Memory Lab VHS Digitization

CALVERT LIBRARY TWIN BEACHES – MAKERSPACE

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Introduction

VHS tapes have a shelf life of 10 to 25 years and can degrade significantly during that period. They are subject to mold and physical damage, making them risky options for long-term storage. In addition, VCRs, or VHS players, are no longer manufactured and are cumbersome to repair. Because many home movies and other forms of media are exclusive to the once-popular format, VCR prices continue to rise on the secondhand market.

Through VHS digitization, you can convert video content into a digital format, preserving media and memories and making them accessible on modern devices. At the Calvert Library Twin Beaches Memory Lab, you can use our specialized equipment to transfer your tapes to a computer, ensuring they last for years to come.

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What You Need

- **VHS tape**

  - ➢ The Memory Lab can digitize standard NTSC-encoded VHS tapes. When played on a VCR manufactured for the U.S. market, PAL or SECAM tapes may produce a distorted image or fail to play. The map below shows the encoding standards used throughout the world:
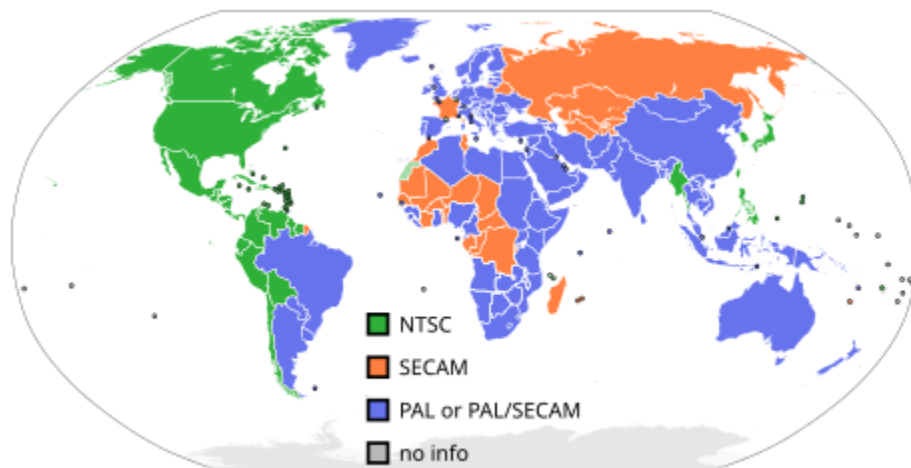
  - ➢ Currently, the Memory Lab cannot digitize other videocassette formats such as VHS-C, S-VHS, Betamax, U-matic, or 8mm.
- **Storage medium**
  - ➢ Save your files to a portable USB drive or personal cloud storage account (OneDrive, Google Drive, iCloud, etc.)
  - ➢ USB flash drives are available for purchase from Calvert Library staff.
  - ➢ If you upload your files to a personal account, please sign out of the account at the end of your session.

Equipment and Software

The following equipment is available in the Memory Lab to facilitate the VHS digitization process:

- **Laptop**
    - ➢ The TWIN-MEMLAB laptop serves as the workstation for the Memory Lab. It features a USB hub to allow you to connect multiple portable drives.
    - ➢ The desktop screen contains shortcuts to all software tools used throughout the digitization process.

- **VCR**
  - ➢ You will load your VHS tape into the VCR and use the buttons under "VCR OPERATION" to control playback.

1. **POWER:** Press to turn the VCR on or off. The light above the button illuminates red when the unit is on.
2. **OUTPUT:** Press to select VHS playback. The arrow pointing towards "VCR OPERATION" illuminates green when VHS playback is selected.
3. **STOP/EJECT**: Press once to stop VHS playback. Press again to eject the tape.
4. **REW:** Press to rewind. To rewind faster, stop the tape first.
5. **PLAY:** Press to begin VHS playback.
6. **F.FWD:** Press to fast-forward. To progress faster, stop the tape first.

- **Monitor**

  - ➢ Use the monitor to see your videotape's playback on a larger screen.
  - ➢ The monitor's control panel is located towards the bottom of the right edge of the bezel.
  - ➢ Press the power button at the bottom of the control panel to turn the monitor on or off.
  - ➢ Please do not change the monitor's input or adjust its volume. Instead, use the provided headphones to listen to your videotape's audio.

- **Blackmagic Media Express**
  - ➢ This software will convert your analog tape into a digital AVI format.
  - ➢ Launch Blackmagic Media Express by double-clicking the shortcut on the desktop. It looks like a stopwatch.

- **HandBrake**
  - ➢ You will use this software to convert your AVI file into an MP4 file, making it smaller and compatible with a broader range of devices and platforms.
  - Launch HandBrake by double-clicking the shortcut on the desktop. It looks like a tropical beverage and a pineapple.

- **File Explorer**
    - ➢ File Explorer allows you to explore the filesystem on a Windows PC. Use this to locate your files after they are created.
    - ➢ Launch File Explorer by double-clicking any yellow folder shortcut on the desktop, such as the MemLab Software one in the upper-left.

Digitization Process

The following is a brief overview of the VHS digitization process at Calvert Library Twin Beaches. It consists of three steps:

1. **Digitizing your videotape:** Insert your VHS tape into the VCR and use it to control playback. Meanwhile, Blackmagic Media Express will be used to monitor playback and capture the content digitally on the computer. You may digitize the entire videotape or select portions.
2. **Compressing your video files:** Next, you will use HandBrake convert and compress the files produced in the previous step into a more manageable format. You will also save the compressed files to your storage medium of choice.
3. **Finishing up:** During this step, you may watch your video clips, ensuring that they meet your expectations. You will also delete any files stored on the computer and log out of personal accounts/eject your portable drive.

Step 1: Digitizing Your Videotape

1. If saving to a portable drive, insert it into an available USB port on the laptop or the USB hub. Do not remove any devices plugged into the computer.
2. Press the POWER button to turn on the VCR. The power light illuminates red when the VCR is on.

3. Gently push the tape into the VCR slot, arrow-side first.
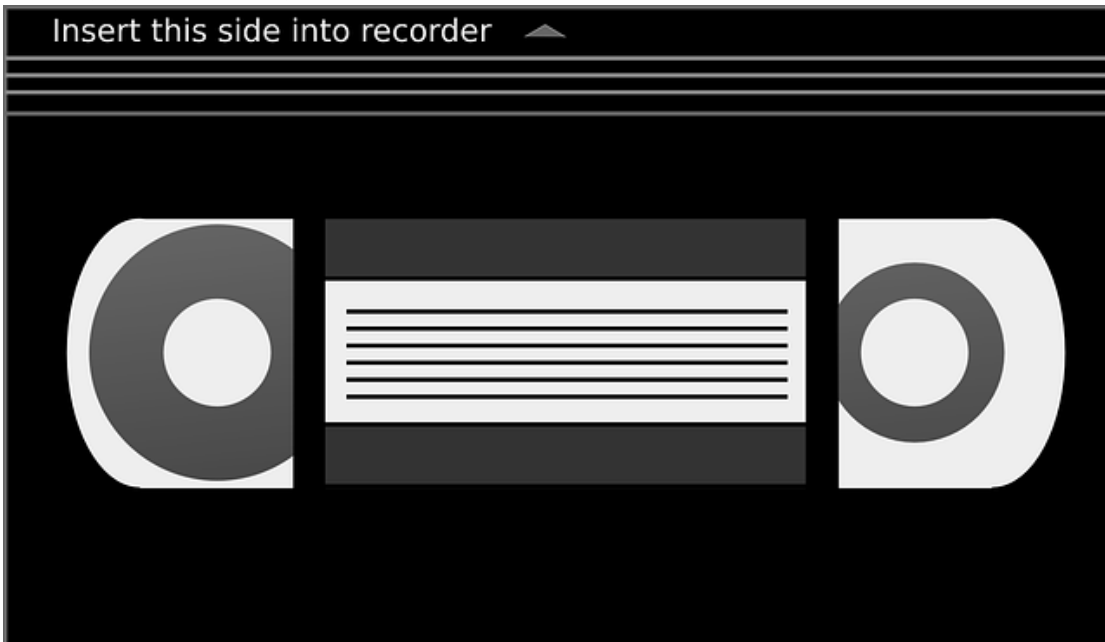
    The VCR will "grab" the tape and load it in. Rewind the tape to the beginning if needed.
4. Ensure that the output on the VCR is set to VCR OPERATION. Press the OUTPUT button to toggle between modes if needed.

5. Launch Blackmagic Media Express by double-clicking its shortcut on the desktop.

6. In Media Express, switch to the Log and Capture tab by clicking it.
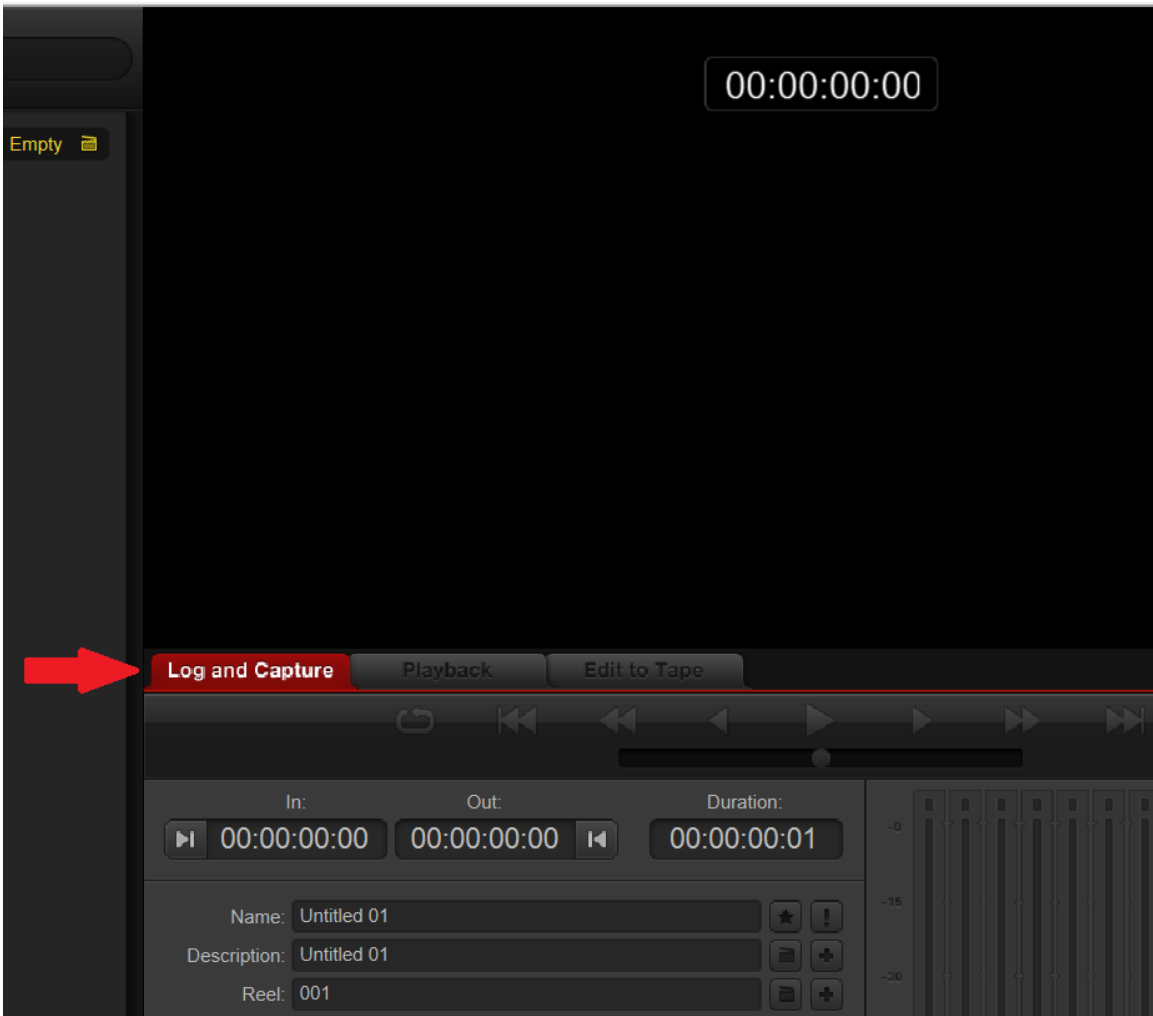
7. Type your desired filename in the Description field and click the plus sign to the right of it.
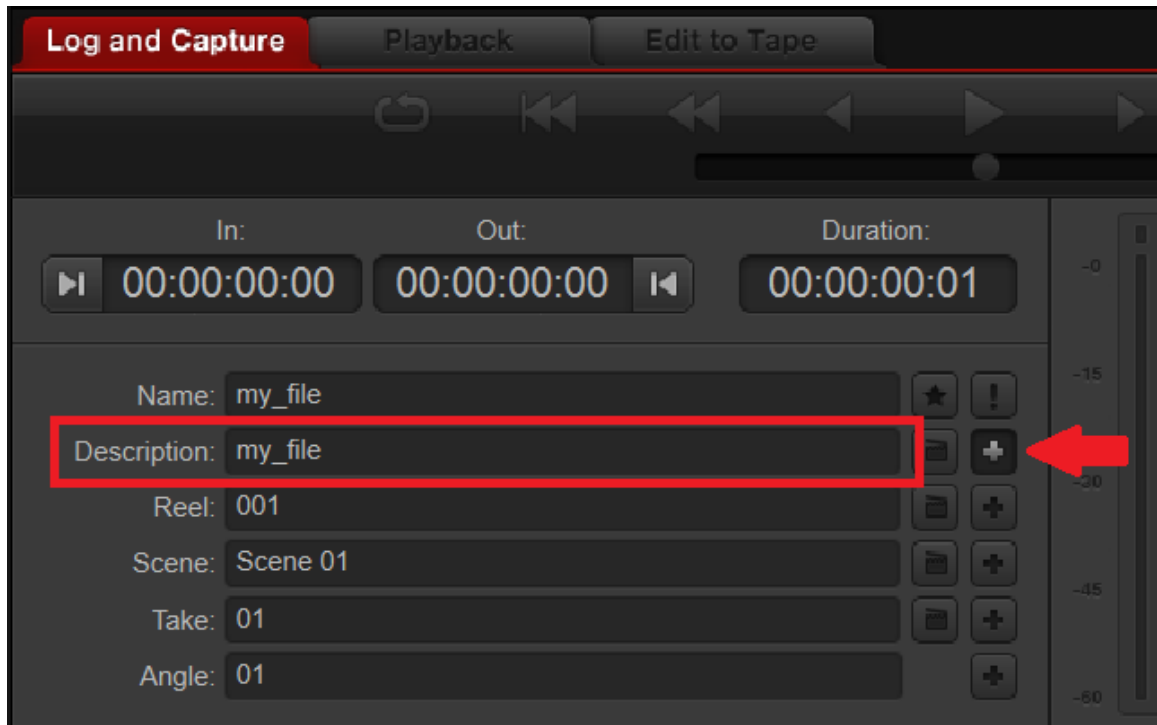
8. Press the PLAY button on the VCR. You will see the video play in the Media Express window. If you would like a larger preview, press the POWER button on the monitor. Use the headphones to listen to the audio.
   Note: There will be a noticeable delay between the video and audio while the software captures the media. The delay will not be present in the recorded clip.

9. When you are ready to start digitizing, click **Capture** at the bottom of the window. You may have to rewind a bit first if the video has played past the desired start point.
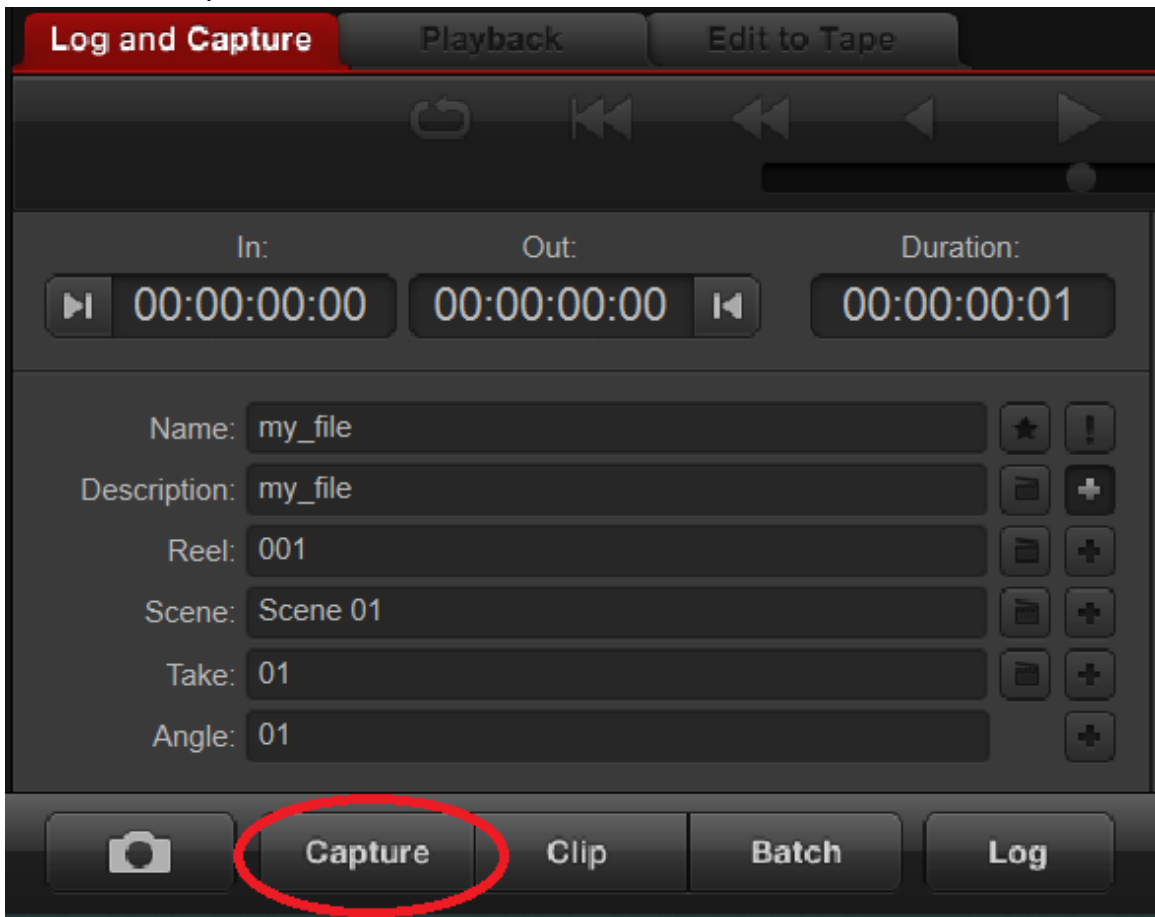
10. When you want to stop digitizing, click **Capture** again. A file containing your video content appears in the tray to the left. Double-click the file to review it.

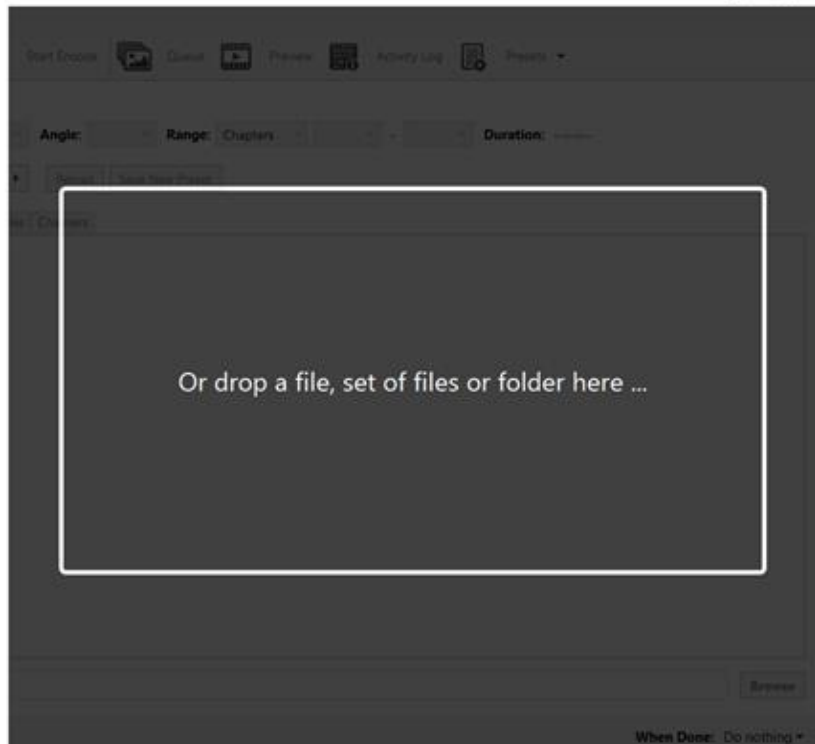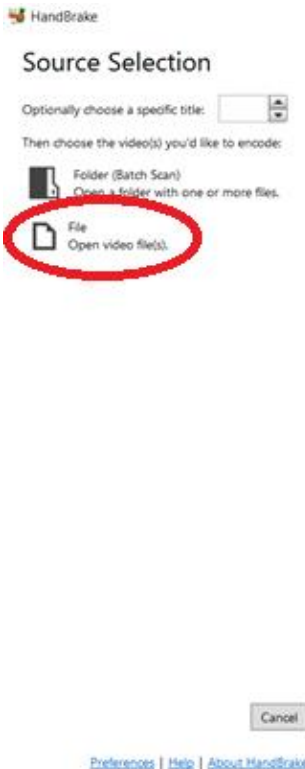11. Repeat steps 5-9 until you've captured the desired clips from your VHS tape.
12. Press the stop/eject button on the VCR when finished. Leave Media Express open for now.

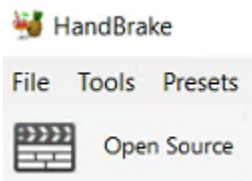# Step 2: Compressing Your Video File

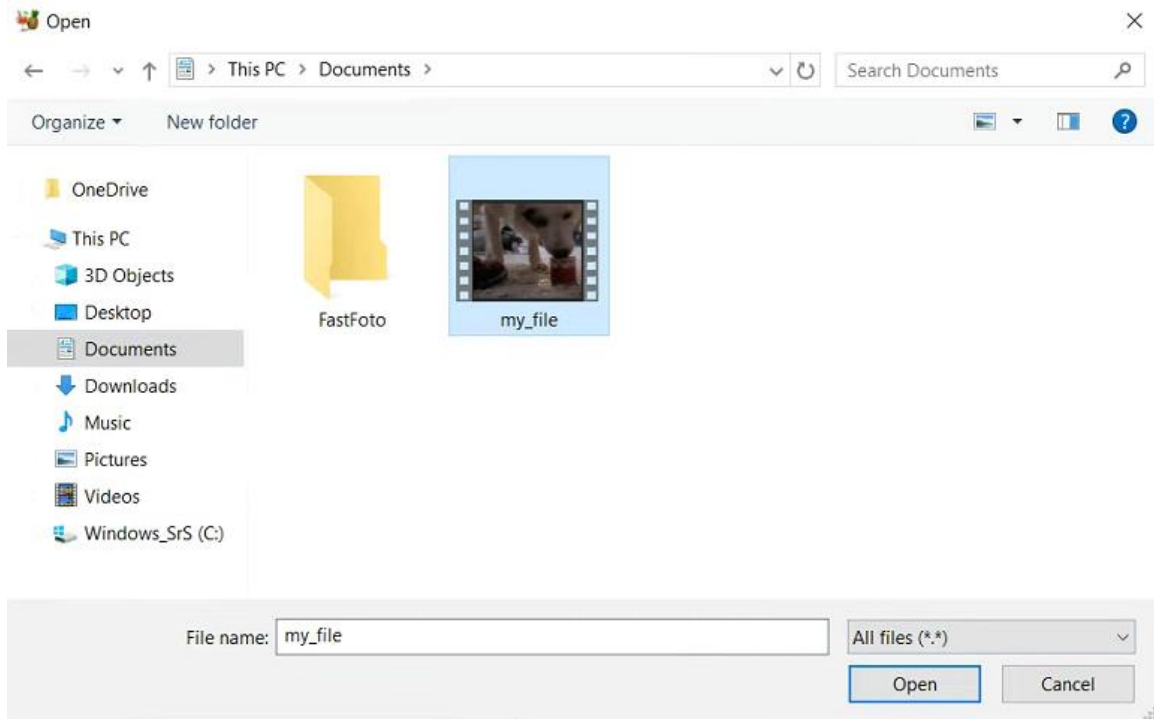1. Launch HandBrake by double-clicking the shortcut on the desktop.

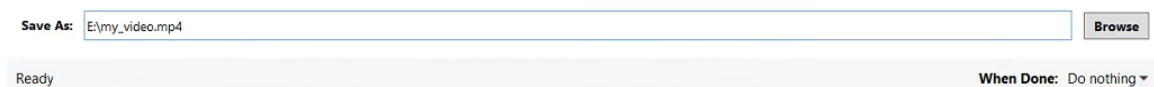2. The Source Selection screen appears when HandBrake launches. Click **File**.

If you leave this screen by mistake, click **Open Source** in the top left to launch the file browser.

3. Navigate to the Documents folder, select your AVI file, and click **Open**.


4. Enter your desired filename in the Save As field at the bottom of the window. Do not remove or modify the .mp4 file extension.

5. Click **Browse** at the bottom of the window to choose the file's save location.
   ➢ The default location is the E drive, which is the first removable drive inserted into the computer.
   ➢ If you are uploading the file to cloud storage, save it to the Downloads folder.

6. Click **Start Encode**. HandBrake will begin compressing your file. Depending on the length of your clip, it may take a few minutes.
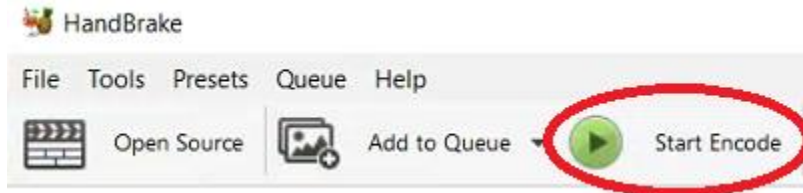
When it is done, the text "Queue Finished" appears at the bottom left of the window.
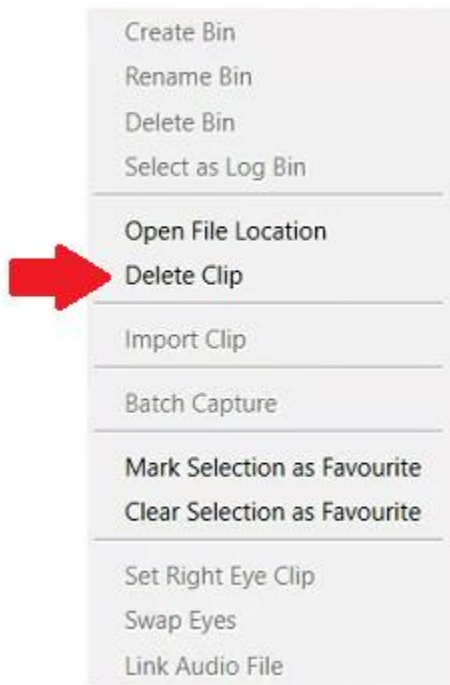

7. Repeat steps 2-6 for each AVI file.

Step 3: Finishing Up

1. Exit HandBrake.
2. Double-click the MemLab Software shortcut on the desktop to launch File Explorer. Navigate to the location where you saved your MP4 file in the previous step.
3. Double-click the MP4 file to watch it. When finished, exit the media player.

4. In Media Express, right-click each file in the tray and choose **Delete Clip**.

Create Bin
Rename Bin
Delete Bin
Select as Log Bin

Open File Location
Delete Clip

Import Clip

Batch Capture

Mark Selection as Favourite
Clear Selection as Favourite

Set Right Eye Clip
Swap Eyes
Link Audio File

> ➢ If you mistakenly closed Media Express earlier, you can find the files in the Documents folder in File Explorer. Select your files and press **Shift + Delete** on the keyboard to permanently delete them.

5. Ensure that the tape is stopped in the VCR. Rewind if you're feeling kind. Then press the stop/eject button. The tape will pop out of its slot. Remove the tape from the VCR. Notify a staff member if you cannot remove the tape with a gentle pull.
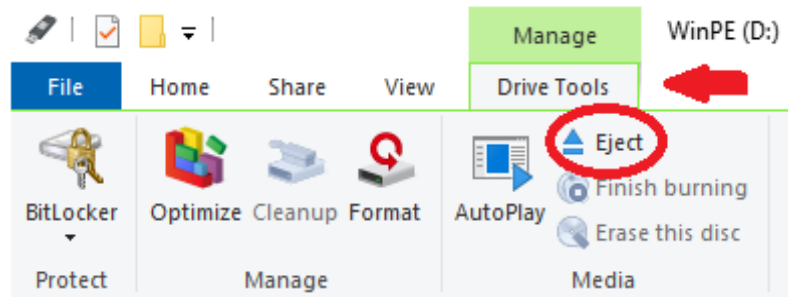6. Press the POWER button on the VCR to turn it off.

7. Remove/upload your media:
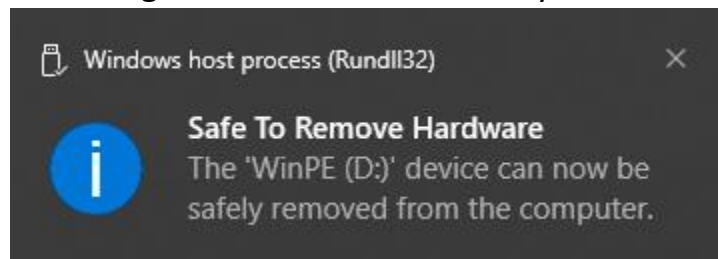   ➢ **If using a portable drive:**
      1. Open File Explorer and click on the drive in the pane to the left. The name and letter of the drive may differ.
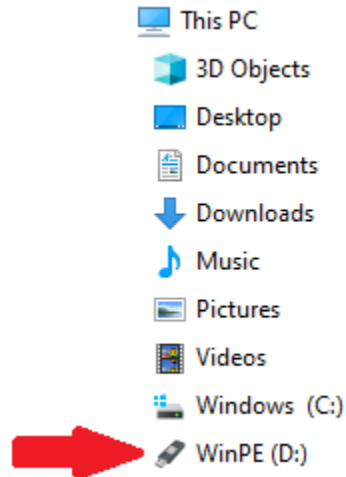
      2. In the File Explorer toolbar, click **Drive Tools**. Then click **Eject**.

      3. A message will appear at the bottom-right of the screen, indicating that it is safe to remove your drive.

      Remove your drive from the USB port. If you get a warning that the drive is in use, ensure that none of the files on the drive are open in other programs and try again.

➢ **If using cloud storage:**

1. Launch Google Chrome. Navigate to your cloud storage provider's website. If using Google Search, do not click on any results labeled "Sponsored."

2. Sign in to the website. Upload your file from the Downloads folder.

3. Sign out of the website.

4. Navigate to the Downloads folder in File Explorer. Select your files and press **Shift + Delete** on the keyboard to permanently delete them.