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## Preparing for a Motion Picture Film Transfer Project

In order to estimate costs for a film transfer project, you need to know a couple of things about the film, such as the format (8mm, 16mm, 35mm), the running time and the condition of the film. You also need to know what format you will transfer to, such as a digital file, a videotape or optical disk.

Knowing what you want to transfer to is relatively straight-forward. The condition of the film is also relatively easy to determine by simply looking at it. As you are looking at the film, ask yourself the following questions:

1. Does the film have an unusual odor? If so, what does it smell like?
2. Do you have access to A-D strips (to measure the level of acidity of the film)? If you've measured the level, what is it?
3. Do you have access to a shrinkage gauge? If you do, measure the film at the head, middle and end to gauge the level of shrinkage (note that an inexpensive reference gauge can be made from new film leader. Cut new leader to a length of 100 perforations and count the number of perforations your film has shrunk compared to the leader to estimate a percentage shrunken. One perforation shrunken at the 100th perforation is 1% shrunken).
4. Does the wind of the film on the reel appear to be smooth and uniform? If not, what is wrong with it?
5. Is the film warped (you can easily tell by unwinding a few feet of the film to see if the film lays flat or curls)?
6. Is there noticeable damage to the film (such as tears, broken sprocket holes or separate pieces)?
7. Does the film unwind easily or is it stuck to itself?

A lot more can go into film inspection, but these couple of points will help you quickly determine the condition of the film and its suitability for transfer.

### Estimating Running Times:

It can be difficult to estimate the running time of the film if the reels are not marked with a footage or running time and if you don't work with film all the time. The rest of this article will talk about how to determine running times as well as storage and shipping.

There are a few different ways to estimate film running times. Since pricing is usually based on the running time of the film, it is important to know how much film you have in order to estimate costs for transfer.

One way to estimate running time is to estimate the footage of film and the frame rate it runs at. To assist, we have an easy to use [Film Footage Converter](#) on our website. Simply select the film format, the frame rate and feet of film to estimate the running time of the film.

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Sometimes estimating film footage is easy. If your film is on a reel, the reel may have hash marks along one of the spokes that will tell you either a measurement in feet or minutes or both. If you don't have films reels with these marks, or if you don't know the footage, use the following chart to convert the radius of the film reel to footage (note: Measure from the center of the reel to the edge of the film). Please notice that there are measurements for 400' film reels and 1200/1600 foot film reels. This is because the center hub in a 400' film reel is smaller (a 400' film reel is 7" from edge to edge). Please note that these estimates are for 16mm motion picture film. 35mm should have the same radius/footage, but the running time would be different, because the frames are larger (i.e. it moves through the telecine faster). For the same footage, 35mm has a shorter running time compared to 16mm.

**Center Hub Diameter, 2.5" or 6 cm**

<u>Radius, inches</u>	<u>Radius, cm</u>
2	5
2.5	6.5
2 7/8	7.5
3 1/4	8.5

**400' film reel**

<u>Feet</u>
100'
200'
300'
400'

**Center hub diameter, 4 7/8", or 12.5 cm**

<u>Radius, inches</u>	<u>Radius, cm</u>
3 1/4	8
3 7/8	10
4 1/2	11.5
5	12.5
5.5	14
5 3/4	14.5
6 1/8	15.5
6 3/8	16.25

**1200 & 1600' film reel**

<u>Feet</u>
200'
400'
600'
800'
1000'
1200'
1400'
1600'

**Film Frame Rates:**

There is no true standard for film frame rates...at least for silent film, but some frame rates were more common than others. For films with sound, 24 frames per second (or FPS) is a common frame rate. For older, silent films, 18 frames per second was a common frame rate. But, remember that older cameras were either hand-wound or spring driven, meaning that the frame rate could vary a little in either direction. For example, we've had films that appeared to be recorded at 11 frames per second. There is nothing inherently wrong with this slower frame rate, except that anything slower than 15 frames per second a noticeable flicker appears during playback. This is because the eye can perceive individual frames at that slower frame rate.

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### **Storing films on a shelf:**

Often, films are placed into new archival containers and on archival cores as part of the processing of the collection. This can bring up a question about how to store cans on a shelf. If your films are on reels, it is best to store these in film cans upright on a shelf. In other words, you would stand the film containers on end. This is because the film reel is designed to support the film and it doesn't place undue stress on the edge of the film. If your films are on cores, the film cans should be stored laying flat on a shelf. Archival containers are designed to support the edge of the film when oriented in this way.

### **Packaging film for shipping:**

This is an area that causes concern for archivists. How do you package film to minimize the potential for damage during shipping? As with storing your films, the answer depends somewhat on if the films are on a core or on a reel. Here is a checklist to go through when packaging your films.

1. Is your film on a reel and does it fit tightly in the film can (doesn't slide around)? If so, you can ship the film in that film container without special preparation to the film (note that the film container should still be placed in a padded container for shipping).
2. Is the film on a core and does it fit snugly inside the film container? If so, you can ship with no special preparation.
3. If the film fits loosely or if it has a lot of room to slide around inside the film container, take up the extra space in the container using archival safe packaging material (such as foam, acid free paper or bubble wrap).
4. Films should always be shipped inside properly sized film containers. We recommend that you do not ship film containers that have multiple films inside them, unless you pad each film. Ideally, each film would be shipped in its own film container.
5. Please do not send loose films inside cardboard boxes. The films can unwind and are easily damaged. If the films are on cores, the films will spiral off the cores and are very difficult to deal with and wind back onto the core.
6. Check to see if the lid fits snugly onto the film container. If so, it may be OK to ship as is. If you are concerned about the lid coming off during shipping, you can place a piece of adhesive tape on opposite sides of the film container (picture placing a piece of tape at the 3:00 O'clock position and the 9:00 O'clock position as an example)
7. There are two methods for packaging films. Whichever you choose, make sure you use a sturdy box for packing the films.
  - a. One method is to place bubble wrap on the bottom of the box, then a layer of film cans, another layer of bubble wrap and another layer of film cans. Continue until the box is full and then take up any extra space with bubble wrap.
  - b. A second method is to individually wrap each film can in bubble wrap and place them into the box. This tends to take up a little more room than the first method, but pads the films completely for shipment.

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Either way is fine as long as the extra space in the box is filled with bubble wrap. Some advocate placing this box inside another box with a layer of padding in between the two boxes. Again, this is fine and will add another measure of safety.

8. Please do not use the Styrofoam packing peanuts as padding, if you can avoid it. They tend to break apart during shipping and static causes them to stick to everything, including the surface of the film if they happen to get inside the film cans. They are quite difficult to clean up.
9. Place a packing list inside each box describing the contents. Mark the box appropriately (This Side Up and Fragile) and seal with packing tape. Then number each box (1 of XX, 2 of XX, etc.)

Hopefully this guide will help you as you are preparing your films for shipping, or transfer. If you have any questions or if you would like archival advice or assistance with your collection, please call 800-978-3445/859-291-5100.

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