

# DIGITIZATION



PRESERVING AUDIO FORMATS



COMPLIMENTS OF

**Archival Sound Labs**

THE CUTTING CORPORATION

## STEP 1 - ASSESSMENT

The first step to preserving your audio collection is to take a full assessment. An assessment is more than just counting up the number of items of various formats. It also includes estimating hours of audio program and identifying deterioration issues. The Cutting Corporation can provide a convenient assessment form for you to fill out and send it back to us. Upon review of the form, we will provide you with a proposed cost estimate of your collection.

The following tools will help you with self-assessing your audio materials.

### Open Reel Tape

- What is the speed of the recording in inches per second (1 7/8 ips, 3 3/4 ips, 7 1/2 ips, 15 ips, etc.)?
- What is the track configuration (1/4, 1/2 track stereo or mono, full track, etc)?
- What is the size of the tape (3", 5", 7", 10" etc.)?
- What is the composition of the tape (acetate, polyester)?
- What is the thickness of the tape (1 mil, 1 1/2 mil, etc.)?
- What date was the recording originally made?
- Is there any relevant information, such as a program time, on the box that the tape was housed in?
- What is the condition of the tape?

Use this chart as a guide for determining the amount of audio program on your open reels:

Tape Thickness		½ mil		1 mil		1½ mil	
Reel Size		Ft.	Min.	Ft.	Min.	Ft.	Min.
3 ¾ ips	5	1200	60	900	45	600	30
	7	2400	120	1800	90	1200	60
	10 ½	4800	240	3600	180	2500	120
7 ½ ips	5	1200	30	900	22½	600	15
	7	2400	60	1800	45	1200	30
	10 ½	4800	120	3600	90	2500	60
15 ips	5	1200	15	900	12	600	8
	7	2400	30	1800	21	1200	15
	10 ½	4800	60	3600	45	2500	30

## Discs

- What is the size of the disc (circumference = 5", 7", 8", 9", 10", 12", 16")?
- What is the speed at which the disc plays (45 rpm, 33 1/3 rpm, 78 rpm)?
- What is the composition of the groove surface of the disc (acetate, shellac, vinyl)?
- What is the composition of the disc core (glass, cardboard, aluminum, etc.)?
- What date was the recording originally made?
- Is there a program time noted on the disc or outer sleeve?
- What is the condition of the disc?

If you're not comfortable assessing your own collection, you can have a professional do it for you. The Cutting Corporation is pleased to offer a complimentary assessment for archivists in our area.

## STEP 2 - BUDGET

The second step is creating a budget from the assessment. At this stage, most archivists have to apply for grants. The Cutting Corporation is always happy to assist with your grant writing and will gladly provide any information you are required to have in your application. You may need to go through Step 3 and Step 4 to complete your budget assessment.

## STEP 3 - PRESERVATION MASTER

You must decide what kinds of preservation masters and service/reference copies you would prefer. This decision is largely dependent on your available budget. Will you just preserve digitally or will you also require an analog preservation master (more costly)?

### Master Preservation Files

Digital: Usually encoded at high sampling rates, 96 kHz, 24 bit. The files are uncompressed and intended to capture as much information from the source material as possible. Because file sizes tend to be large in size, storage space should be factored into your budget (see Step 4). For example, an hour of audio in mono, at 96

kHz 24 bit, is equivalent to 984 MB (approx. 1 GB). An hour of audio in stereo, at 96 kHz 24 bit, is equivalent to 1.968 GB.

Analog: Analog tape at 7.5 inches per second (ips) full track, 1/4 inch recording on 1.5mil polyester audiotape stock (Quantegy 478). Either 7" or 10" reels, housed in a plastic tape care box.

### **Service or Reference Files**

Often referred to as "dub" or "listener" copies, these are normally digital files at 44.1 kHz 16 bit. The files are half the size of the digitized master file and will often fit on a gold reflective layer CD-R. Alternative options for reference or service files are encoding the files to MP3 or a streaming audio format.

Since these are compressed formats, they do not have the high quality sound of uncompressed master digital files. These lower quality files are usually just for internal use, such as researcher workstations.

Note: Preservation masters should always be housed separately from the service/reference files.

## **STEP 4 - DIGITAL STORAGE MEDIUM**

You must decide what kind of digital storage medium you are going to use to house your audio collections. Storage mediums can be CD-Rs, DVD-Rs, Exabyte tapes, removable hard drives or a remote server. The digital storage you select will depend on your budget. A server, for example, is a great choice, but costly. And since many institutions are still deciding when to fully digitize, we recommend the other options in the meantime. The cost comparison below can aid your decision:

<b>Storage Medium</b>	<b>Cost</b>
Remote Server	\$\$\$\$\$
Removable Hard Drives	\$\$\$\$
Tape Backup (Exabyte or Other)	\$\$\$
DVD-Rs	\$\$
CD-Rs	\$

Congratulations! You are now on your way to a successful audio preservation and digitization project.

## A LEADER IN SOUND PRESERVATION

The Cutting Corporation's primary goal is to make recorded audio archival collections available to listeners for years to come. One way to do that is to provide informative tools for archivists, so that they can effectively manage their collections. This guide is designed to familiarize you with the process of digitization to preserve the life of these valuable recordings.

Decisions, Decisions, Decisions. Researchers request copies of audio recordings on formats for which you no longer have equipment to play. There are audio formats in your collection suffering from deterioration issues, some are even starting to smell very bad. Moreover, you have budgetary constraints and there is a lack of funding for the year. What do you do? You research your options. In order to make informed decisions to preserve or digitize your sound collection, you need to know what options you have.

In this guide:

- Assessing Your Audio Collection
- Determining Your Budget
- Selecting a Preservation Master
- Selecting a Digital Storage Medium

Archival Sound Labs is a leader in sound preservation and digitization. If you have any questions concerning the information in this guide or need assistance with the preservation of your audio collection, please contact us:

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