

Author(s): Paul Conway, 2008-2010.

License: Unless otherwise noted, this material is made available under the terms of the **Creative Commons Attribution 3.0 License:**

<http://creativecommons.org/licenses/by/3.0/>

We have reviewed this material in accordance with U.S. Copyright Law **and have tried to maximize your ability to use, share, and adapt it.** The citation key on the following slide provides information about how you may share and adapt this material.

Copyright holders of content included in this material should contact open.michigan@umich.edu with any questions, corrections, or clarification regarding the use of content.

For more information about **how to cite** these materials visit <http://open.umich.edu/education/about/terms-of-use>.

Any **medical information** in this material is intended to inform and educate and is **not a tool for self-diagnosis** or a replacement for medical evaluation, advice, diagnosis or treatment by a healthcare professional. Please speak to your physician if you have questions about your medical condition.

Viewer discretion is advised: Some medical content is graphic and may not be suitable for all viewers.

Citation Key

for more information see: <http://open.umich.edu/wiki/CitationPolicy>

Use + Share + Adapt

{ Content the copyright holder, author, or law permits you to use, share and adapt. }



Public Domain – Government: Works that are produced by the U.S. Government. (17 USC § 105)



Public Domain – Expired: Works that are no longer protected due to an expired copyright term.



Public Domain – Self Dedicated: Works that a copyright holder has dedicated to the public domain.



Creative Commons – Zero Waiver



Creative Commons – Attribution License



Creative Commons – Attribution Share Alike License



Creative Commons – Attribution Noncommercial License



Creative Commons – Attribution Noncommercial Share Alike License



GNU – Free Documentation License

Make Your Own Assessment

{ Content Open.Michigan believes can be used, shared, and adapted because it is ineligible for copyright. }



Public Domain – Ineligible: Works that are ineligible for copyright protection in the U.S. (17 USC § 102(b)) *laws in your jurisdiction may differ

{ Content Open.Michigan has used under a Fair Use determination. }



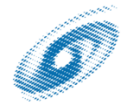
Fair Use: Use of works that is determined to be Fair consistent with the U.S. Copyright Act. (17 USC § 107) *laws in your jurisdiction may differ

Our determination **DOES NOT** mean that all uses of this 3rd-party content are Fair Uses and we **DO NOT** guarantee that your use of the content is Fair.

To use this content you should **do your own independent analysis** to determine whether or not your use will be Fair.

SI 678 Preserving Sound and Motion

Class 5 – Motion – Restoration Challenges



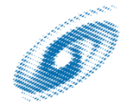
Themes

Themes

- What are motion pictures?
- What are we dealing with?
- Integrity and copying
- Restoration and reconstruction

“Restoration goes beyond the physical copying of surviving material into reconstruction of the most authentic version of a film.”

Gracy, *Film Preservation*, 2007.



• Usai, *Death of Cinema*, 2001.

What are motion pictures?

Themes

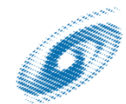
Motion

Media

Integrity

Restoration

- Optical and aural illusions
- Cultural construction of reality
- Evidence
- Documents



Motion picture media issues

Themes

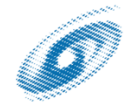
Motion

Media

Integrity

Restoration

- Base and binder
- Image and sound
- Film generations
- History of the film



Motion picture media issues

Themes

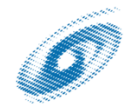
Motion

Media

Integrity

Restoration

- Cellulose nitrate – 1889-1950
 - Base gets brittle and degrades fast
 - Gelatin binder ages and distorts
 - Highly flammable
- Cellulose acetate – 1925/45 to pres
 - Base chemically decomposes
 - Vinegar syndrome
 - Unstable color dyes (orange hue)
- Polyester – 1955 to present
 - Stable base and silver (B&W)
 - Unstable color dyes



Motion picture media issues

Themes

Motion

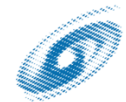
Media

Integrity

Restoration

- Film generations (handout)
 - Master (camera negative)
 - Inter-negatives
 - Duplicate negatives/positives
 - Positive prints

- History of the film
 - Production quality
 - Care and handling over time
 - Environmental conditions



Inspection and Edge Coding

Themes

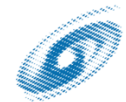
Motion

Media

Integrity

Restoration

- Inspection basics – handle once
 - Cans, rewind, view, document
- Edge coding (handouts)
 - Dating mechanism
 - “originals” versus prints/copies
- Power through inspection (Gracy)
 - Knowledge and fatefulness
 - Subjective nature of observation
 - Quality control perspectives
 - Politics of selection
 - Orphaned films



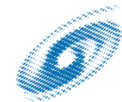
Cinema Sound



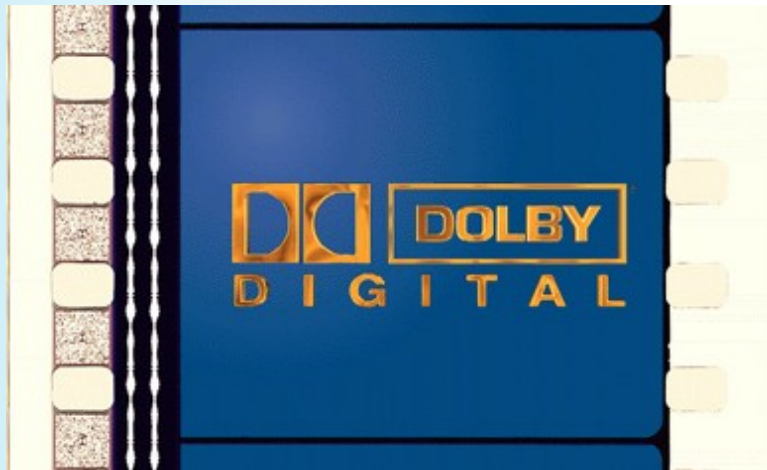
© PD-EXP

Publicity photograph of man using
Edison Kinetophone, ca. 1895
(Wikimedia Commons)

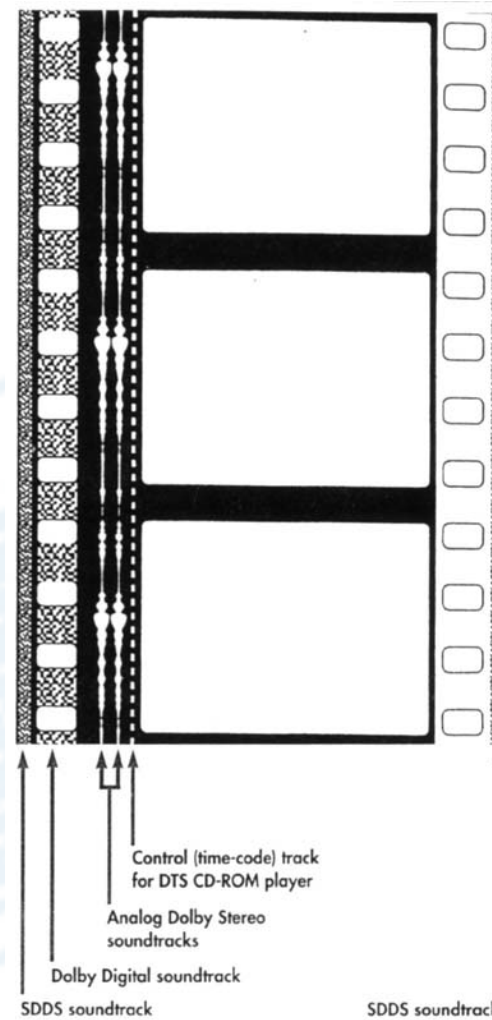
- 1913 – Edison Kinetophone
 - Separate sound system
- 1925 – Vitaphone
 - Great improvement of separate
- One track optical sound/film
- 1929 “The Broadway Melody”
- 1940 “Fantasia” multitrack
- 1971 “Clockwork Orange” Dolby
- 1982 “Return of the Jedi” THX



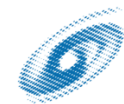
Digital/Optical Sound



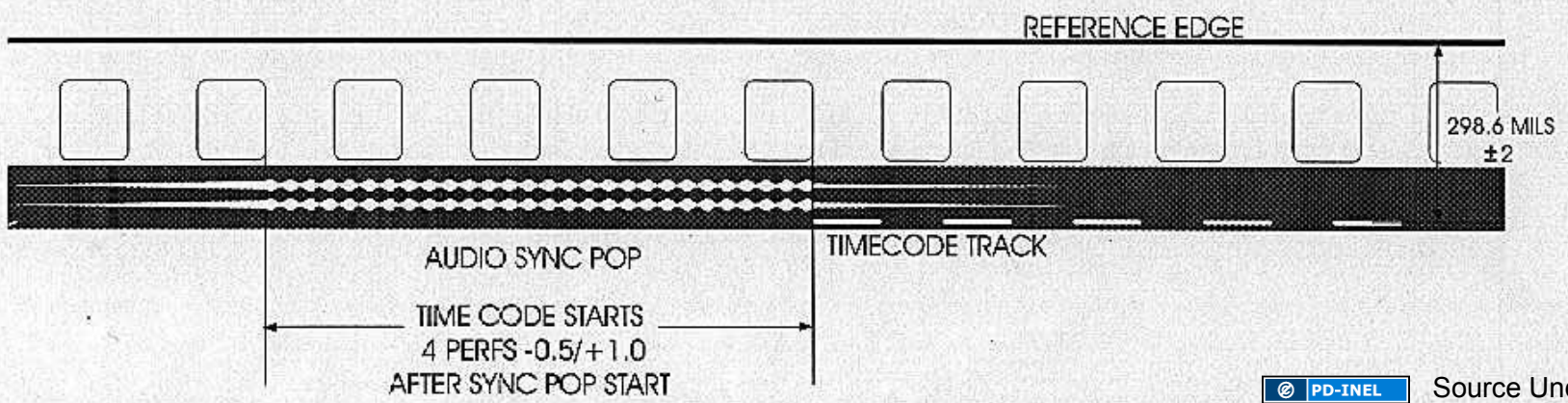
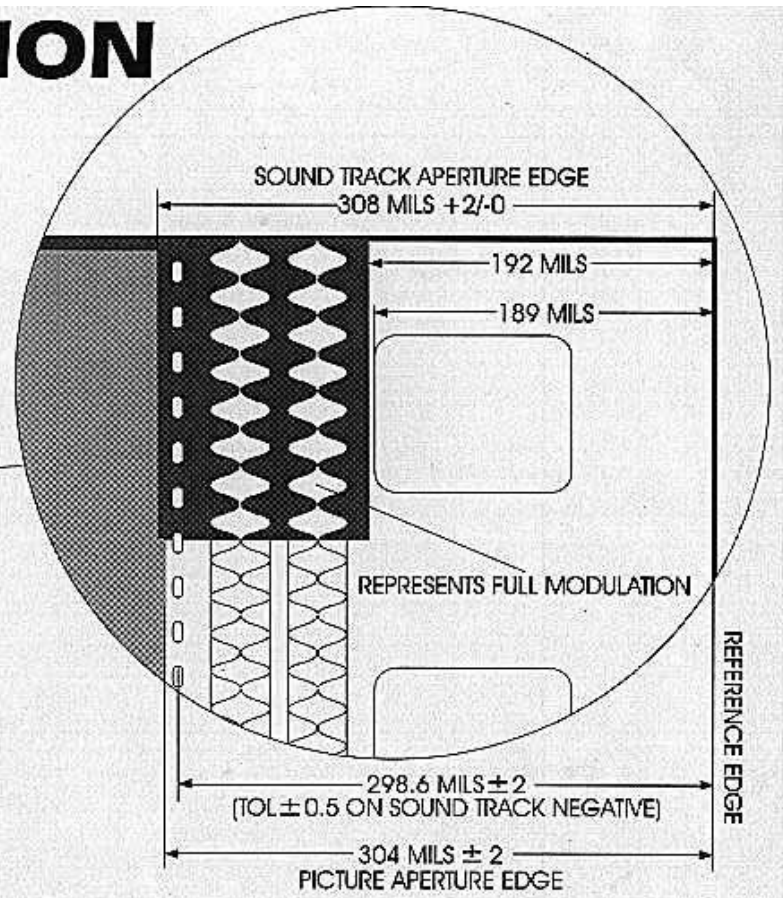
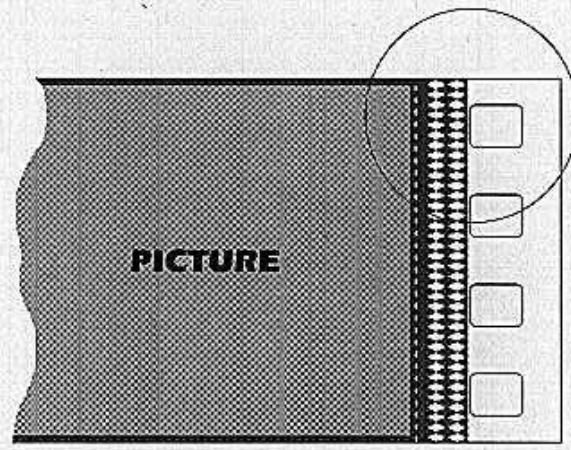
© PD-INEL Source Undetermined



© PD-INEL Source Undetermined



DTS TRACK SPECIFICATION



Preserving Integrity

Themes

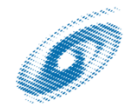
Motion

Media

Integrity

Restoration

- Archival perspectives (Duranti 1995)
 - Authenticity
 - Reliability
- Preservation perspectives
 - Loss of disparate parts
 - Loss of context
 - Loss of usability
- Ethical perspectives
 - Impact of actions taken on original intent
 - Maintenance or loss of quality and value



Restoration as a Strategy

Themes

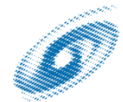
Motion

Media

Integrity

Restoration

- What is to be preserved
- Restoration intent (Read and Meyer, p. 71)
 - As is
 - As seen then
 - As seen later
 - As intended by maker
 - As meant for modern audience
 - Reworked new version
 - New commercial product
- Technical processes (duplication)
- Aesthetic decision making



Film preservation process

Color and culture

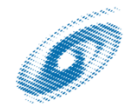
Film preservation

Colorization

Artifact and product

- Preservation versus restoration
- Relationship of film and art restoration (Cesare Brandi, 1963)
- Restoring the original (Eileen Bowser)
 - As handed down (as is)
 - As seen by audiences (as was)
 - As intended by director
 - To play well to contemporary audiences
 - As a rework

Busche: “After all, a restoration is a critical interpretation, not an artistic enhancement of the object.” (p. 8)



Film preservation process

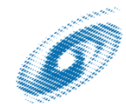
Color and culture

Film preservation

Colorization

Artifact and product

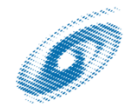
- Proper storage as foundation
- Duplication of film stock
 - Pre-inspection
 - Detailed preparation
 - Printing
 - Inspection and QC
- Restoration
 - Color correction (intent)
 - Assembly from multiple sources



Color restoration

Color and culture
Film preservation
Colorization
Artifact and product

- Documentation on film production and manufacture is an important part of the film’s context.
- Modern science in the service of authenticity
- Tension between authenticity and modern



Thank you!

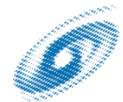
Paul Conway

Associate Professor

School of Information

University of Michigan

www.si.umich.edu



SCHOOL OF INFORMATION
UNIVERSITY OF MICHIGAN