THE SUSTAINABLE HERITAGE NETWORK

# 2016 IFF VHS Digitization Workshop Notes

## Digital Video Considerations

- File size and quality
    - Balance the file size and quality of your files
    - Think about how much you can actually afford to store.
    - More than ANY other format, you must strike a balance between the quality you want, and the amount of data you can store.
    - Consider your source: Don't try to save as a higher quality than is present in the original material.
    - Adobe Premier gives you the option to match the source.
    - Resolution:
        - Size of the video in pixels, measured on the height and width.
        - Think about your options when you are watching a youtube video.
        - For VHS - 352x240, 352x480, or 720x480 - all depends on your equipment, software, playback device, and where you are displaying it.
    - Aspect ratio:
        - Again, make sure that the format you are saving a digitized version in matches the analog - don't want it to be stretched or warped (don't want to save something in widescreen, when it was not created that way).
        - VHS normally 4:3
    - Frame rate:
        - How you see the playback or how the playback is being digitized/captured. As technology developed, frame rates increased.
        - You can think about 8mm or 16mm, and how that looks playing on a film projector. This is why if you try to shoot film being projected on a wall with a digital recorder, you will get all the black frames stuttering in between.
        - VHS = 29.97
    - Bit rate:
        - Bits per second – how much data is captured/processed by frame.
        - Higher bit rate is a bigger file, and will take longer to process.
        - Decide about the quality and ultimate size of the file.
        - Remember to balance quality and size.
        - You want to save the best that you can, but storage costs money.

- File formats:
    - Format has a big effect on your end result.
    - Codec: determines whether you'll have an uncompressed or compressed file.
    - Container (wrapper): structure and how the file is stored.
    - Combination of wrapper and codec will determine which media player will be able to read the file.
    - For example, mov is a wrapper that can be read by Quicktime Media Player. This wrapper can hold uncompressed video, as well as several other video formats. On the other hand, H.264 is a widely used compressed video codec that can be contained in an mov file, as well as an mp4. Some other codecs are FFV1, JPEG2000, etc.
    - Think about:
        - Is the format going to be playable by media players that you use now, and many years from now.
        - Will the company supporting the format go away? Open source is typically better, won't get tied up with a proprietary format. Doesn't mean you CAN'T use something proprietary - just be aware of what you are using.
        - Again - the point of what quality you want to capture compared to how much can you store.
        - Common formats: AVI, MPEG2, MP4, QuickTime, etc.
    - At WSU:
        - Master copy: AVI or MOV.
        - Access copy: MP4
        - We don't have to store those in our own server – we don't have to worry much about space.
- File Formats – Master and Access Copies
    - Preservation master copy: for long-term storage. Best quality you can afford. Know your storage and how much you can afford and then adapt your quality according to that.
    - Access copies: short or long-term storage. Smaller files.
    - Master and access copy might be created at the same time - never edit in your master, just your access.
    - Web ready derivative of the access copy. If you do lot of editing work, you can work on this file.
- Standards
    - Always changing/developing
        - FADGI
        - Digital File Formats for Videotape Reformatting
        - Library of Congress Sustainable Formats
        - Library of Congress, NARA, AMIA, Universities
        - SHN: Audio video, and image digitization resource
- How to start digitizing?
    - In house: gather all the different materials you need, equipment, staff and processing power and do it yourself. VHS is still something you can do in home, VCRs are not hard to get.
    - Collaboration: institutions in your area, share equipment.

    - Outsourcing: find a vendor you can trust. Evaluate fee and see if it would be more or less expensive than digitizing in house. Vendors will also offer other services such as metadata creation and/or conservation work.
    - Factors to consider:
        - Size of your collection: Need to assess what you have, no way of knowing unless you systematically look.
        - How many items in your collection, how many might still be coming in.
        - Format: all the same? VHS? Straightforward or not? Are they strange formats that you have never heard of, or are they all VHSs (easier to find equipment)? 10 different formats, or 2?
        - Condition of your materials: are they even playable? Do they need conservation work before proceeding? Are they damaged or safe? Trying to digitize tapes that are damaged can further damage them...or break your equipment.
        - Biggest consideration is the time and resources that the project will take. We will talk more about project planning later, but you need to know WHO will be working on the project, how much time it will take, how much it will cost (either in house or outsourcing). More than just the digitizing (inspecting, entering metadata, quality checks).
        - Budget: staff, supplies, software, equipment, conservation, outsourcing.
        - For film, you can actually see what is on the carrier - VHS and other magnetic media not so much - sometimes you have good metadata and history to tell you whether you want to invest in digitization. As much assessment as possible is very important.
- Group activity
    - Formats in your institutions?
        - Take attention to university surpluses!!
    - How much do you have?
        - Aaron: 300 VHS
        - We have some but for sure we will have more once the community realizes that we have the skills and equipment to digitize VHS.
    - Equipment: don't assume that VCR is fine – don't play your archival file in it before trying it with another not valuable VHS.
    - SVHS sometimes have better connectors (also play VHS)

**VHS Preservation and Digitization**

- Tape as archival medium
    - Not good for long-term preservation
- Preservation concerns
    - Sticky residues, powder – you can also get mold on video formats so pay close attention to powder.
    - Binder degradation (flaking)
    - "Is probably fine unless something is terribly wrong"
    - Physical damage

    - Lack of equipment: probably the bigger problem (Ebay, craigslist, check in universities, thrift stores, etc)
- Handling and storage
    - Cheap tape – not as good quality and you can't do much about it.
    - Care and handling
    - Storage conditions – temperature and relative humidity
    - Frequency of access

**VHS Digitization Equipment**

- Playback devices
    - Probably the hardest equipment to have.
- Intermediary hardware and software
    - Digitization hardware
        - Video capture card
        - Elgatos (cheap $8)
        - BlackMagic
    - Digital capture device
        - Your computer (not a laptop)
    - Capture software
- Warnings
    - IT department might be backing your files without knowing – pay attention to this.
    - Try to build good relationships with your IT department (if any).
    - Using a very fancy card doesn't necessarily improves the quality of the VHS.
    - Elgato: flexible, portable.

**After Digitization: Editing**

- Adobe – popular because you'll find all in the same place.
- Adobe Premier (Pro or Elements) for editing – Con: are licensed.
- Final cut pro for Mac
- Open source tools
    - Shotcut
    - Lightworks
    - Avidemix
- Editing and Processing:
    - Add title cards, credits, branding (you should do this in your access copies)
    - Trimming
    - Insert still images into videos
    - Adjusting audio or video levels
        - Color correction
    - Combining, splitting, cropping…
    - What do you want to do with your collections?
        - Consult with elders on community protocols before editing and eventually providing access.

**Digitization Project Planning**

- The biggest, most general piece of advice is to document every step in your process!
- Project planning questions:
    - **o** Should we digitize?
        - How big is the project, and when does it need to get done?
        - What are you hoping to accomplish with this project? How does it tie in to your institutional priorities? Might have to justify...
        - Does your organization hold copyright over the materials? Do you have the authority to digitize and share? Ex. oral histories on video - did the interviewee sign a release form? Know what the end goal is for access… Are you allowed to share them? Release forms? Cultural protocols? Community review? Vetting?
        - What do you need to make any of those happen?
        - How will you digitize?
            - In house
            - Working with other institutions
            - Outsourcing to a vendor
            - Steps to accomplish that
    - o Can we digitize?
            - Equipment and software
                - o What equipment you have and what do you need to purchase?
                - o Software: what you want to use? Demos.
                - o Editing and digitization software.
            - Physical space
                - o Make sure you have room at your institution.
            - Staff
                - o Who's doing the work? Full time employees? Interns or students? People working in different departments?
                - o Make sure having instructions for the staff
            - Storage for your digital files
                - o Make sure there is space set aside for your files
            - Metadata
                - o Can take a lot of time.
                - o What's already written on the tapes?
                - o Who you want creating the metadata?
                - o Who will do this? Elder? Intern?
            - Providing access
                - o Burning DVDs for community members?
                - o Sharing through content sharing platform?
        - Project Management Tips
            - Think about your own time and the time you'll need for this project.
            - You need a clear timeline in place
            - Digitization logs or tracking sheet. This can be your first step for metadata.

- Staff training: clear instructions and expectations for your staff. It's not enough to do it once – you might want to check on them a often.

**Digital preservation**

- Log term storage and preservation of the digitized files
- Should be a conversation that happens throughout your department/institution
- Increasing awareness
- Digital preservation plan in place
- Storage:
    - 3-2-1 rule: 3 copies of a file, on 2 different formats (backed up regularly), and one of those copies in a different disaster zone (according to your institution's geography).
    - Agreements with institutions might be a possibility.
  - File integrity:
    - Check the files that you create – so what you created yesterday will be the same file 5 years into the future.
  - File access:
    - Internal. So staff knows where the files are stored, how to find and interpret them.
    - Metadata is important for this step (technical and preservation metadata).

**Quality control**

- Good to have in your workflow (tied to digital preservation)
- 2 or more step process: having a list of things you are looking for and making sure all the quality things you are trying to make are all in line.
- For metadata: have someone look there are no spelling errors.
- Put into your overall policies – is there since the beginning of the project.
- Doesn't have to be in every single file. Choose a percentage to check (10%). If there is a problem check the files around that file.
- For video:
  - Storage and organization: correct file names?
  - Integrity: running checksums on the files, that are complete and unchanged (automated or manually)
  - Technical specifications: making sure all of those line up
  - Metadata: check is there and associated with files in some way. Checking for grammatical errors and that fields you want are covered.
  - Visual and audio inspection:
    - Listen to some minutes at the beginning, medium and end.
    - Dropped frames
    - Digitization mistakes
  - QC tools

More resources:

- Sustainable Heritage Network
- Preservation Self Assessment Program
- Museum of Obsolete Media
- Library of Congress
- Connecting to Collections
- Association of Moving Image Archivists
- AVPreserve