Archival Film Handling, Projection and Presentation
by Katie Trainor

Unit 1: Film Formats, Aspect Ratios, Luminosity and Sound

There have been dozens of film formats that have been experimented with since 1896 but for the purpose of this module (projection and presentation) this discussion will mainly be limited to those of 35mm, 16mm, R8, and S8.

To be discussed:

• Aspect Ratios
• Lenses
• Screen Luminosity
• Projecting Silent Prints
• Various Sound Formats

What is an Aspect Ratio?

An aspect Ratio is the proportion of width to height in a projected image, e.g., when you here the ratio 1:1:33, the picture is .33 times wider than it is tall.

History and examples

• Silent format 1:1:33
• Academy ratio – History and examples
• Other Flat Formats (1.85, 1.66)
• Widescreen formats (Cinemascope, Cinerama, 70mm)
• Small gauge ratios (16mm, R8 and S8)

Determining Correct Ratio for Projection

• Correct Lenses (focal length, prime lenses, zoom lenses)
• Correct Aperture Plates (show RP40)
• Correct Screen Masking System

Projecting Silent Prints

• 3 Blade shutters
• Variable speed projectors
• Optical center frame offset

Screen Luminosity
• Foot-lamberts
• Carbon Arc History (hand out of old carbon arc manual)
• Nitrate Projection
• Xenon bulbs

Sound Formats

• Early Sound formats- Variable Density and Variable Area
• Mono Sound, Stereo Sound
• Dolby, SDDS (Sony) and DTS formats

[for in class viewing bring examples of various aperture plates and strip of film. Also power point slide examples]

Suggested Class Activity (If able to have class in screening room with projection capabilities)

1. Show prepared reel that shows examples of mis-frames, out of focus, use wrong plates, wrong lenses, no masking, mis-alignment.
2. Show carousel slides of festival projection systems & film revision
3. Use spectra meter to measure foot-lamberts on screen

Readings:


Kodak, Reel People, H-50, pp. 110-116

Kodak, Reel People, H-50, pp. 78-85

Dolby Laboratories website ( PDF download)
The Evolution of Dolby Film Sound

Additional resources:

Widescreen.org

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Unit 2: Treatment and Handling of Archival Material for Projection

This Unit will discuss preparing an archival print (or any print for exhibition) for projection.

Topics to be discussed are:

- How an archival print gets into a cinema
  - Building relationships with venues
  - Knowing what your technical needs and requirements are
  - Film Festivals
- Various Examples of Inspection forms (Handouts 1-4)
- A and B winds (Handout)
- Kodak Date Code and Key Code Charts (Handout)
- Identifying various sound tracks (each student will get film strip example)
- Split Reels, Cores and shipping reels
  - When and how to use what reels depending on how film is shipped.
- Film Shrinkage Gauge
- Film Footage Counters
  - determining correct distance between cue marks
  - determining whether or not count down leaders are correct
- Cue Marks
  - Scribe cues
  - Lab Cues
  - Grease pencils
- Various Countdowns leaders (have physical examples and or slide)
  - SMPTE
  - Academy leader
  - Foreign
- Checking for splices and making mild repairs

Readings:

Wagner, Tim. (2007) Archival Film Handling- Inspection for Projection, Ch. 3
Excerpt from AMIA Rochester workshop.

Kodak, Reel People, (Handout) h-50-2, Film Handling, How to define Processed Motion Picture Film Damage

Kodak , Reel People Collection, pp. 80-86
Unit 3: Booth Maintenance and Presentation

Daily Projection and Cleaning Maintenance

Cleaning supplies

Isopropyl alcohol, Film Cleaner, Lens cleaning fluid, Lens cleaning tissue, Toothbrushes
2” paint brushes, Absorbent cotton rags, Cotton swabs, and Glass Cleaner

Explain what each of these are for and how they are used

Projector Cleaning

- Starting from the top and working down, use your toothbrush to clean all buildup from the sprockets, pad rollers and shoes. Using a little Xecote can help if the build up is particularly thick. Continuing again from the top use brush to get out all loose dust, and dirt paying special attention to the area around the intermittent assembly. Wipe down gate and trap assembly with a non abrasive cloth. Wipe rollers and check lenses for smudges.

Maintenance schedules (see word document example of IFC Center Maintenance Schedule)

- Keeping floors swept
- Porthole glass clean
- Rewind bench clean
- film projector lens maintenance
- screen luminosity checked
- Film Bins wiped
- Platter rollers wiped and checked

Training

- Although every booth is different this checklist guideline will assist in making sure your operators are qualified and prepared. (see word document- Training checklist)

Communication with the Projectionist

- Dispelling the myth of the operator
- Making the operator your ally not enemy
- What to do when things go wrong
- Keeping audience informed about technical difficulties and situations that may occur during the screening.
Presentation of Film on Screen

- Starting and Ending a film
- Theater Lighting
- Theater atmosphere
- Checking Sound- depending on film being screened the sound of a film can widely vary

Suggested Class Activity:

Go to a film screening at any movie theater and write a one page report on the presentation of the film screening. Describe what you see in regards to print quality, focus, framing, sound, brightness, start of film, end of film, theater atmosphere, and lighting.

Readings:


Wenders, Wim. (1986) Emotion Pictures, pp. 100-103


Unit 4: Reel to Reel, Platter and Digital Projection

Film Projection Basics

- Basic Projector Design- Describing the essential elements: Supply spool, feed sprocket, lens, lamp house, intermittent sprocket, sound head and take up spool.

Reel to Reel Projection

In projection, the act of changing from one projector to the other, preferably without interrupting the continuity of projection or the action being depicted. Often referred to as ‘changeover projection’.
Topics to be discussed:

- How changeovers work. Motor and Changeover cues.
- Threading various projectors (see diagram of basic threading design)
- Pros and Cons of Changeover projection
- Checking for cue marks (in relation to aspect ratio)
- Motor start up speeds and various countdown leaders

Viewings:

Show short video clip of myself doing a changeover.

Show clip from *Cinema Paradiso*, 1988, Miramax Films.

Platter Transport Projection

A film transport device consisting of at least three horizontal platters, each capable of holding up to 25,000 feet of film and providing up to 4 1/2 hours of continuous projection.

Topic to be discussed:

- Making up a film for the platter
- Breaking down a film from a platter
- Head and Tail splicing
- Platter rollers and maintenance
- PTR rollers
- The platter ‘brain’
- Pros and cons of platter projection
- Platter shippers and festival projection

[show slides of platter transport systems from Sundance Film Festival]

Viewing:

From Film-tech.com screen clips from examples of how a platter transport works.

Suggested Class Activity:

Field trip to a multiplex to view platter transport in action.
Digital Projection

This term has changed so significantly over the years that at the time of reading these words it may have changed again. It is inevitable that digital projection systems will replace our traditional mechanical projection operations. As we speak ther is a Digital Cinema Initiative (DCI) deciding on standards and practices for digital exhibition. What does this mean for the projectionist?

Topics to be discussed:

- Born digital material and options for exhibition
- Inspecting of video before exhibition
- Various digital projectors (LCD vs. DLP)
- Digital cinema systems
- How this will effect movie going and presentation quality
- How digital projection can ultimately be more complicated projection
- What does this mean for archival film?

Suggested Classroom Activity:

Field trip to a projection booth where digital cinema is up and running

Readings:


Kodak, Reel Notes Collection, H-50, pp 78-82

Additional Resources:

Kodak, Reel Notes Collection, H-50, *Legendary Lexicon of Projection*, pp. 87-109 (This is a glossary of terms)