

The Media Conservation Facility At The ABC Television Network

Abstract

A new facility dedicated to restoration and re-recording of videotapes "at-risk" of loss has been built at the ABC-TV Network. This Media Conservation Facility is described here.

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The Technical Facilities

In 1994, ABC began construction of a 2000 sq. ft. video tape center to be dedicated to the restoration and preservation of the company's oldest video tapes. Known as the Media Conservation Facility, or MCF, the facility will comprise two operations, a Screening Center for the viewing of tapes to determine if the complete tape is to be preserved, or if sub-segments of the whole are to be kept. The other operation is the Dub Center, comprising various facilities dedicated to physical and electrical restoration of the tapes and the re-recording to new stock.

The Screening Center

The ABC Network collection comprises approximately 1 million videotapes of various lengths. Many of these tapes are News field cassettes dating from the mid-1970s, with 20 and 30 minute lengths. These tapes typically have much extraneous material recorded on them. To preserve only that video of continuing and future value these tapes will be screened to identify those portions to be reproduced on new stock.

To efficiently preview and locate scenes to be saved a Screening Center is under development. 6 Screening Stations are being built, each comprising the necessary videotape machines- typically one U-matic and one Betacam VTR, picture monitors, and a computer to manage the process. The equipment will be installed into an ergonomically comfortable workstation environment, owing to the long hours of viewing tapes. Working with a custom control & monitor software application, the screening operator will use a combination of jog knob and keyboard controls to efficiently process the tapes.

The screening process will involve watching each tape, sometimes scanning ahead at faster than normal, using a carefully defined set of editorial criteria to identify those portions of the tape to save. The computer will use control track and time code information from the tapes to create a list of edit in- and out-points for each tape. In the case of those early video tapes without timecode, the system will record new timecode at the edit transition points for later use by the archiving recorders. The edit information file for each tape will be placed in a computer database for subsequent use by the Dub Center's editing equipment.

The screening process offers the company the ability to efficiently select and eliminate material of no archival value. Once the tape has been screened, it will be sent to the Dub Center for reproduction. Using the previously created screening database file, the editing equipment will automatically record the desired subsections of the tape onto new master tapes. The computer system will also manage the placement of the various short segments from these tapes on to new 60-minute master tapes.

The Dub Center

The main component of the MCF is the Dub Center. A tape center dedicated to making copies of tapes at-risk of loss. It is a self-contained facility comprising non-technical areas such as a manager's office, a meeting and break room, and tape storage room. The technical areas are the Equipment Center, Dub Control rooms, and the Maintenance shop.

Modeled after a post-production suite, the tape machines and other technical hardware is housed in a central equipment room. The MCF operators will control and monitor the equipment from control rooms located adjacent to the equipment center. The control rooms, providing acoustical and lighting isolation from the equipment, will permit the MCF operators to monitor multiple simultaneous dubs in an environment suitable for critical viewing and listening.

The MCF is configured for 3 operators, who monitor and control on-going recording operations from the 3 Dub Control rooms. Each operator will supervise up to four simultaneous dub operations. Automatic monitoring systems will also monitor each recorder, alerting the operator to video or audio problems, such as excessive uncorrectable dropouts, that occur during the recording process. Central to the MCF's efficiency will be use of custom editing software that will permit the operators to quickly stop, analyze, repair, and then restart a problematic dub at any point during the recording time, without the need to begin at the start of the tape.

Video Tape Formats

At this time ABC has elected to reproduce material on videotape, as the most cost-effective medium available today. Two copies are being made of each source tape. The working library copy, available for circulating use at ABC, is a BetaCam analog tape. The Archive copy, destined for an off-site preservation storage facility, is a D2 digital tape. The D2 copy will permit future generations to make lossless digital copies to future media for perpetual preservation. During this first and only analog to digital conversion, noise reduction techniques shall be used to optimize the permanently quantized image.

The MCF will work with all professional tapes formats that have been used by the Network. See Chart 1 for the planned mix of the MCF's tape machines. The MCF is presently planned to grow in stages over the years. The maximum system capacity involves 41 videotape machines. As new media formats emerge in future years, eventually the D2 copies may be replaced by another digital storage medium.

The MCF will also be involved in physical restoration of videotape. Older tapes that have physically deteriorated with time shall be treated to cleaning and other mechanical processing to remedy the problems caused by the continuous chemical breakdown of the tape itself.

While the vast bulk of the ABC collection is on videotape, a significant amount of news film and other programs remain stored on their original 16 and 35mm film stock. These materials date back to the early 1960s, and are not considered "at-risk" of loss at this time. The MCF may add film restoration and reproduction to its capabilities. This will come after a significant portion of the seriously at-risk videotapes have been safely preserved.

CHART. 1	VIDEOTAPE MACHINES AT THE ABC-TV MCF			
Tape Format	Machine Model	Number	Planned for	Planned
		Owned Now	Standby	Operation
QUADRUPLEX (2")				
	Ampex AVR-1	6	4	2
	Ampex AVR-2	1	1	0
	Ampex AVR-3	0	2	0
	Ampex VR-2000	1	0	1
TYPE-B (1")				
	BOSCH BCN-50	2	1	0
TYPE-C (1")				
	Ampex VPR-2B	4	2	2
	Ampex VPR-3	0	1	4
U-Matic (3/4")				
	Sony BVU-920	7	0	7
	Sony BVU-800	2	2	4
	Sony VO-5000	0	1	1
BetaCam (1/2")				
	SONY BVW-75	2	0	12
D2 (DIGITAL)				
	SONY DVR-20	2	0	12
	SONY DVR-28	1	0	0
VHS (1/2")				
	Panasonic	0	0	4
		TOTAL>>		49