

AMIA the association of moving image archivists

Inédits Q & A

Answers to Frequently Asked Questions on Amateur & Small Format Film

Introduction

In this column, AMIA's Inédits Interest Group answers frequently asked questions and addresses issues involved in archiving and preserving unpublished, amateur and small format film. The first "Inédits Q & A" column appeared in the Winter 1998 issue of the AMIA Newsletter.

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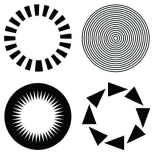
The Answers

(from AMIA Newsletter #39, Winter 1998)

Question 1: I've been told to archive 8mm film on cores rather than reels. Where can I buy cores?

Answer: Never mind; you don't want them. The specter of two inches, or three, five or seven inches of 1/4-inch film ready to "cone" itself if it's mishandled begs caution. Fifty feet of fettuccini on the floor is no way to run an archive.

Store 8mm (and Super 8) - whether sound striped or not - on reels in the best condition you can find. Wind the film on the reel with moderate tension. Add white Kodak leader, removing any plastic lab leader which shrinks (Kodak 8mm movie leader, catalog no. 163-5002, or Kodak Super 8mm movie leader, catalog no. 169-3613). Label and tape down the head leader with adhe-



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sive paper tape. Never pull on the leader to tighten a too-loose wind of film or horizontal "cinch marks" (scratches) may occur across the images. You may want to wrap the reel in acid-free tissue paper and shelve it in an archival cardboard box. The boxes for 1/4-inch audio tape are a good fit; see the Gaylord catalog. Be sure to keep the original yellow Kodak boxes, for they often hold dates, notes, and other clues about the content; but be aware that in projection at family gatherings, boxes and reels are often mixed up. The yellow boxes have become treasured icons to many families because notes were handwritten by elders.

(from AMIA Newsletter #41/42, Summer/Fall 1998)

Question 2: I have determined that the 8mm film that I am having copied to 16mm negative was filmed at 16 frames per second. Do you recommend printing it frame for frame, or step printing it for projection at 24 fps? 24 fps will improve easy access to it and allow me to make a copy on video with an in-house film chain. On the other hand I can search for a variable speed projector and look for funds for a professional film to video transfer at 16 fps. This harder path feels archivally correct."

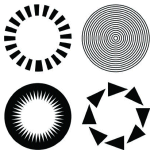
Answer: Make a preservation copy frame for frame so that future researchers can have the simplest and best representation for their consideration. Step printing to 24 fps requires printing some frames twice which alters the representation of movement and introduces a slight stutter to some gestures. Interpreting step-printed movement can be a problem.

Bravo on ascertaining the frame rate for that is difficult with amateur film for several reasons. Many camera models were provided with a range of frame rates that could be imprecisely selected by moving a lever or turning a dial. To conserve film, some filmmakers chose frame rates slower than the recommended 16 fps; sometimes 14 fps, often 12 fps. Furthermore, most amateur cameras prior to the 1950s were powered by spring-wound motors that sometimes moved film faster at the beginning of a shot than at the end. Often there is little or no documentation, so the original filming rate has to be determined by repeated observation of certain incidental motions in the material, actions like walking, head turning, reaching, picking up a glass or cup. Since this method is somewhat subjective, all the potential variables are best served by making the copy as close to the original as possible: frame for frame.

It's a good choice to copy 8mm on to 16mm negative to help maintain quality control because you are starting with an extremely high contrast original, reversal film created for direct projection. A good technician can hold down contrast build-up working to the negative. 16mm prints from the negative increase access to exhibition. One caution when planning to screen films at original, non-24 fps frame rates: you must work doubly hard before and during the screening with the technical people to be certain that they project at your film's original frame rate. We have all had the experience of running into the booth during the screening to request an adjustment to the frame rate to show the motion in real time. For serious auditorium projection of frame-for-frame prints at the original frame rate, even an exhibitor with a small budget can find and restore 16mm Bolex or Bell & Howell projectors which were manufactured to do variable frame rates. 1000 watt lamps for them are still available. This equipment is an affordable way to honor the filmmaker and the people recorded on the film.

(from AMIA Newsletter #43, Winter 1999)

Question 3: Some leaders on old 8/Super8mm home movies are often more shrunken than the film itself. What can families and small repositories such as historical societies do to protect their collections?



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Answer: Leaders used on 8/S8mm films often shrink faster than the film because some labs and many amateur filmmakers attached plastic leaders which shrink more quickly over time than the triacetate base film itself. To be sure, replace all leaders with better material made from triacetate film stock such as Kodak's painted leaders (coated white). When assembling small rolls of 8/S8mm film into larger rolls or with larger reels which were previously assembled be sure to check for and replace all the old leader including the leaders between the small rolls. (Old shrunken leader left between assembled rolls can cause damage when projecting or transferring the film.) Also, be sure to remember to splice the leader with the perforations in the same direction as on the film itself and with base/emulsion positions the same.

If there is valuable information on the leader, record that information in materials documenting the film and save the leader as part of the archival records, if desired. If the leader is of sentimental value, keep the leader but not attached to the film. Families wanting to save the leaders will probably come up with some unique and creative ways in which to display this form of family memorabilia.

For projection purposes leaders should be approximately five feet - long enough to thread a projector with some extra left over because most damage occurs in the first few feet when a projector is started. However, we are not recommending projecting these films; rather we are recognizing that many families continue to do so. If the films are shrunken, they should not be projected. Shrunken film should be handled with care and transferred to film or video for viewing purposes. (Whatever its condition, the original film should be kept and stored in as cool and dry a place as possible.) Leader needed for film-to-tape transfer or film-to-film copying can be as much as 6-15 feet but check with the video facility or laboratory for their recommendation. Eastman Kodak still manufactures a good quality triacetate white painted 8/S8mm leader which can be ordered from the Kodak Professional Motion Imaging (PMI) order line at 800-621-3456. Unfortunately poor quality plastic leaders (both white and in various colors) are still available through some laboratories and vendors, sometimes at exorbitant rates. As always, it is best to make some comparisons before purchasing.

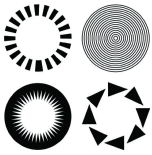
(from AMIA Newsletter # 44, Spring 1999)

Question 4: How much film is on a three-inch diameter reel of 8mm film?

Answer: If it's a full reel, 50 feet. Three-inch diameter 8mm reels originated as 25 foot double width 8mm camera loads to be exposed first in one direction then in the other - two rows of 8mm images running in opposite directions on a 16mm width film with twice the number of perforations as 16mm. The film was returned from processing split down the middle with the two 8mm sections spliced together as a 50 foot length of film on a three-inch reel.

An amateur filmmaker would purchase a box of unexposed film which came packed in a small black metal, plastic or aluminum can with black friction tape around it to keep it unexposed until use. The filmmaker removed the tape, opened the can and found a daylight load roll of film with a paper wrapper around it bigger than the reel. The paper wrapper was removed and saved in the can for later use for filmmaker identification. The film was threaded into the camera through the gate onto a take up reel already in the camera. After exposing 25 feet, the filmmaker had to remove the full take up reel, turn it over and reload it into feed position to expose the other half of the film.

This is the explanation for light-struck flashes and splice in the middle of 50 feet of 8mm film. If a Kodak film were only half exposed (run only in one direction), the tail bore perforations indicating the film type and the word "half-exp" for half exposed.



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When the other half of the film had been exposed, the end sticking out (the initial head of the reel) bore perforations indicating the film type and batch. After exposure the second time through, the user filled in his name and postal address on the wrapping band, wrapped the reel tightly, put the reel back into the can, re-sealed the can with the black tape, and gave the can to his/her photo dealer or mailed it off to be processed.

There were a few exceptions to the above. Some cameras used 8mm in 50 foot 8mm camera load cartridges. Also there were some Bolex and Fairchild cameras that could load 100 and 200 feet of 8mm film. Fairchild's system was for an experimental sound-on-film news gathering camera (8mm sound film appeared around 1960.) Fairchild's sound was recorded on magnetic (pre-stripped) 8mm film in the camera 56 frames ahead of the corresponding picture. The camera was supposed to run at a fixed 24 fps, but experience has shown that the rate varied down to less than 20 fps as the batteries ran down or from some other problem.

Question 5: What were the camera speeds most commonly used in 8mm filming, and how can one estimate the running times of 8mm film on three-inch reels?

Answer: There are 80 frames per foot on "regular" or "standard" 8mm film. A quick formula to determine 8mm running time is as follows: 80 frames per foot times 50 feet divided by frame rate equals running time in seconds of one three-inch reel. Divide the seconds by 60 to get minutes.

Here are some running times for 8mm at different camera frame rates:

- 16 fps: The most common 8mm frame rate is 16 fps. 50 feet of 8mm at 16 fps is 4 minutes 17 seconds.
- 12 fps: The second most common 8mm frame rate is 12 fps. 50 feet of 8mm at 12 fps is 5 minutes 34 seconds.
- 24 fps: This speed tended to be used for "professional" applications, by train buffs or others filming moving subjects such as sports or dance, or by serious hobbyists for titling, animation or films which were to be optically printed to 16mm. 50 feet of 8mm at 24 fps is about 167 seconds or 2 min. 47 seconds, which is approximately equal to 100 feet of 16mm at 24 fps.
- 18 fps: During the early 1960s an 18 fps marking began to appear on some 8mm cameras and amateurs began to use it.

It is virtually impossible to ascertain the frame rate in a viewer. Most older 8mm projectors are variable speed which is useful for determining the frame rate.

CAUTION: Only use a projector which is known to be clean and in top notch running condition with film known to be in good, non-shrunken condition under close supervision. Dual format 8mm/Super8mm projectors have designated frame rates. Some projectors have 9, 18 and 24 fps rates marked, which is a help in judging the correct fps rate. Some projectors have a capstan rather than a sprocket drive, which is easier on film.

Question 6: What are the other 8mm reel sizes and how much film do they hold?

Answer: In many 8mm collections you will find:

- A six-inch diameter reel, which is 300 feet
- A seven-inch diameter reel, which is 400 feet
- If the reel is full to overflowing, add an additional 50 feet and be very careful in handling to avoid spilling the film.