MOVING IMAGE ARCHIVING & PRESERVATION PROGRAM
VIDEO RESTORATION LAB, H72.3403

Version #1: 9/16/09
Fall 2009
Wednesdays, 12:30 pm - 4:30 pm, 665 Broadway, Rm. 643. **PLEASE NOTE THE CLASSES ARE SCHEDULED IRREGULARLY AND DO NOT ALWAYS ALTERNATE WITH THE DIGITAL PRESERVATION CLASS.**

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GOALS: This class will give students direct experience with the process of re-formatting of analog video materials for preservation and access. Addressing in-house systems and work with vendors, the class will increase knowledge in areas of archival standards, prioritization and decision-making, source and destination formats, technical requirements and systems, preparation and workflow, documentation and metadata capture, quality assurance, and overall project management. Students will have hands-on experience with tape preparation and re-formatting using equipment in the MIAP Lab and will interact with experts from preservation vendors and other NYU departments.

EXPECTATIONS: Each student will do three assignments, as outlined below. Additional tasks may be required as we go through the course. Due to the compressed nature of this class, attendance at all classes is mandatory and the student must make arrangements ahead for classes missed, or in the case of illness and other unexpected absences, call and notify the instructor. Unexcused absences will affect grading. Grades will be based on a combination of class preparedness/participation (40%) and assignments (60%).

MIAP Digital Archive: In addition to assignments submitted in print form, all course papers/projects will be submitted in electronic form by the beginning of the class period on the due date. (Please also bring a hard copy to class on the due date.) Go to the Blackboard site for this class found under the "Academics" tab on the NYU Home site. Click on the Communication tab and then on Discussion Forum. You should see a link to your own individual forums. This is where you should upload your assignments.

Please submit word-processed documents as Rich Text Format files (.rtf). Your papers will be made part of the MIAP Digital Archive in a private space for faculty use, and on the MIAP web site, where appropriate. Please inform me of any papers that cannot be published on the web due to confidentiality restrictions or other reasons, or if you have other concerns about your work being posted. In some cases, the title of a paper will be published, but access to the paper will be restricted to selected MIAP faculty and staff. When electronic files are submitted, the file names must conform to the standard format (please see end of syllabus.)

Texts:
Required text is How Video Works by Marcus Weise and Diana Weynard, available at Shakespeare's Books on Broadway. Additional readings will be provided as handouts or are available on the web. Some texts will be ones that you have read in previous classes – please review those prior to class as a refresher. For texts on video from the 1970s and 1980s the following books are recommended (they are out of print):
Bensinger, Charles. The Video Guide. Santa Barbara, CA: Video-Info Publications. 1981.
Media Bus, Inc. The Spaghetti City Video Manual. New York and Washington: Praeger Publications. 1973.

Assignments:

Assignment #1
Researching System Components: Each student will be assigned a component part of the Video Lab system. Prepare a written description that explains the purpose of the component, its basic functions, salient features, its capabilities, etc. You may also need to explain terms, such as different inputs/outputs. Your audience should be other archivists and part of your motivation should be to de-mystify the technology. You may also find that you can make a recommendation as to whether it is an essential or non-essential item for a tape-to-tape or tape-to-digital re-mastering setup. Be prepared to summarize its functions and

features in class. Minimum 2 pages – but make it as long as you need. Due October 7.

Assignment #2
Students will work in several small groups to manage the preservation of one or more tapes through an outside vendor. The project will be discussed on Oct. 28 for delivery back from the vendor by the Dec. 2 class.

Assignment #3
Final project: Students will chose from a range of different topics to produce new content on video re-mastering for the benefit of the audiovisual preservation field in written or video form. Students may chose from their own interests or from a menu of projects presented by the instructor. More information will follow. Due December 2.

Helpful resources:

- Bachman, Rebecca, et al. "Glossary" in Video Preservation Resources on the web site of the Bay Area Video Coalition. San Francisco: Bay Area Video Coalition. 2003. Retrieved 1/19/05 at < http://www.bavc.org/preservation/dvd/resources/gloss.htm>.
- ScreenSound Australia. "Technical Glossary of Common Audiovisual Terms" in Preservation on the ScreenSound Australia web site. Canberra, Australia: ScreenSound Australia. 2000-2003. Retrieved 1/19/05 at <http://www.screensound.gov.au/glossary.nsf/Main/Glossary+Index?OpenDocument>.
- Vidipax. "Magnetic Tape Composition" in Magnetic Tape Preservation on the Vidipax website. n.d. Retrieved 1/19/05 at < http://www.vidipax.com/>.
- Vidipax. "Problems with Magnetic Tape" in Magnetic Tape Preservation on the Vidipax website. n.d. Retrieved 1/19/05 at < http://www.vidipax.com/>.
- Wheeler, Jim and Peter Brothers. "Video Preservation Fact Sheets." Los Angeles: Association of Moving Image Archivists. 2003. Retrieved 1/19/05 at <http://www.amianet.org/publication/resources/guidelines/videofacts/about.html>.

Please note: The Video Guide (see cites below) is also available on the web at http://videopreservation.stanford.edu/vid_guide/index.html

Class 1: September 16, 12:30 – 4:30 pm

These are follow-up readings for this class:

- Read: Martin, Jeff. "The Dawn of Tape: Transmission Device as Preservation Medium." *The Moving Image*. Spring 2005. p. 35-66.
- Suyaga, Hiroshi. "The Past Quarter-century and the Next Decade of Videotape Recording." *SMPTE Journal*. No. 101: 10-13. January 1992.
- "The VTR" in Bensinger, Charles. The Video Guide, 2nd ed. 1981. Santa Barbara, CA: Video Info Publications. p. 60-70.
- Recommended:
    - "VTR Interchangeability" in Bensinger, Charles. The Video Guide, 2nd ed. 1981. Santa Barbara, CA: Video Info Publications. p. 101-114.
    - Excerpt from Bensinger, Charles. The Video Guide, 2nd ed. 1981. Santa Barbara, CA: Video Info Publications. p. 236-238.
    - "Overview of Operations" in Weise, Marcus and Diana Weyland. How Video Works: From Analog to High Definition. 2004. Burlington, MA and Oxford: Focal Press. p. 207-221.
    - Research Technology International. The Videotape Cassette Care Handbook. 1999. Lincolnwood, IL: Research Technology International. p. 3-9. (handout)

Topics/activities:

- Introductions, syllabus review (20 min.)
- Roles and contributions of players in the video preservation workflow; relationships with standard-setting bodies and initiatives. (50 min.)
- Review of major historical changes in videotape technology (media and hardware) impacting the

playback and re-formatting process. How videotape has been recorded, played back and transmitted, details on the characteristics of video signals and related devices. (100 min.)

- ☒ Principles of an archival transfer; review of stages of preservation workflow and decision-making (40 min.)
- ☒ Discussion of Assignment #1 (10 min.)

Class 2: October 7, 4:30 – 12:30 pm

Due this class:

- ☒ Assignment #1 Researching System Components.
- ☒ Read: Read: Hocking, Sherry Miller. "Principles of Electronic Image Processing: Signals". Owego, NY: Experimental Television Center. n.d. Retrieved 1/16/05 at <http://www.experimentaltvcenter.org/history/tools/tools_texts.php3>
- ☒ "Electronic Photography"; "Scanning"; and "The Transmitted Signal" in Weise, Marcus and Diana Weyland. How Video Works: From Analog to High Definition. 2004. Burlington, MA and Oxford: Focal Press. p. 5-38.
- ☒ "Color Video" in Weise, Marcus and Diana Weyland. How Video Works: From Analog to High Definition. 2004. Burlington, MA and Oxford: Focal Press. p. 53-67.
- ☒ "Magnetic Media" in Weise, Marcus and Diana Weyland. How Video Works: From Analog to High Definition. 2004. Burlington, MA and Oxford: Focal Press. p. 161-173.
- ☒ Analog Waveform Monitors", Analog Vectorscopes", and "The Encoded Signal" in How Video Works: From Analog to High Definition. 2004. Burlington, MA and Oxford: Focal Press. p. 75-102.
- ☒ "Digital Theory"; "Digital Television Standards"; and "High Definition Video" in How Video Works: From Analog to High Definition. 2004. Burlington, MA and Oxford: Focal Press. p. 95-137.
- ☒ "Audio for Video" in Weise, Marcus and Diana Weyland. How Video Works: From Analog to High Definition. 2004. Burlington, MA and Oxford: Focal Press. p. 193-205.
- ☒ Optional:
    - "Timecode" in Weise, Marcus and Diana Weyland. How Video Works: From Analog to High Definition. 2004. Burlington, MA and Oxford: Focal Press. p. 183-191.
    - "TV Technology" on the web site The Pamela Nash Experience. Retrieved 1/25/06 at http://archive.whoniversity.co.uk/tech/index.html
    - Sencore. "Sencore Tech Tips: Comparison of VCR Formats". South Dakota: Sencore. Retrieved 09/04/07 at http://catalogs.infocommiq.com/AVCAT/images/documents/pdfs/TT189%20-%204611.pdf

Topics/activities:

- ☒ Discussion of concept of signal flow in a re-mastering workflow through work with the lab equipment. Using the research done by each student, students will gain an understanding of the role of various components in workflows. Where are the critical points for monitoring to ensure safety of the materials and integrity of the transfer? Where are key points where failures can occur in systems, operations and/or media? (90 min.)
- ☒ Overview of the needs and opportunities for capturing metadata throughout the workflow. (40 min.)
- ☒ Practice reading signal flow diagrams and creating various signal flows for creating preservation masters and access copies. Practice interpreting analog signal characteristics with the use of monitoring equipment. (90 min.)

Class 3: October 14, 12:30 – 4:30 pm

Due this class:

- ☒ Tektronix. Waveform Monitor Techniques, Vectorscope Techniques, and Setting up a Genlocked Studio in "Video Measurement: The Basics", Retrieved 9/6/07 at http://www.tek.com/Measurement/App_Notes/NTSC_Video_Msmt/25W_7247_1.pdf

- ☒ Lacinak, Chris. "Reformatting: Terminology, Intent and Practices". MIC Website, 2004. Retrieved 10/10/07 at http://mic.loc.gov/preservationists_portal/presv_reformtg
- ☒ Martin, Jeff. "Curriculum Module: ¾" Umatic Videotape." 2007. (this module, created for MIAP, will be on the Blackboard site.)
- ☒ Recommended (for audio):
    - McKnight, John. "Tape Reproducer Response Measurements With a Reproducer Test Tape". Journal of the Audio Engineering Society. Retrieved 9/6/07 at http://home.flash.net/%7Emrltapes/mcknight_tape-reproducer-response.pdf
    - Obtaining an Accurate Transfer (pp. 8-10) and Configuring, Calibrating Playback Equipment (pp. 21-23), and Configuring and Calibrating Playback Equipment (pp. 28-30) in "Capturing Analog Sound for Digital Preservation: Report of a Roundtable Discussion of Best Practices for Transferring Analog Discs and Tapes". 2006. Washington, D.C., Council on Library and Information Resources and Library of Congress. Retrieved 9/6/07 at http://www.clir.org/pubs/reports/pub137/pub137.pdf

Topics/activities:

- ☒ Preservation vs. restoration v. enhancement in practice – how is a flat transfer achieved for dynamic media? Concepts and practice with setup of video and audio equipment and video re-formatting systems, including alignment, calibration, setting levels, and the role of reference signals. Function and use of time base correctors, audio gain stage devices and other equipment for signal monitoring and adjustment in the workflow. (2 hours)
- ☒ Part 1: Dealing with tapes that need treatment. Overview of tape problems revealed from inspection/initial playback, and treatment methods, including use of a dehydrator and "cleaning machines." Practice with the tape cleaner in the Bobst lab. (60 min.)
- ☒ Overview of Bobst re-mastering lab in contrast to the MIAP Video Lab. (40 min.)

Class 4: October 19, 12:30 – 4:30 pm

Joint class with Chris Lacinak emphasizing practice with the re-formatting process, as well as preparation for our trip to Rochester and Buffalo. Details in the coming weeks.

- ☒ Review:
    - AJA Data Rate Calculators:
    - For Mac OSX: http://www.aja.com/ajashare/AJA_Data_Rate_Calculator_v2.app.tar
    - For Windows: http://www.aja.com/ajashare/AJA_dataratecalculator_win_10-5.zip

Class trip to Rochester/Buffalo: Thursday Oct. 22 – Sun. Oct. 25

Class 5: October 28, 12:30 – 4:30 pm

Due this class:

- ☒ "All About Videotape" in Bensinger, Charles. The Video Guide, 2nd ed. 1981. Santa Barbara, CA: Video Info Publications. p. 71-75.
- ☒ Review: Spec Bros. "White Paper: Basic Inspection Techniques to Sample the Condition of Magnetic Tape" on the web site of Spec Bros. Lodi, NJ: Spec Bros. 2002. Retrieved 1/25/06 at http://www.specsbros.com/whitepaper.html.
- ☒ Excerpt of "Chapter 4" in White, Gordon. Video Techniques. 1982. London, Sydney, Toronto, Wellington, Durban and Boston: Butterworth and Co. p. 103-116. (handout)
- ☒ Van Maaslen, Kara. "Bobst Video Preservation Lab RTI VT-3100 3/4" U-Matic Cleaning Machine: Tips and Guidelines" in the Student Papers section of the web site of the Moving Image Archiving and Preservation Program. 2006. Accessed 2/3/07 at http://www.nyu.edu/tisch/preservation/program/student_work/index.shtml
- ☒ Bigourdan, Jean-Louis, Jame M. Reilly, Karen Santoro and Gene Salesin. The Preservation of Magnetic Tape Collections: A Perspective. Rochester, NY: Image Permanence Institute. 2006. Accessed 9/8/08 at http://64.233.169.104/search?q=cache:jCwVQCMGSu0J:www.imagepermanenceinstitute.org/shtml_sub/NEHTapeFinalReport.pdf+The+Preservation+of+Magnetic+Tape+Collections:+A+Perspective+ipi&hl=en&ct=clnk&cd=1&gl=us&client=firefox-a
- ☒ Lacinak, Chris. "Project Outsourcing: Navigating Through The Client/Vendor Relationship To

Achieve Your Project Goals". 2006. Retrieved 10/10/07 at http://www.avpreserve.com/resources.html

- ☒ Library of Congress. "Illustrative Example of a Statement of Work: Typical Elements for Use in a Statement of Work for the Digital Conversion of Sound Recordings and Related Documents" 1999. Retrieved 10/10/07 at http://www.loc.gov/rr/mopic/avprot/audioSOW.html
- ☒ Graft, Donald. "Data Rates and File Sizes" Retrieved 10/10/07 at http://neuron2.net/LVG/ratesandsizes.html

Topics/activities:

- ☒ Part 2: Dealing with tapes that need treatment. (75 min.)
- ☒ Preservation re-formatting planning and the costing of projects. Pros and cons of in-house re-formatting and outsourcing and the readiness of organizations to manage in-house re-formatting. Preparation for sending selected videotapes to designated vendors. (55 min.)
- ☒ Guest speaker: Chris Lacinak: Outsourcing – concepts and practice with statements of work and work orders, and guidelines for working with vendors. (90 min.)

NO CLASS NOVEMBER 4 - AMIA

Class 6: November 18, 12:30 – 4:30 pm

Topics/activities:

- ☒ Continuation of practice with the reformatting and metadata capture process (1 hour 40 min.)
- ☒ Diagnosing and addressing playback defects. (90 min. hours)
- ☒ Check-in on Assignment #2

Class 7: December 2, 12:30 – 4:30 pm

Due this class:

- ☒ Assignments #2 and #3
- ☒ SMPTE. RP-166 Critical Viewing Conditions for Evaluation of Color Television Pictures. (full cite coming)
- ☒ Lacinak, Chris. "Quality Assessment of the Digital Surrogate". 2007. Retrieved 10/10/07 at http://www.avpreserve.com/resources/AVPS_QC_Surrogate_Distribute_PDF_notes.pdf and http://www.avpreserve.com/resources/AVPS_QA_QC_Considerations.pdf

Topics/activities:

- ☒ Quality assurance and control. Report-outs on re-formatting projects. Comparison of various files and tape preservation masters to source tapes; updating of metadata in source database, etc. (1 hour 40 min.)
- ☒ Presentation of final projects (2 hours)
- ☒ Wrap-up

File submission format:

year semester_class number_author' s last name_assignment number.extension

Example: 05s_1800_Smith_a1.doc

For multiple authors, the two initials of each author will be used, separated from each other by underscores. An underscore and the assignment number will follow this. Assignment numbers are determined by the order in which the assignments are given. They begin with an 'a,' followed by a number between one and ten. For assignments with multiple files, a letter can be added after the number. Thus, one could have 'a1b,' meaning that this is the second of multiple files from one student for one particular assignment. If a student decides to withhold her work from being freely available online, she may alert the professor, as well as by adding "_x " after the assignment number in file name:

Example: 05s_1800_smith_a1_x.doc

Otherwise, permission shall be implicitly granted for the student’ s work to be posted on the digital archive website.