

Media Archiving and Preservation Program

University of Colorado Boulder

Recommendations for Film Inspection

This guide outlines recommended fields for basic physical inspection and description of motion picture films in archival collections.

The information we gather in the inspection process is used to:

- Identify where, when, how, or why a specific film reel was created
- Determine if there are differences among reels labeled with the same titles or information
- Help researchers decide which film reels they may want to see or have digitized
- Determine the equipment or settings that may be needed to scan or project the reel
- Identify preservation, cleaning, repair, or other physical conservation needs and priorities

This guide is written to accompany the FilmInspection_Template spreadsheet, but could be adapted however needed. Fields in this spreadsheet do not map to a specific metadata standard. They were created for internal information gathering and preservation information, not for public descriptive resources.

Note that the condition assessment in this guide is intended to gather information about preservation needs. This guide does not offer steps toward cleaning, repair, or other means of conserving film.

See the recommended resources below for information on more detailed inspection, preservation:

- [Care, Handling, and Storage of Motion Picture Films](#) (Library of Congress)
- [Collection ID Guide](#), Preservation Self-Assessment Program (University of Illinois at Champaign-Urbana)
- [Visual Decay Guide](#), FilmCare.Org (Image Permanence Institute)



Warning: Degrading archival film may have **vinegar syndrome** and other types of deterioration that can release acetic acid and other gases. Film that smells heavily of vinegar or mothballs can cause eye, nose, and throat irritation.

Wear an N95 mask when handling films with strong vinegar or mothball smells or mold.

Also note: While film should be handled with white cloth or nitrile gloves – gloves can also be cumbersome, cause damage by catching on broken sprocket holes, and leave lint on splice tape. Film can also be handled *by the edges* with *clean*, bare hands, when necessary.

1. Inspection process:
 - a. [Choosing and preparing a reel](#)
 - b. [Physical and technical Information](#)
 - c. [Film content information](#)
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3. Troubleshooting:
 - a. [\(Re\)-orienting a film reel](#)
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Guide by Jamie Marie Wagner and Tori De Santiago, University of Colorado Boulder Libraries, 2023. All images created by the authors from CU Boulder Libraries' Rare and Distinctive Collections, unless otherwise identified.



A. Preparing a reel for inspection

1. Fill in identifying information about the reel on the inspection spreadsheet. Additional fields could also indicate Series and Location.

Column A – Collection Name

Column B –Item # - It is helpful for each film reel in a collection to have a unique identifying number, if possible.

Column C – Barcode - If used by your repository.

2. Examine the film can.

- If the reel is in a non-archival can, it can be re-housed in a new archival container:

Write the collection name and reel number on the side of the can.

Place a new barcode sticker on the container, and enter or scan the new barcode number in Column C.



- Transcribe all writing or information on the original film can:

Column D – Title from container:

This is the title from the item's original container. Record and preserve this information, even if it does not match the content of the film.

Column E – Additional container or label information:

In this column, record any additional information written on or in the film container.

- If any paper documents are found within the can, remove them. Place them in a small white envelope, and label with the collection name and reel number. Do not store paper documents within the film can.

B. Physical and Technical Information

1. Load the film onto the rewinds, according to the directions below.
2. **Examine the existing film leader** (if any).

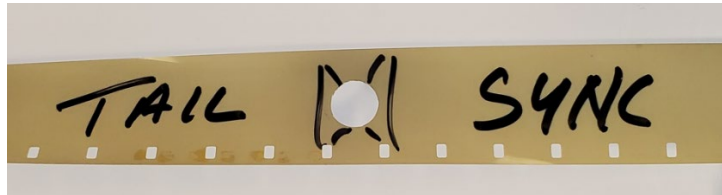
Leader is blank white, clear, or sometimes black film stock that is used to feed a projector or scanner before the film begins. It is often hand-labeled or printed with identifying information about the film.

Column H-I – Title and information from leader or tape, if any:

Transcribe any titles or additional information from the leader of the reel – or the original paper tape.

Column J – Sync Sound markers (yes/no):

Sync sound markers allow the ability to correctly sync separate audio and image tracks – or sometimes, separate, corresponding image tracks. Sync sound markers are found before the film image begins. There may be an “x” on the reel or a punched hole which indicates when the syncing should begin:



Enter “yes” or “no” in the column to indicate if there are sync sound markers on the film.

If the original leader is in very poor condition (dirty, bent, with excess tape residue), it can be removed.

- Be sure that any and all information on the original leader has been recorded on the inspection spreadsheet, Columns J-K.
- **DO NOT remove leader that has sync sound markers!**
- Do not remove countdowns or burned in production/projection information, as below:



3. Add new leader to the film.

Add about 12-15 feet of new leader (about 3x the distance between the two rewinds).

- If the film has previous leader that is still in good condition, only add enough new leader to label the film.
- If the film is double-perf, use double-perf leader. If single perf, use single-perf leader.

Label the leader:

- With a sharpie, label the leader with “Head” and the collection name/reel number.
- In the next step, you may discover that this is actually the tail of the film. In that case, relabel the leader with “tail” and the collection name/reel number.

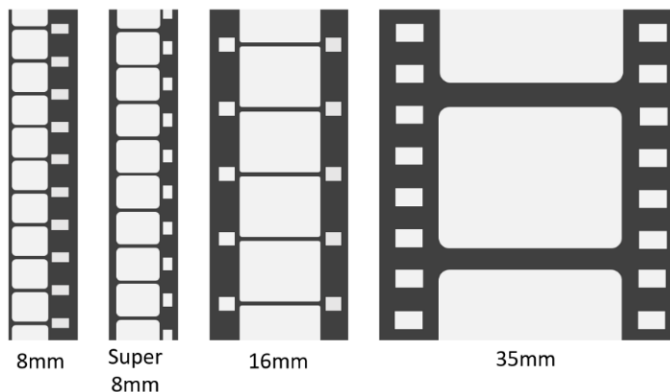
4. Wind through the first several feet of the film image.

The film should be heads out and correctly oriented. If you find that not to be the case, see [Reorienting the Reel](#), below.

Fill in technical information about the film stock:

Column K – Film gauge:

The film gauge is the width of the film expressed in millimeters. Some of the common film gauge sizes are 8mm, 16mm, and 35mm.



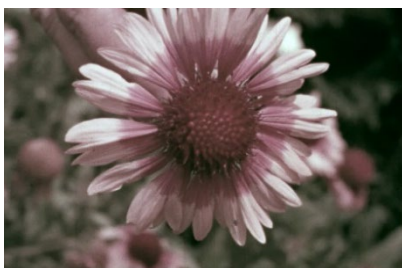
Column L – B/W or color:

Begin by identifying if the film reel is in color or in black & white.

- Films that were shot in black & white but tinted or toned to color (see below) should be marked as color.
- While winding through the film, you may discover that both black & white and color film stocks have been spliced together. In that case, choose “b/w and color.”

Column M – Color category (if known):

After identifying if the film reel is in color or in black in white, further identify the type of film color category, if applicable, using this link: <https://filmcare.org/identification>.



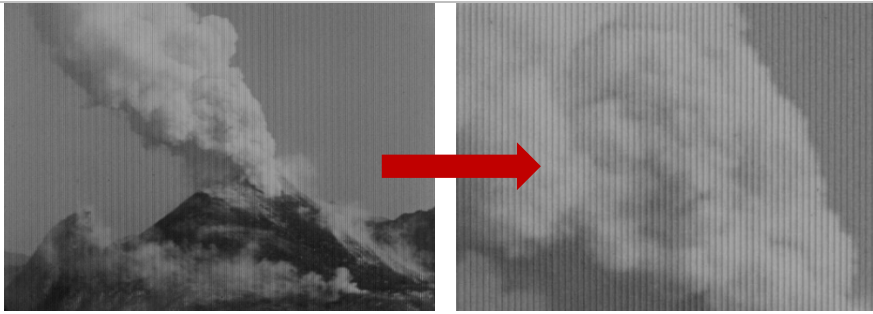
- Most of our color films – Eastmancolor, Ektachrome, etc. – do not belong to a specific color category. In that case, you can leave Column M blank.

Still from [New Garden Picture, Mr. Fine's](#) (unknown creator, ca. 1930s).
T.D.A. Cockerell Collection



- Tinted, toned, and stenciled films are most likely from before the 1930s. They were shot in black & white, with color added after. So far, no stenciled films have been found in our collections.

Still from [Central America](#) (Eastman Classroom Films, 1938)



Stills from [Pompeii, Vesuvius, Amalfi, Caserta](#) (unidentified creator, ca. 1930s), Leroy H. Miller Collection

- Kodacolor films (rare) appear to be black and white, with prominent vertical lines in the frame. With the right type of lens, they could actually be projected/scanned to color – though few archives have the right lens.



Stills from [The Andrews Nursery, water lilies, and phlox](#) (unknown creator, ca. 1930s). T.D.A. Cockerell Collection

- Dufaycolor films (rare) have a distinctive rastery quality, almost like a comic book.

Column N – Material base:

The base is the plastic that supports the emulsion layers that carry the image. The material base can be nitrate, acetate, or polyester.

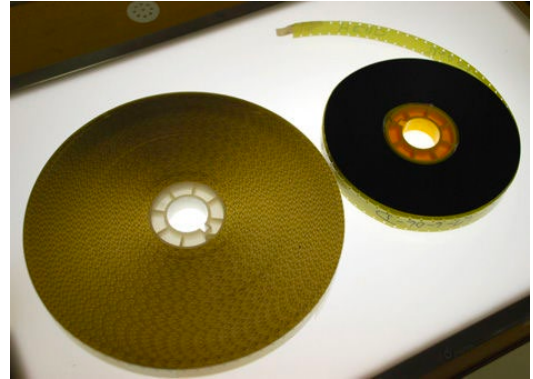
- Nitrate will only be 35mm. Nitrate film manufacturing stopped in the 1950s, because it is highly flammable. Nitrate film stock will have “nitrate” printed next to the name of the film stock.
- Acetate and polyester film will be labeled “safety film” on the edge text. To determine if a safety film is acetate or polyester:

Place the film inside a polarizing filter. (See [this guide](#) from the National Parks Service.)

If the film appears rainbowy, like the image on the left, it is a polyester base. If it is dull, like the image on the right, it is acetate.

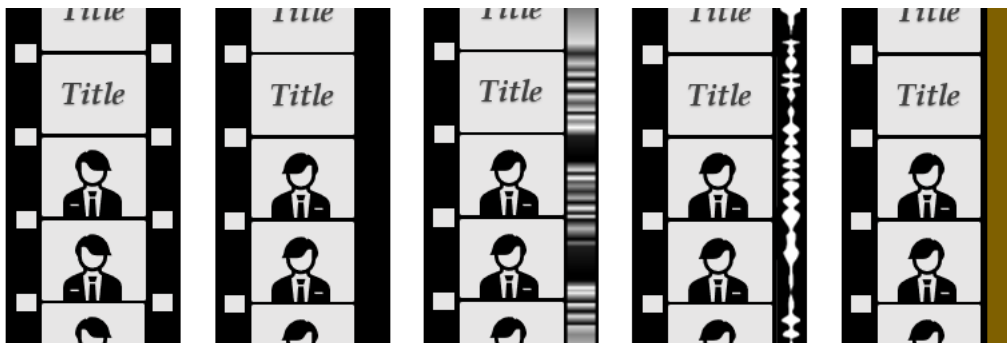


- Another way to distinguish a polyester base from acetate is to place the entire reel on a lightboard. If the light shines through the edges of the reel, like the reel on the left, it is polyester. If the reel is opaque when on a lightboard, like the reel on the right, it has an acetate base:



Column O – Silent or sound:

Film reels with single perforations *typically* have sound, whereas double-perforated films do not. The soundtrack will be visible on the opposite side of the perforations, as the three reels on the right in the image below. The two reels on the left – both double-perf and single-perf – are silent, because no soundtrack is visible.



While winding through the film, you may discover that both silent and sound film clips have been spliced together. In that case, choose “mix” in Column P.

Column P – Soundtrack type:

There are three different soundtrack types:

- optical (variable density) has multiple lines, similar to a barcode:
- optical (variable area) has visible sound waves:
- a magnetic soundtrack is a yellow/brown color strip on the side of the reel:



Additionally, you may come across a reel that is entirely a dull brown or grey color, with no image track or separate frames. This is called sepmag. It only carries a soundtrack, with no image:

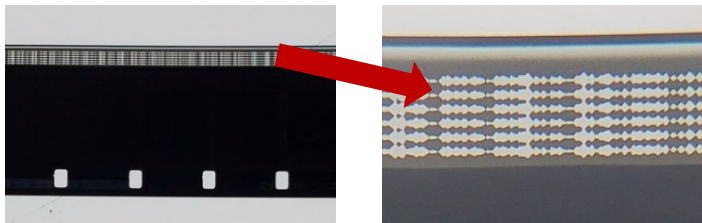


If you find that a reel has different types of soundtrack spliced together (which is rare), choose “mix” in Column P.

Column Q – Sound channels:

You will only be able to determine sound channels for variable area sound.

- If there is one soundtrack line visible (as in the examples above), label the reel as “monaural” (single).
- If there are two parallel soundtrack lines visible, label the reel as “stereophonic” (dual).
- If there are more than two channels visible, choose “multichannel.”
 - Sometimes, multichannel variable area sound may seem like variable density lines, if you don’t look carefully:



Column R – Film Stock:

In the film stock field, indicate the brand of the film manufacturer. It is often printed by the perforations on the edge of the reel. Names such as “Eastman Kodak” are commonly found:



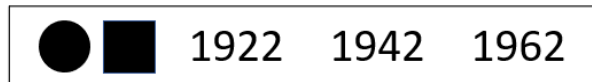
- Not all film stock will be printed with the brand name. If there is no brand indicated, leave this field blank.
- If you a reel has more than one film stock spliced together, list them all in Column R.

Column S – Edge code date:

Some film stocks – mostly Kodak brands – indicate the date the film stock was manufactured using a code of shapes, printed near the brand name. Use this link to match the code to the date of the film:

https://www.filmpreservation.org/userfiles/image/PDFs/fpg_10.pdf

- Most codes are associated with three different years, separate by decades. For example:



If you can tell what decade a film belongs to – for example, if it features styles and aesthetic qualities suggestive of the 1960s, rather than the 1920s – put that date in Column S. If you aren't sure which decade a film belongs to – if there are no clues in the content, or you can't distinguish 1920s styles from 1940s – put both or all three dates in Column S (e.g. "1922/1942" or "1922/1942/1962").

- Keep in mind that the edge code date refers to the date this physical piece of film stock was manufactured. It may be a copy of content originally produced at a different time.
- If a reel contains film clips with different edge code dates spliced together, list them all in Column S (e.g. "1928, 1936").

Column T – Perforations:

Perforations are the sprocket holes on the side of the film stock.

- Single-perf means there are only perforations on one edge of the film stock.
- Double-perf means there are perforations on either edge of the film stock.
- If a reel contains both single-perf and double-perf film clips spliced together, label the column as "mixed."

Column U – Aspect ratio:

Aspect ratio is the proportion of the width and height in the projected image. 1:33:1 (standard) is the most common – if not only – aspect ratio found in our collections.

Other possible aspect ratios include spherical, also called non-anamorphic widescreen, 1:85:1 and anamorphic widescreen, 2:35:1. See this [guide from the National Film and Source Archives of Australia](#) for more information.

Column V – Film element type:

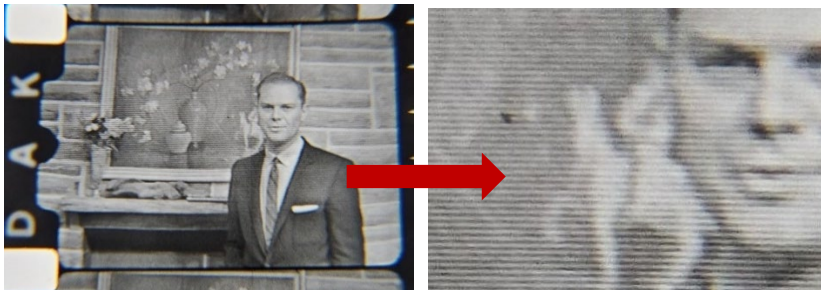
Use this column to indicate the film element type, if you can determine that the reel falls into one of the specialized categories listed in the dropdown menu.

Generally, unless the original container or leader was labeled to identify its element type (like workprint, outtakes, or dupe) – you may not be able to tell. In that case, leave this column blank.

This flowchart may help you identify negatives, internegatives, and camera originals:

<http://www.brianpritchard.com/16mm%20Identification%20Version%201.02.pdf>

A Kinescope is a broadcast recorded shot on film from a television monitor. It is identifiable by the horizontal raster lines in the frame.



Frames from Portland Story (KPTV, 1960), International Typographical Union Collection

Column W – Frames per second:

The standard rate at which film is shot and projected is 24 frames per second. Some early film – including silent amateur footage shot into the 1930s-1940s – may be shot at 16 or 18 frames per second. However, we cannot determine the proper frame rate just by looking at the physical print during the inspection process.

If there is writing on the film container or label that indicates the frame rate, write it in Column W. Otherwise, you can leave this field blank, and we will assume it is 24 fps.

Column X: Hand-edited (yes/no):

Put “yes” in Column Y if this film reel contains original, physical tape or cement splices that join two different shots together, as the image on the right.

- This does *not* include physical tape repairs, which usually join parts of the same shot back together where a break has occurred.

Frames from Semester at Sea production footage (University of Colorado Boulder Public Information Office, ca. 1970s), CU Boulder Publicity Offices Collection



C. Film content information

1. Wind through the rest of the entire reel, using the moviscop to view the content of the film.
 - If the film is particularly brittle, warped, or dirty, do not run it through the moviscop. Instead, use a loupe and lightboard to examine the image as you wind through.
2. Record information about the content of the film:

Column Y – Title on screen:

If the film includes an on-screen title, enter it in this column.

Column Z-AA – Language information:

- If the language of the film is English, leave these columns blank.
- If the language of text on-screen is not English, indicate the language in Column Z.
- If the language of the film's audio is not English – which may only be known through documentation on the film container – indicate the language in Column AA.

Column AB –Transcribe credits/other text:

- If there are production credits at the start or end of the film, transcribe them here. You only need to include major people and companies – like producer, distributor, director – or other credits you feel are significant to this film, like narrator or musician.
- If there is other information on screen about the creation of this film, transcribe it here – like corporate sponsor, or date or circumstances of production.
- Indicate where the credits you transcribe appear. For example, “Opening title card reads...” or “End credits read, ‘Directed by _____’”
- If intertitles are used to provide information or commentary throughout the film, describe them in Column AC, not here. Use this column only for identifying production/distribution information and context.

Column AC – Description of film:

Write out a description of the film's contents. Identify major people, places, scenes, or objects that appear in the film. See section below for detailed instructions on describing film content.

D. Film condition information

1. Place an A-D strip in the film can. Return to this reel after 24 hours. Use **Column AD - Deterioration** to indicate the amount of acetic acid off-gassing (“vinegar syndrome”), based on the color of the strip:

0 – Good
1 – Fair to good
1.5 – Rapid deterioration
2 – Poor
3 – Critical

2. Put an “X” in these columns to indicate any issues with the physical condition of this film reel:

Column AE – Warping or curling:

Film warping or curling can occur when there has been stress on the reel or the reel was in a moist or humid climate.

- Curling and shrinkage may cause the edges to curve inward, like a tube – as in the image to the right. If a reel is curling or shrinking, *stop the inspection*. Do not continue to unwind it.



- Warping is when the film twists as it hangs between the rewinds, as in the image on the right. Warping film can continue to be inspected, though it should be handled carefully.

Column AF – Sticking:

Put an “X” in this column if the film tends to stick together rather than falling loosely as you wind through the reel – *unless* the sticking is clearly caused by tape residue on the film.

Film that is sticking must be handled delicately. If you feel that content could be shed or lost by pulling the film apart – especially if it has a magnetic soundtrack – stop the inspection.



Column AG – Mold:

Mold can grow on film stock and metal reels from moisture exposure or decomposition of materials. Mold may appear as white, brown, or black powder on a film reel.

- If mold is found, *stop the inspection* until the film can be cleaned with isopropyl alcohol to prevent further growth.
- Clean the inspection area, equipment, and supplies thoroughly with isopropyl alcohol after handling the film.

Column AH – Tape residue:

Mark this column if there is tape (besides splice tape) or tape residue on the film. Indicate where it is found – at the beginning, at the end, or throughout. Tape residue will be cleaned at another time – particularly when and if the reel is requested for digitization or viewing.

3. Additional fields:

Column AI – Needs general cleaning - Mark this column if the reel is notably dirty or dusty.

Column AJ – Obvious smell – Note if this film seems to emit any obvious smells to indicate breakdown. Because smells occur from the release of chemicals, **do not sniff** the film directly. Smells can include:

- Vinegar – the smell of acetate film decay
- Mothballs – the smell of di-acetate film (1920s-30s), which may or may not indicate decay
- Dirty socks – the smell of nitrate film

Column AK – Other physical damage - Use this column to indicate things like excessive broken sprocket holes or other damage.

Column AL – Other notes - This column is available for any other additional information you find necessary to record about this reel.

E. Finishing the inspection

1. When you get to the end of the reel, **examine the existing tail leader**, if any.
 - Update Columns I, J, or K if titles, information, or sync sound markers appear on the tail leader that are different from or were absent from the head leader.
 - Indicate which end of the film this information comes from. For example, “Head leader reads....” or “Title on tail leader...”
 - Tail leader in poor condition can be replaced under the same circumstances as head leader (i.e. all information has been recorded, there are no sync sound markers, etc.)

2. **Add new tail leader to the film.**

- Add about 12-15 feet of new leader (about 3x the distance between the two rewinds).
- With a sharpie, label the leader with "Tail" and the collection name/reel number.

3. **Replace the core, if needed.**

- The film should be rewound onto an archival core (a white or blue plastic disc), rather than a metal reel or previous plastic core – unless the previous plastic core is very clean.

4. **Rewind the film.**

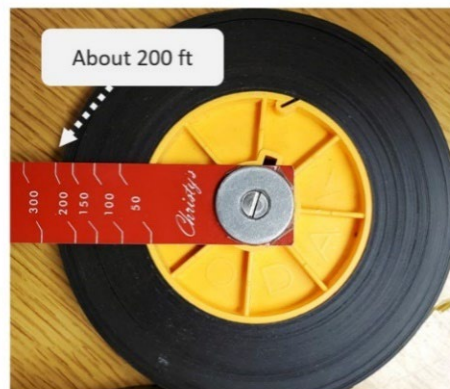
- Rewind the film onto the new core. Try to rewind the film in one smooth pace, to achieve an even wind for storage.
- Tape the head end with a long piece of paper tape (about 1/2 the diameter of the reel).

5. **Measure the reel.**

Column F – Length - Using a film measuring stick, calculate the number of feet in the reel.

Measure according to the size of the core (2 inches or 3 inches).

Use the red side for color film and the black side for black & white film.



Column G – Duration:

Duration is calculated according to the film gauge, the footage measured above, and the frame rate of the film. Use this calculator: <https://www.scenesavers.com/content/show/film-footage-calculator>. Assume the frame rate to be 24 fps unless otherwise indicated somewhere on the film can.

Round the duration calculated *up* to the nearest minute. Enter it in Column H as an integer.

Film type:	<input type="text" value="16mm"/>
Speed:	<input type="text" value="24"/> fps
Feet:	<input type="text" value="125"/>
Time:	hour: <input type="text" value="0"/>
	min: <input type="text" value="3"/>
	sec: <input type="text" value="28"/>

For example, the film above is calculated to be 3 minutes, 28 minutes. Put "4 minutes" in Column H. We always round up, to ensure that we budget enough funds for digitization.

Description guidelines:

When inspecting film on a rewind bench, it is not always possible to determine the message, meaning, or narrative depicted in the reel. We may not have enough background context to identify all of the people, places, or events that appear. Moreover, many of the reels in our collections contain original or unedited footage that was not intended to be viewed as a coherent artistic or intellectual work. Sometimes, the best we can do is to generally describe the images we see, as much as we understand them.

Workflow:

- As you wind through the film, make notes of all the relevant images and intertitles.
- After you've wound through the film, revise the description of the film as a whole. What things could be cut, combined, or summarized? Is there anything that needs more description?

General guidelines:

- **Goals:** Identify major people, places, scenes, sites, or objects that appear in the film, as possible.
 - Our researchers decide what material to request based on our descriptions. Think about what diverse groups of researchers may want to know about.
 - In addition to things that are heavily featured, identify things that are *unexpected*.
 - For example, in a film described as "Major historical sites around Havana, Cuba...", researchers may have a good idea of what sites would be included. What else is pictured that they might not anticipate? Street musicians, street cars, flower gardens, a person pulling crops on an ox cart?
- **Transparency:** Include all the information you have – even educated guesses – but be transparent about what you do or do not know.
 - For example: "Reel features Ann Roy and children visiting people in a home or artists' studio, likely Bill Rabon in Tulsa, Oklahoma, possibly with Margaret Fielder."
- **Emphasis:** It is not necessary to describe things chronologically, in the order that they appear in the film. It is often better to start with the things most prominent and emphasized in the film.
 - It may be helpful to list things in categories: "Film shows historical sites like... People depicted include... Also includes scenes of..."
- **Efficiency:** Write with efficiency and avoid redundant content.
 - Similar images and intertitles can be summarized, rather than repeated.
 - For example, you don't need to write: "Includes footage of people on camels visiting pyramids, street scenes of Cairo, and more scenes of pyramids." A topic will still come up in a keyword search of our collections if it is only mentioned once.

- At the same time, your description does not have to be good writing. It's okay if every sentence begins with "Also includes images of..."
- **Detail** - The amount of detail needed sometimes depends more on the context of the collection than the individual film.
 - For example: If a publicity collection has one reel of UCCS campus footage, we could describe it as "Footage of UC Colorado Springs, including campus buildings and scenes of students in classrooms." But if a publicity collection has 30 reels of campus footage, we would want to determine *which* buildings or classes are featured in which reels – in order for researchers to decide which of those reels are most relevant to them.
- **Intertitles** - Not all intertitles have to be transcribed. You can write "... includes intertitles."
 - But - explain the tone, content, function, or perspective of the intertitles, as appropriate. For example:
 - "Includes intertitles with scientific measurements."
 - "Includes intertitles offering historical context."
 - "Includes intertitles giving description and commentary from the perspective of an American traveler."
 - You can transcribe intertitles if they provide information or an indication of tone or perspective that is hard to summarize or explain.
 - For example, "Titles describing images of local people include 'Musicians who know nothing about the American Federation of Musicians.'" (Because, I'm not sure what that is meant to imply.)

Describing race, ethnicity, ability, etc:

Describing people in archival images involves two, sometimes conflicting, ethical values:

1. We do not want to assume or incorrectly identify the race, ethnicity, gender, or ability of people differently from the way they self-identify
2. We want to draw attention to histories of underrepresented groups.

For example, an image of a possibly transgender or gender non-conforming person in the early 20th century may be of interest to historians in many fields – but describing the image with no assumptions or implications as "a person wearing a suit" will not draw the attention of researchers. Moreover, referring to race, ethnicity, gender, or ability status *only* when describing people from underrepresented groups reinforces the position of white, cis-gender, able-bodied people as a normative identity.

The [CU Boulder Processing Manual, Appendix K](#) has some resources for describing groups of people.

In general:

- If a person's race is confidently identified, some currently preferred terms include Black (capitalized), white (not capitalized), Indigenous, and East Asian. "Possibly Indigenous" or "possibly South Asian" could also be appropriate.
 - It is preferable to identify Indigenous people according to their specific communities, if they can be determined. If the geographical location is known, use the <https://native-land.ca/> map to determine possible tribal communities. For example, "Includes footage of an indigenous family, possibly Ute or Southern Paiute..."
- You can use gender neutral terms ("person") and pronouns ("they/them/their") for unidentified people.

Offensive language or images:

It is possible that films in our collections could contain potentially offensive language or images. For example, the travel films in the Leroy Miller Collection often contain intertitles that give offensive commentary or description about local people in Asia, Northern Africa, and the Middle East.

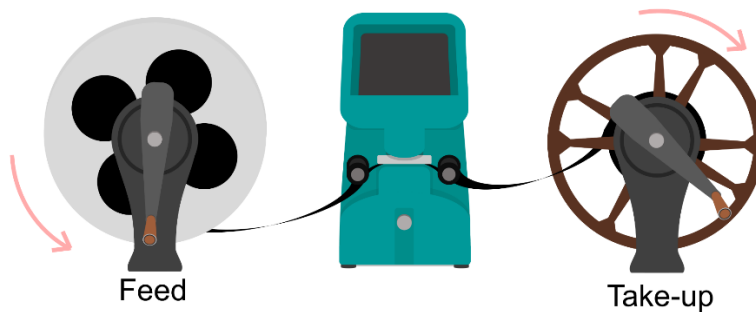
- Do not exclude the presence of potentially offensive content from your description. Prepare the viewer for what they will see by describing it, as below.
- Do not reinforce harmful or outdated language by re-using it uncritically.
 - If you don't know (and can't determine via google) if a certain term or word is considered outdated or offensive, put it in quotation marks.
 - For example, "Extended sequence of street scenes featuring snake-charmers and 'fakir' with children."
- Describe groups of people and locations in terms currently preferred by people who live there today.
 - If you think it is important that the film features the outdated term, you could include it in quotation marks, after the updated term. For example: "Includes intertitles describing the colonial history of Mumbai ("Bombay")."
- In many cases – because what is or is not offensive is a relatively subjective judgment and it changes significantly over time – it is better to quote the language than to describe it as "offensive."
 - For example, "Extended intertitles describe the educational system in the Muslim world, where 'students commit intellectual suicide.'"
 - However – if language is so overtly offensive that you are not comfortable reproducing it, you can describe it as "slur" or "derogatory term."
 - For example, "Intertitles include derogatory descriptions of women wearing veils and stereotypes about Muslim and Arab culture."

(Re)-Orienting a Film Reel:

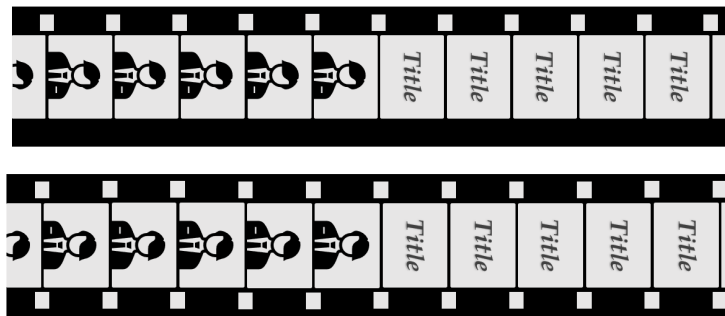
1. To inspect a film with the Moviscop:

Feed the film from the **bottom of the feed side (left)** to the **top of the take-up side (right)**.

Winding from the **bottom** on the feed side correctly orients the film in the Moviscop, while feeding to the **top** of the take-up side helps keep the film from rubbing against the table.



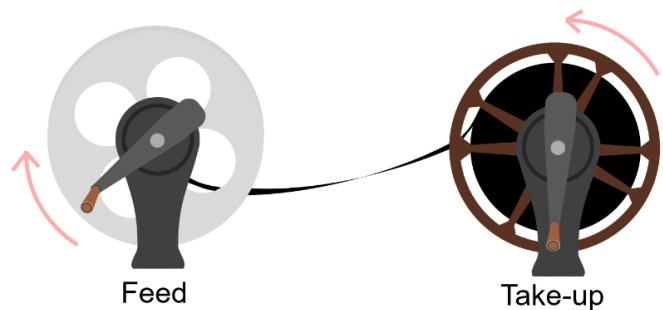
If correctly oriented, the film will usually* appear as below:



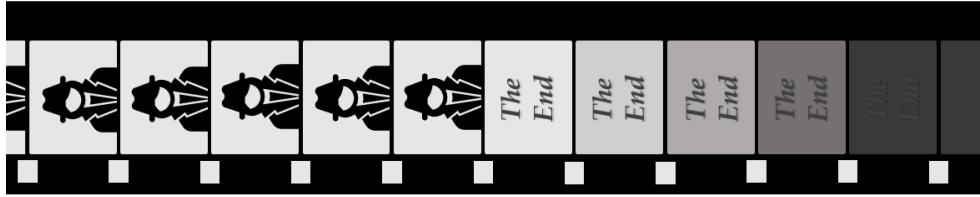
- The top of the frame is to the right.
- The sprocket holes (if single-perf) are away from you.
- Usually*, the emulsion side (dull) is up, while the base side (shiny) is down.
- Usually*, words are correctly oriented, not backward.

* This is true for most prints. It may opposite for camera originals or other intermediate generations.

When the inspection is complete, rewind the film from the **top of the take-up side (right)** to the **bottom of the feed side (left)**. Do not feed the film through the moviscop while rewinding.

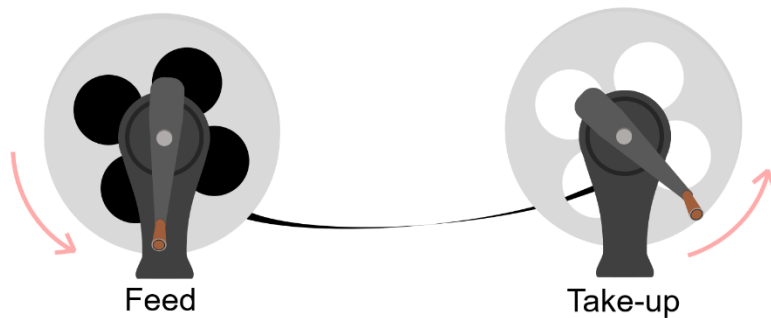


2. If the top of the film frame is to the left, the film is currently tails-out:

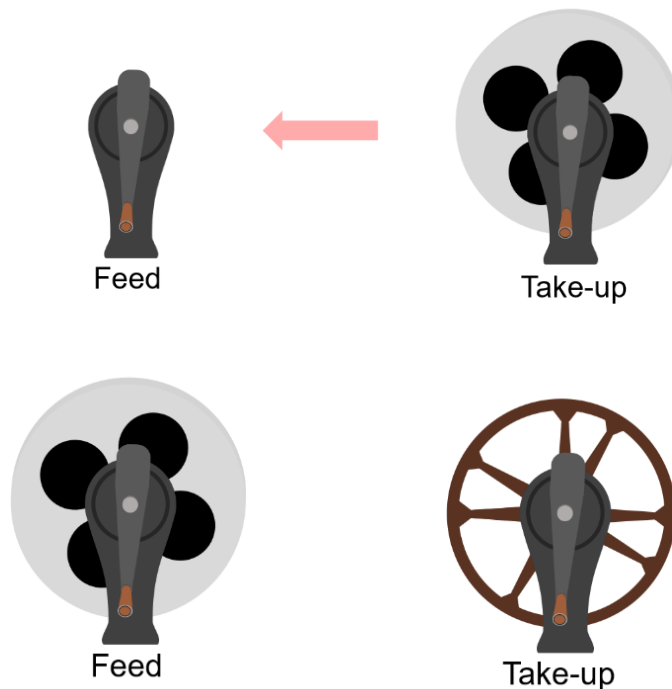


Before proceeding with the inspection, follow the directions below to rewind the film:

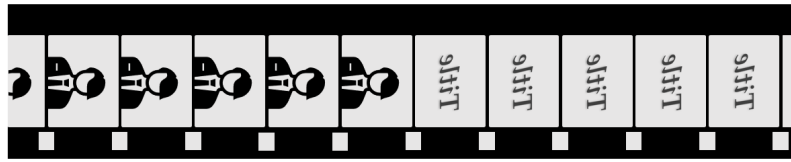
- Feed the film from the **bottom of the feed side (left)** to the **bottom of the take-up side (right)**
- Wind the entire film to the take-up side.



- The film should now be heads-out, on the take-up side.
- Move the reel to the feed side and begin the inspection as usual.

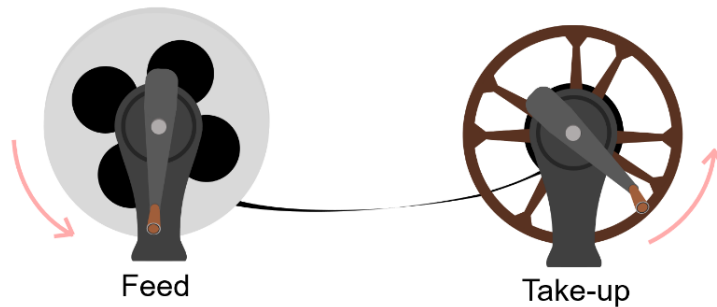


3. If the text and image are incorrectly oriented, the base (shiny side) is facing up, or and/or the sprocket holes are toward you (for single-perf film), the film may be wound inside out (rare):

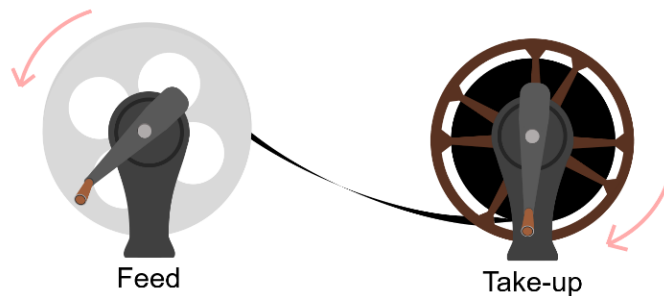


Before proceeding with the inspection, follow the directions below to re-orient the film:

- Feed the film from **bottom** of the feed side (left) to **bottom** of the take-up side (right).
- Wind the entire film to the take-up side.

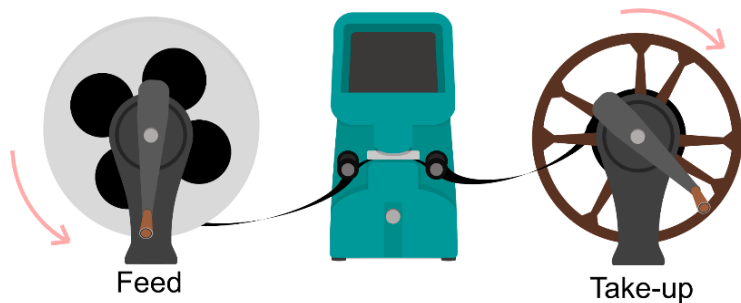


- Rewind the entire film, from **bottom** of the take-up side (right) to **top** of the feed side (left).



- The film will now be correctly oriented on the feed side – though it will be coming from the top.

- Flip the reel upside down to feed the film from the bottom, and begin the inspection as usual.



Dealing with popped cores

If a reel is not wound tightly enough, there is a risk that the core – or inner layers of the wind – will drop out of the center when the reel is moved.

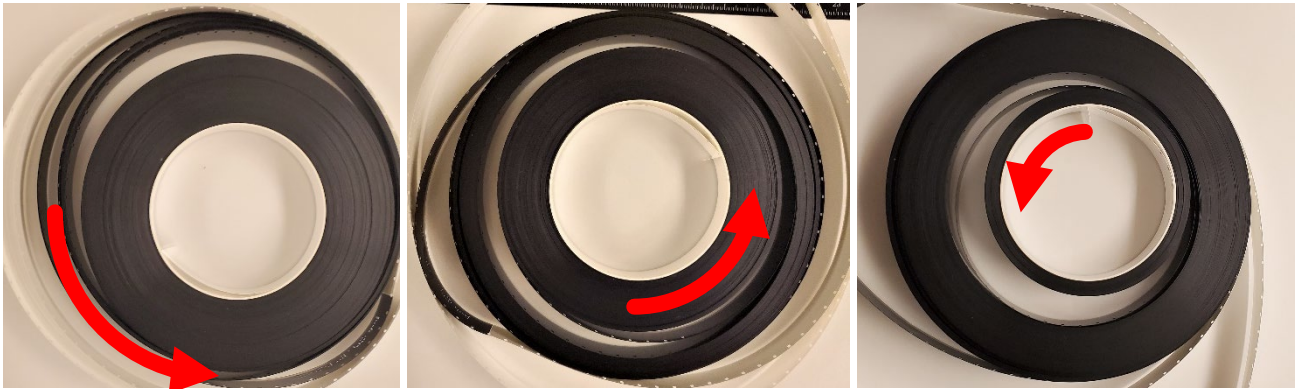
If this happens: **DON'T PANIC**. If you begin to pull the layers apart, you will cause a much bigger problem.

There are two possible solutions to get the film back on a core:

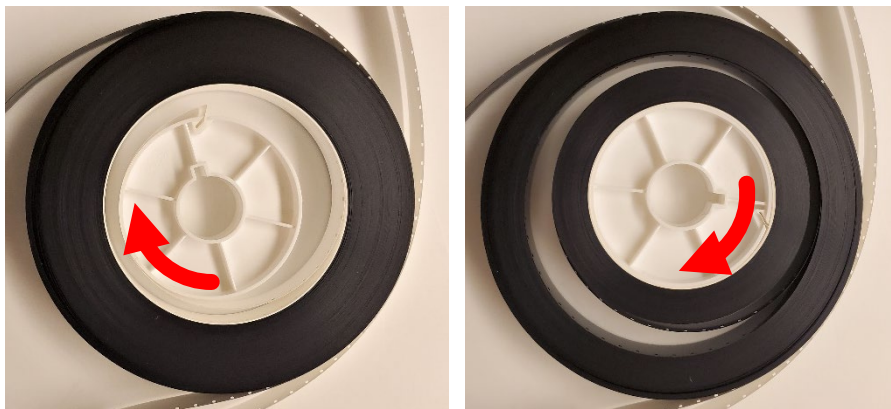


Option 1 – Make the center hole bigger to accommodate a new core.

- Set the film on a **clean**, smooth surface.
- Wearing gloves, carefully rotate the outer edges of the film to begin to loosen the wind. Continue slowly to rotate inner layers of the film until the center hole has been widened.



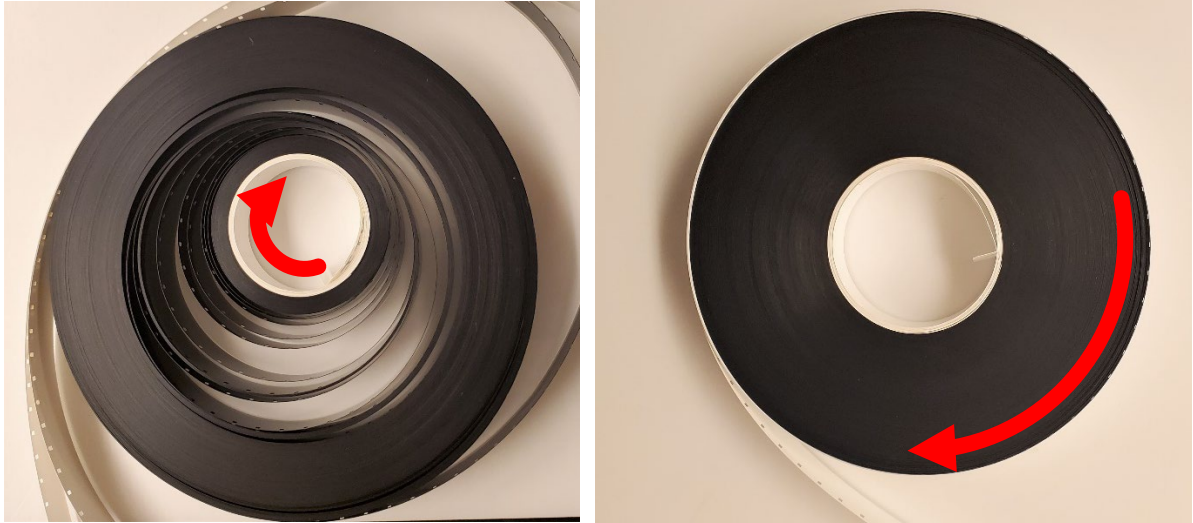
- Place a new core inside the hole and slowly rotate in the opposite direction to tighten the wind.



- When complete, use the rewind bench to full unwind and rewind on the film onto its core to assure the wind is tight enough for the future.

Option 2 – Make the center hole smaller, to get the film onto a split reel.

- A. Set the film on a **clean**, smooth surface.
- B. Wearing gloves carefully wind the inner layers of the film to begin to narrow the center hole. Continue slowly to rotate further layers of the film to achieve a tighter wind.



- C. Carefully place the film on a split reel. Use strips of lint-free cloth or dry photo wipes to stuff the center hole of the reel where the core would normally be. Attach the other side of the split reel.



- D. On a rewind bench, completely unwind the film onto a take-up reel and rewind it onto a new core, assuring the wind is tight enough for the future.