collect together materials specific to that journey. This is helpful when we take the spreadsheet and crosswalk it into ArchivesSpace.

- **\*Container note / label.** This is a more-or-less verbatim transcription of the item’s label. Sometimes items have more than one label (e.g., one on the spine of the cassette case, one on the face of the cassette) -- in this case use the more complete label or if necessary combine the wording (some imaginative editing may be necessary) to give a complete picture. Generally, do not capture information on the vendor of the tape if, for instance, a production house’s name and address are on a pre-printed label, UNLESS that information is somehow significant to the content of the item or the collection. An item without a label should be designated “unlabeled.”
- **\*Date.** The date of the content represented in the AV item. Format: YYYY Month DD, or if the collection is large and will need to be sorted by date, use YYYY-MM-DD. An item without a date should be designated “undated.”
- **\*Format.** The full name of the format of the audiovisual item. Use the dropdown in the spreadsheet.
- **Content note.** This field can be used to put scope and content note information for the item.
- **\*Generation.** This field indicates the generation (some might say “version,” although this isn’t entirely accurate) of the item, whether it’s the original recording, preservation master, use copy, or obsolete surrogate. Note that in general “original recording” should be the default, and can refer to the recording that came from the donor originally. However, in cases where we know we have derivatives created specifically for preservation or use, that either came from the donor or were made in-house prior to the advent of digital preservation and that we have decided to keep, the other values should be used as appropriate. Use “obsolete surrogate” to indicate that a legacy use or preservation format may not be readily playable locally (e.g., wire recordings, reel video) -- consult with the AV Archivist if necessary.
- **isFormatOf.** A Dublin Core Relation qualifier, isFormatOf indicates the item being described is a format, or derivative, of an original item described in another record in the sheet. Enter that original item’s unique ID in the record’s cell.
- **hasFormat.** A Dublin Core Relation qualifier, hasFormat is the complement to isFormatOf, and indicates there is another item in the sheet that is a derivative of the item being described. Enter that derivative’s unique ID in the record’s cell.
- **\*Container 1 type.** In almost all cases this will be “Box.” The exception with audiovisual materials is typically a film reel that is too large to go into a box, in which case the value would be “Reel.”
- **\*Container 1 number.** The box number.



- **\*Container 2 type.** This indicates the general category of audiovisual type, not specific format, so for instance a standard audio cassette or DAT would both get the value “audio-cassette” since they are both audio tapes that are played back within cassettes. Similarly, both an MOV and MP4 would get the value “video-file,” and phonodisc would apply to grooved disc recordings, whether they’re vinyl microgroove, shellac 78s, or lacquer instantaneous discs. Use the dropdown and select the appropriate value -- consult the AV Archivist if necessary.
- **\*Container 2 number.** Simply copy the unique ID of the item to this cell.
- **Preservation note.** An open text field for any comments on condition of the item.



## Rehousing and format considerations

Audiovisual materials have been housed in all imaginable containers over the years at the Rubenstein. While we'd like to overlay a certain order on the chaos, realities can intervene, such as the expense of rehousing, as well as cataloging issues attending changing out containers if the collection is being re-processed. Generally, we have been able to support rehousing analog audiovisual materials on the strength of the argument that they need to be separated from the rest of the collection, if only so they cannot be requested along with papers they might be sharing a box with. [Separation](#) also aids preservation and maximizing space.

A general rule of thumb in rehousing audiovisual resources is that, except for motion picture film, materials should be stood on edge, and that like formats should be housed together to maximize space. Applying unique identifier labels should proceed with this in mind, ensuring that labels can be read as easily as possible when a box is opened. It's up to you to decide on your workflow, whether to rehouse as you label and log items into the inventory, or to complete those processes in other combinations. There's no one right way, although rehousing up front can provide the opportunity to sort materials (chronologically, etc), which can help when entering large volumes of information in the inventory. And, even though the unique IDs are meant to be only that (that is, unique), the fact that formats are numbered sequentially can suggest a certain order is being followed even if it is not. Given this, sometimes ordering AV physically as well as intellectually can reduce confusion on the part of the researcher or colleague.

Rehousing will be discussed here along with other considerations attending each format. For each common format, there will be a link to the Rubenstein Archival Housing Guide page related to that format.

### Standard Audiocassettes

Housing guide: <https://rl-techservices.lib.duke.edu/node/58>

The most versatile of analog audio formats, in that they were geared towards a mass market and could be used to both inexpensively record and playback audio, audiocassettes are pervasive in archives. They have their issues but typically aren't an immediate preservation risk: high-quality playback decks are still available, if on the used market, and typically the shell and the pressure pad fail before the tape, both fixable. Note that, given the width of the tape, standard audiocassettes were used not for their fidelity but for their portability, so in archival collections it is not uncommon for cassettes to contain oral histories or field recordings, where portability is key, or to be use copies of audio masters created on another format. Audiocassettes can be played back in Technical Services.

### Motion picture film

Housing guide: <https://rl-techservices.lib.duke.edu/node/62>,  
<https://rl-techservices.lib.duke.edu/node/61>, <https://rl-techservices.lib.duke.edu/node/60>



Motion picture film comes in three primary sizes: (Super)8mm, 16mm, and 35mm. While there are many formulations, most film made up into the 1970s used an acetate base, meaning that a lot of film in archives is subject to “vinegar syndrome,” or a breakdown of the base that shrinks the film and has a distinctive smell of vinegar. Basic preservation for 16mm and 35mm films means getting them off their reels and onto cores, where possible, and storing them in cool or cold storage in preservation cans. Consult with the AV Archivist on film collections and winding film onto cores. Super 8mm and 16mm film that is in good condition can be played back, with some limitations, in Technical Services.

## Optical media

Housing guide: <https://rl-techservices.lib.duke.edu/node/49>

Optical media, or CDs and DVDs, are for many still the preferred carrier for digital audio and video. Audio CDs and moving image DVDs are distinguished by the way they are encoded -- they are meant to deliver music or moving image material using the playback protocol developed for CD and DVD players. Thus if you open an audio compact disc in your computer's file manager you'll see something that looks like “Track 1.cda,” “Track 2.cda,” etc. -- these are pointers to the underlying audio on the disc, not the audio files themselves, which are typically 44.1kHz/16-bit PCM (pulse code modulation) files that are equivalent to WAV files. If you open a DVD in your computer's file manager, you'll typically see two directories, “AUDIO-TS” and “VIDEO-TS.” Unless the disc has enhanced audio features, AUDIO-TS is usually empty. VIDEO-TS contains the files that speak to the DVD player and .VOB files (which are MPEG2 video files). VOB's can be played back on your computer but you may need to install VLC player, a free, open-source player that can play most video files:

<http://www.videolan.org/vlc/index.html>. Because of the preservation risks associated with optical media, the Rubenstein Library has put in place a policy to image audio and video discs as we would data discs. However, not all discs should be imaged. Consult this decision matrix before imaging discs:

[https://docs.google.com/document/d/1G2HO\\_qyoEWQ9gArjtz\\_MZloaUhooYMLIMtKpMTv0aPg/edit?usp=sharing](https://docs.google.com/document/d/1G2HO_qyoEWQ9gArjtz_MZloaUhooYMLIMtKpMTv0aPg/edit?usp=sharing). Information on imaging discs is here:

<https://sharepoint.oit.duke.edu/sites/perkins/rubenstein-electronic-records/HowTo%20Guides/Media%20Accessioning%20Workflow.aspx>. As of this writing, we use FTK Imager for imaging audio discs and movie DVD, jacksum to create SHA256 checksums, and store the image files on a CIFS dark storage server along with the output of jacksum. Consult with the AV Archivist for further details.

## Phonodiscs

Housing guide for lacquer discs: <https://rl-techservices.lib.duke.edu/node/45>

Housing guide for shellac discs: <https://rl-techservices.lib.duke.edu/node/44>

Housing guide for vinyl discs: <https://rl-techservices.lib.duke.edu/node/46>

While phonodiscs are often lumped together into one category, there are profound differences among their formulations, structures, and formats. Instantaneous discs (aluminum, glass



lacquer, aluminum lacquer, cardboard lacquer, vinyl), shellac discs (often associated with the classic era of the 78 rpm record), and vinyl discs ("microgroove" 33 1/3 rpm long player, 45 rpm 7" single) each have unique profiles, but by far the most challenging of the phonodisc formats is the lacquer-coated instantaneous disc, which wasn't created using a stamp but rather a lathe, the signal etched into the lacquer acetate. This coating can shrink while the base stays stable, resulting in "crazing," flaking, and other failures via delamination. Additionally, glass-based lacquer discs, most commonly used during World War II when aluminum went to the war effort, are prone to breaking. When lacquer discs are encountered, consult with the AV Archivist.

### **SPECIAL SEPARATION INSTRUCTIONS FOR VINYL MICROGROOVE PHONODISCS**

Due to the relative trickle of commercially produced vinyl microgroove phonodiscs (LPs, 45s) that we see, their general value as published resources, and the expense of housing two or three discs per collection in specialized boxes, [please take the approach outlined here for these materials](#).

### **Video cassette tapes**

Housing guide: <https://rl-techservices.lib.duke.edu/node/59>

As with standard audio cassette tapes, archives tend to have large holdings of video cassette tape, which first made a splash in the early 1970s, as 3/4" Umatic video tape cassettes were used extensively by broadcasters and commercial video houses to create submasters of video programs captured on open reel video. With the rise of betamax, quickly to be overtaken by VHS, in the late 1970s, the consumer market for video cassettes exploded, and home video came into its own. Quality took a backseat to convenience, and today archival video resources on Umatic and VHS are both low in resolution and high in preservation risk, with Umatic tape often suffering from the kind of binder hydrolysis common to audio tapes manufactured in the 1970s. Most consumer video cassette formats are plagued by being on the wrong end of the quality/convenience spectrum, and while professional formats, such as Betacam and Digibeta, are far superior, because of their playback requirements they too can present challenges. VHS and Mini-DV tape can be played back in technical services, while the Digital Production Center can handle Umatic, VHS, Betacam, and Mini-DV.

### **Video tape (open reel)**

Housing guide: <https://rl-techservices.lib.duke.edu/node/47>

Open reel video tape was available in size from 1/2" to 2", and was mostly used in broadcasting or professional video studios, although some portable machines (accommodating the smaller width tape) were available before video cassette tape took over the portable market. The biggest problem with video reels, which typically have fairly high resolution, is finding the money to pay a vendor to play (and transfer) them.



## Description

### Catalog considerations

Once your AV inventory is filled in, you'll want to make certain that, if a catalog record doesn't exist for the collection, you go ahead and make one (see documentation on OCLC Connexion and Aleph in Sharepoint, but if you're unsure of how to approach this, ask one of the catalogers). It's important to ensure the catalog record for the collection reflects the presence of audiovisual materials. Regardless of formats, any record with audiovisual materials should contain the 655 genre term from the Art and Architecture Thesaurus, "Audiovisual materials." It looks like this in Connexion:



655 7 Audiovisual materials. #2 aat

There are also format and format types from AAT that can be listed in the genre field, including:

- audiocassettes
- microcassettes
- videocassettes
- 16mm
- 8mm (size: photographic film)
- Super 8
- Betacam-SP
- 3/4-inch
- digital audio tapes
- digital moving image formats
- DVDs
- compact discs

Also, remember to add a 710 Added entry for collecting center, for example:



710 2 [Archive of Documentary Arts \(Duke University\)](#)

### From inventory to ArchivesSpace

The audiovisual inventory is meant to describe an item broadly, the physical or virtual carrier of the audiovisual information accompanied by a summary of its content. When it comes to describing the detailed content of that thing in a finding aid, however, matters get a bit more complex.

#### The many-to-one problem

For instance, there may be two programs on a cassette tape, or two cassette tapes may contain parts of the same program. A common problem occurs with oral history collections. Imagine that side one of an audio cassette contains an interview with Alan Lomax, and side two contains an interview with Mike Seeger. Because we typically organize oral history finding aids by interviewee name and date, the physical item that is the cassette will be described in two places



in the finding aid, once under “Alan Lomax Interview” and once under “Mike Seeger Interview.” (Note, however, if Alan Lomax and Mike Seeger were interviewed together, the cassette would only be described in one place, under “Alan Lomax and Mike Seeger Interview”.)

### STEADY

“Many-to-one” issues like this can be resolved when crosswalking the audiovisual inventory into ArchivesSpace using the STEADY spreadsheet, where the record for the cassette can be repeated for each interview it contains. STEADY’s function, essentially, is to take spreadsheet records and convert them into a hierarchical structure. To make this happen, each record in the STEADY sheet has to be assigned Series, Subseries, and File levels, and converted into EAD using the STEADY conversion tool. Here’s an example of the [STEADY spreadsheet](#) used for an oral history collection. Some important things to note on the spreadsheet:

- The file title is a concatenation of the Generation and Format fields of the inventory. This allows us to communicate, in a clear fashion, what formats are associated with an interview or program.
- Subseries numbers tell the STEADY conversion tool what subseries a record goes into, and in what sequence they will appear in the EAD document and therefore finding aid.
- Container 2 type refers to the general type of audiovisual resource, providing enough information so that both the researcher and archivist have an idea of a resource’s mechanics without getting bogged down in format specifics. Containers must conform to what will be accepted in ArchivesSpace, and include:
  - audio-reel
  - audio-cassette
  - audio-disc
  - audio-file
  - audio-phonodisc
  - video-cassette
  - video-disc
  - video-file
  - video-reel
  - film-reel
- The sheet must be saved as a .csv file to work with the steady application.
- Upload the sheet to the STEADY application here, <https://sleepy-ocean-6616.herokuapp.com/>, to download a converted EAD file.
- To conform to DACS-recommended methods for description, in most cases with AV materials we’ll want to express the subseries coming out of STEADY as files, and files as items, UNLESS there is a strong argument for lumping together sets of AV resources (if this is indeed the case, create a separate .csv for each subseries). Because STEADY doesn’t allow this kind of granularity, we have to hack it post-conversion. Open up the downloaded EAD file in Notepad++ and do the following search-and-replace functions.
  - replace <c02 level="subseries"> with <c02 level="file">
  - replace <c03 level="file"> with <c03 level="item">



In the EAD file, the result will look like this:

```
<c02 level="file">
  <did>
    <unitid>2</unitid>
    <unittitle>Block, Sam, 1986 December 12</unittitle>
    <unitdate>1986 December 12</unitdate>
  </did>
  <c03 level="item">
    <did>
      <unittitle>Original audiocassette, 1 of 3</unittitle>
      <unitdate>1986 December 12</unitdate>
      <container type="box" label="Audio">6</container>
      <container type="Audio-cassette" label="Audio">RL10056-CS-0053</container>
    </did>
  </c03>
  <c03 level="item">
    <did>
      <unittitle>Original audiocassette, 2 of 3</unittitle>
      <unitdate>1986 December 12</unitdate>
      <container type="box" label="Audio">6</container>
      <container type="Audio-cassette" label="Audio">RL10056-CS-0054</container>
    </did>
  </c03>
  <c03 level="item">
    <did>
      <unittitle>Original audiocassette, 3 of 3</unittitle>
      <unitdate>1986 December 12</unitdate>
      <container type="box" label="Audio">6</container>
      <container type="Audio-cassette" label="Audio">RL10056-CS-0055</container>
    </did>
  </c03>
  <c03 level="item">
    <did>
      <unittitle>Transcript</unittitle>
      <unitdate>1986 December 12</unitdate>
      <container type="box" label="Mixed materials">1</container>
    </did>
  </c03>
```

In ArchivesSpace, the result will look like this:

Joseph A. Sinsheimer papers	Collection	
Interviews and speeches, 1963-1987	Series	
Adams, Victoria Gray interviewed by Joseph Sinsheimer, 1987 August 23	File	
Adams, Victoria Gray interviewed by John Dittmer, 1989 May 8	File	
Allen, Emma interviewed by Joseph Sinsheimer, 1986 May 5	File	
Block, Sam interviewed by Joseph Sinsheimer, 1986 December 12	File	
Original audiocassette, 1 of 3	Item	Digital Object, Audio, D box: 6, audio-cassette: RL10056-CS-0053
Original audiocassette, 2 of 3	Item	Digital Object, Digital O box: 6, audio-cassette: RL10056-CS-0054
Original audiocassette, 3 of 3	Item	Digital Object, Digital O box: 6, audio-cassette: RL10056-CS-0055
Transcript	Item	Digital Object, Mixed M box: 1



In the finding aid, the result will look like this (although note that the title has been tweaked and the scope and content note was added after the EAD file was imported into Archivists Toolkit/ArchivesSpace -- STEADY allows scope and content notes only on individual items):

<p>Block, Sam interviewed by Joseph Sinsheimer, 1986 December 12</p> <p>SNCC's lead organizer in Greenwood, MS, 1962-1963. Interview with Sinsheimer. Block discussed: his childhood experiences with racism in Mississippi; his "recruitment" into the civil rights movement by Amzie Moore; developing a voter registration campaign in Greenwood; Cleveland Jordan's role in developing the Greenwood movement; Rev. Aaron Johnson's decision to open the First Christian Church to the movement; working with SNCC field secretary Willie Peacock in Greenwood; developing a voter registration campaign in Itta Bena, Mississippi; Bob Moses' role in the Mississippi campaign; the role of SNCC Executive Secretary James Forman in the Mississippi movement; the difficulty in getting black churches to open their doors to the movement; SNCC's relationship with the NAACP in the state; the psychological effects of the March on Washington in 1963; the need for greater staff education in the Mississippi movement.</p>		
Original audiocassette, 1 of 3	<a href="#">Play</a> <a href="#">Play</a>	Box 6 Audio-cassette RL10056-CS-0053
Original audiocassette, 2 of 3	<a href="#">Play</a> <a href="#">Play</a>	Box 6 Audio-cassette RL10056-CS-0054
Original audiocassette, 3 of 3	<a href="#">Play</a> <a href="#">Play</a>	Box 6 Audio-cassette RL10056-CS-0055
Transcript	<a href="#">View</a>	Box 1

In this example from the Joseph Sinsheimer papers, note that associated with the tapes are streaming files that play straight from the finding aid. This is accomplished by attaching digital objects to the record. This process will not be covered in this guide, but should be approached in consultation with the Audiovisual Archivist and Metadata Archivist.



## Transfer and migration

With few exceptions, before analog audiovisual materials can be accessed they must be digitized. Exceptions include common analog formats that we consider legacy use copies, such as audiocassette and VHS videocassette, in situations where a researcher made special arrangements to audition these; sometimes, too, film students and scholars want to see original or preservation prints, and we will occasionally allow these to be shown if the film is in good condition and the projection system is high quality.

In the Rubenstein Library we do not as a matter of course digitize analog audiovisual resources before they are requested by patrons. However, we do both grant-funded and in-house preservation projects, utilizing vendors and the Digital Production Center. In Technical Services we have the ability digitize audiocassettes and open reel audio tapes, but in limited quantity. Analog audio resources are digitized using a sampling rate of 96 kHz (96,000 samples per second of audio) with a 24-bit depth (16,777,216 tonal possibilities per sample). This yields an electronic file of 2GB per hour.

Video and film digitization is often discussed in terms of frames, dimension, bit depth, and bit rate. Image frames, when digitized, or born digital for that matter, are made up of intersecting horizontal and vertical lines of pixels that create the frame's width and height dimensions, and each pixel has a color value that can vary depending on bit depth. The more frames there are per second, the greater the numbers of lines and pixels, and the greater the bit depth, the greater the resolution and bitrate. Current preservation standards at Duke for digitizing film and video call for maintaining original frame rate and dimensions, and using a 10-bit color depth capture, meaning that there are 1,024 possible colors for each pixel. Chroma subsampling, a ratio indicating the values of light and color information sampled, is set at 4:2:2 (where 4 is luminance and the 2's are color information) out of a possible 4:4:4.

[See this document](#) for AV digitization standards used by the Digital Production Center.

\* 720x480 is the dimension for standard definition video, HD runs from 1080x720 up to 4K ([see this chart](#)).

\*\* Frame rate for standard definition video is 29.97 interlaced frames per second. Interlacing means frames alternate sets of "fields" that together make up a full picture, so each second of standard definition video really has only 15 complete frames. High definition video, on the other hand, can have 60 full frames per second, also known as 60p (p for "progressive").

## Disc imaging

The growing number of born digital resources received by the Rubenstein Library has necessitated a method for effective preservation of a number of different formats. For our purposes currently, born digital AV, while technically encompassing tape-based digital formats like DAT and MiniDV, really starts with optical discs: compact discs and DVDs. Preserving



optical discs by imaging them is a fairly simple task that can be done at processing, and is an extension of the preservation methodologies developed by the Digital Records Archivist. There are three general steps:

- Determining if you should image. Appraising discs is not typically high on the list of priorities for curators, so is often completed at processing. We have developed a tool to guide the decision on whether or not time should be taken to image a disc. [That tool can be found here.](#)
- Imaging the disc.
- Creating a checksum and storing the image.

The software(s) used to image the disc and checksum the files are in flux, and access to dark storage, where the files are stored, is limited. Consult with the AV Archivist or Digital Records Archivist.

### **Steenbeck**

The AV Archivist has a Steenbeck film editing table that can be used to view, and to take sub-preservation-quality video from, 16mm film that is in good condition. Video is captured by a DSLR mounted in front of the viewer mirror within the Steenbeck. The Steenbeck can also synchronize and record separate picture and soundtrack reels, as well as capture “full mag” 16mm audio reels. The resulting files are meant to provide access to researchers without committing to the steep cost of framescan digitization or film-to-film preservation. Consult with the AV Archivist.



## Online Bibliography

### Film

FilmCare.org [https://www.filmcare.org/main\\_intro](https://www.filmcare.org/main_intro)

Kodak glossary of motion picture terms:

[http://motion.kodak.com/US/en/motion/education/film\\_video\\_glossary/index.htm](http://motion.kodak.com/US/en/motion/education/film_video_glossary/index.htm)

Kodak nitrate guidelines:

<http://www.kodak.com/global/en/corp/environment/kes/pubs/pdfs/H182.pdf>

Film Forever: <http://www.filmforever.org/>

Washington State Film Preservation Manual:

<http://www.lib.washington.edu/specialcollections/collections/film-preservation-manual/>

AMIA Publications:

<http://www.amianet.org/resources-and-publications/documents-publications?destination=resources-and-publications/documents-publications>

Film Connection glossary:

<http://www.filmconnection.com/reference-library/film-industry-glossary/>

NFPF Film Preservation Guide:

<http://www.filmpreservation.org/preservation-basics/the-film-preservation-guide-download>

### Audio

ARSC Guide to Audio Preservation: <http://www.clir.org/pubs/reports/pub164/pub164.pdf>

Capturing Analog Sound for Digital Preservation: <http://www.clir.org/pubs/reports/pub137>

IASA Safeguarding the Audio Heritage: Ethics, Principles and Preservation Strategy:

<http://www.iasa-web.org/tc03/ethics-principles-preservation-strategy>

IASA Guidelines on the Production and Preservation of Digital Audio Objects:

<http://www.iasa-web.org/tc04/audio-preservation>

Richard Hess blog on magnetic audio: <http://richardhess.com/notes/>

The Library of Congress National Recording Preservation Plan:

<http://www.clir.org/pubs/reports/pub156>

The State of Recorded Sound Preservation in the United States:

<http://www.clir.org/pubs/abstract/reports/pub148>

Sound Directions Project: <http://www.dlib.indiana.edu/projects/sounddirections/>

### Video

ALCTS Minimum Digitization Capture Recommendations:

<http://www.ala.org/alcts/resources/preserv/minimum-digitization-capture-recommendations>

AV Preserve Guide to Developing a Request for Proposal for the Digitization of Video:

[http://www.avpreserve.com/wp-content/uploads/2013/10/AVPS\\_Digitization\\_RFP\\_Guide.pdf](http://www.avpreserve.com/wp-content/uploads/2013/10/AVPS_Digitization_RFP_Guide.pdf)



Videotape Identification and Assessment Guide:

<http://www.arts.texas.gov/wp-content/uploads/2012/04/video.pdf>

Preservation of Analog Video through Digitization:

<http://ohda.matrix.msu.edu/2012/06/preservation-of-analog-video-through-digitization/>

Determining Suitable Digital Video Formats for Medium-term Storage:

[http://www.digitizationguidelines.gov/audio-visual/documents/IntrmMastVidFormatRecs\\_20111001.pdf](http://www.digitizationguidelines.gov/audio-visual/documents/IntrmMastVidFormatRecs_20111001.pdf)

## **General**

Image Permanence Institute Storage Quick Reference:

[https://www.imagepermanenceinstitute.org/webfm\\_send/301](https://www.imagepermanenceinstitute.org/webfm_send/301)

Federal Agencies Digitization Guidelines Initiative: <http://www.digitizationguidelines.gov/>