

The Rosetta Project Digital Language Archive

Digital Conversion of Sound Recordings

JD Ross Leahy
The Rosetta Project
jd@longnow.org

1. Tape Care and Handling

Our main priority when dealing with analog tape collections is the conservation and protection of the tapes themselves. We exercise great care to make sure they are maintained in the quality and condition in which we received them:

- All of the tapes we receive are stored in a vertical position. We keep them out of direct sunlight and protect them from dramatic changes in temperature and excessive humidity as well as away from any powerful magnetic fields.
- For a previous digitization project, we were asked by our collaborator to splice leader tape to reels that lacked it. This worked well to protect the ends of the tape, and we would prefer to continue this practice if it is acceptable to future collaborators.
- We also take care to store digitized reels with an even, tight tape pack. This means that we wind tapes for storage tails out and make sure that there are no popped strands sticking out of the pack before putting them back on the shelf.
- Any tapes exhibiting “sticky shed” syndrome will be removed from the digitization schedule. Collaborators can then discuss with us the possibility of baking the tapes (which is a temporary remedy approved by Ampex Media Corp) at a baking facility.

2. Digitization Process and Specifications

Digitization begins and ends with cleaning of the tape heads, which we do with denatured alcohol and Q-tips. The tape is then cued and a sample is played back to allow us to set the recording levels and confirm the tape speed. The tape is then rewound and played in its entirety while being digitized. During the digitization we listen to the playback. This allows us to make a note of any additional metadata on the tapes themselves, and also stop the recording at any sign of sticky shed syndrome, incorrect placement of the recording levels, or other unforeseen difficulty.

After the tape has been digitized, the recording is saved as one complete file and then the wave form is inspected for clipping or other problems. At this time we listen to selections of the digital file. After listening to selections we may decide to trim the “edges” of the audio file to reduce blank space if it is clear that no recording was intended to be made there. At no time do we attempt to “restore” or improve the sound quality through filters or other digital effects. We prefer to leave this type of modification to end users on non-master copies.

All digitization is done at a 96 kHz sample rate and 24 bit depth via our external A/D converter and captured with either Sony Sound Forge or Peak audio software.

3. Digital Storage and Archiving

We save and store our digital audio as WAV files (an uncompressed format). We store copies of our digitized audio on a dedicated hard drive used solely for audio recordings. We also burn gold MAM archival DVD-Rs to serve as backup copies. Each audio file is burned onto two separate DVDs, in addition to having a copy on the dedicated server. In the near future we will be utilizing additional managed server space for archival backup.

We must also note that at the high sample rate we use, we cannot save files over 2 hours (in mono) in length since they reach the 2 gigabyte per file limit imposed by our audio software. That means that for tapes whose playback length exceeds two hours we have to separate the recordings into two sessions.

For all recordings less than 2 hours in length we create just one complete archival file for each recording/reel. This master file will remain in our archive as a complete record, but we may produce lower resolution/compressed presentation versions of the same recording. For presentation purposes we may also divide the compressed file into smaller sections.

4. Metadata Collection

We store metadata in accordance with the best practice standards laid out by Dublin Core Metadata Initiative (DCMI) and the Open Language Archives Community (OLAC). The information we store comes from any documentation that arrives with the materials as well as any information we can glean from listening to the tapes themselves.

5. Equipment

We digitize the majority of our materials on a Revox B77 open reel tape deck with two speeds: 15 and 7 1/2 ips. The analog signal is converted in an external digitizer put out by Edirol called the Edirol UA-25 which communicates to our capture software via USB 2.0. We use a splicing block and 7/32" clear splicing tape.