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## **Digitizing the Past**

### **Newsfilm Digitization Guideline with 3 Cases and 3 Tips**

“Would the civil rights movement and the peace movement against the Vietnam War have entered so many American lives without television news? Perhaps, but certainly not as fast and as not as dramatically and persuasively, day after day, with images and words that only television can convey.”

- Report of the Librarian of Congress Television and Video Preservation 1997

Newsfilm is television footage that was shot on 16mm film, which mostly was common during the 1950s and 1970s, whereas video system did not penetrate 100% to all news stations in the U.S. up until fairly recently since its advent in the end of 1956.<sup>1</sup> As mainly the video system was not affordable, and more likely it did not appear that much familiar and handy to many local news stations, people in broadcasting field<sup>2</sup>, film could have been occupying the major format position as broadcasting system until the early 1980s. The biggest field, that newsfilm as the archival collection has been beneficial to, is educational field.<sup>3</sup> “Archival holdings of television and video materials have enormous educational and cultural value as recognized in the American Television and Radio Archives Act and underscored by the testimony of educators who participated in the public hearings for newsfilm preservation.”<sup>4</sup> In addition, commercial field such as documentary and broadcasting production, inserting newsfilm, also has to be noted.

However, the way newsfilm has been managed is not responding to its values. It usually suffers obsolescence in many ways—not only format obsolescence itself, but also

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<sup>1</sup> For example, the KCRA Newsfilm collection at the Center for Sacramento History covers from 1959 to 1982.

<sup>2</sup> “Broadcasters used film in several critical areas. First, cameramen used 16mm footage to cover news events in the field, and subsequently editors selected and cut the footage for use as clips or inserts in newscasts. (...) In addition, broadcasters also purchased newsfilm from newsreel companies and news film services.” - Report of the Library of Congress Television and Video Preservation, October 1997

<sup>3</sup> As university is the second largest type of the organizations with newsfilm collections, next to historical according to Report of the Library of Congress Television and Video Preservation, October 1997

<sup>4</sup> Ibid.

obsolescence by oblivion. News production environment has been inclined to only care for producing not for preserving in an ordinary rush to meet the daily deadlines with the very limited human resources. In many cases of their moving facilities to other location, stations prefer throw films away, leaving only a very limited number of newsfilm rescued<sup>5</sup>. Even after being taken by archival organizations, newsfilm had to suffer the difficulties in access as film is not a user-friendly consumer format. More understanding newsfilm could be possible in contrast with the news reel, which is the packaged 10-minute or so updates and reels created to be projected in film theaters before the movie. Even though it used to be released at earlier times than newsfilm—between 1920s and early 1950s, we often witness more cases of well-managed news reel collections than well-managed newsfilm. Being 35mm, news reels are likely to be in better physical shape and to be put more importance for archival care.

These observations above lead newsfilm collections to the field of digitization. The blissful benefits digitization can offer to newsfilm is the equal convenience to other consumer formats such as VHS and DVD—simply, the way easier access. It perfectly meets the educational need. In several hearings about newsfilm conducted by the Library of Congress in 1997, “educators described a compelling need for access to the American television and video heritage for research and teaching. In contrast, they also stated numerous obstacles that prevent real access, including significant losses, restrictive network policies, unavailability of original sources, expense of purchasing copies and electronic equipment, and lack of regional or local access”<sup>6</sup> It is not surprising to observe that many newsfilm digitization projects stemmed from educational purpose. Television news is similar to newspaper but with moving images and sounds. Newspaper sitting in the libraries can obtain big enough value without digitization as long as it is accessible to fairly many people<sup>7</sup>. However, newsfilm sitting in the shelves do not mean almost anything. More importantly digitization practically helps promoting the funding. Many federal grants and funding from private foundations tend to be awarded upon the condition of providing

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<sup>5</sup> “Harry Sweet, a local news cameraman who worked in the Sacramento area, is one of the genuine rescuers of this heritage. He persuaded KCRA to donate nine million feet to the Sacramento History Center. Upon learning that KOVR’s news film was scheduled to be thrown out when their station moved to new facilities, he rescued six million feet, 1967-1981, for the California State University at Sacramento.” – Ibid.

<sup>6</sup> Ibid.

<sup>7</sup> “Much of the value of newsfilm stems from the fact that it is—and remains—a contemporary record of events, in some ways similar to newspapers. However, it possesses two dynamics that no newspaper can possess: moving images and sound. Moving images enhance the concept of ‘how it looked’, and sound (even if the sound is simply an added commentary) can convey much about the ‘feel’ of the period.— BUFVC/ITN Archive Scoping Study Final Report, November 2003

access as deliverables. In addition, offering the access to general public by Internet is the fastest way to increase the visibility, licensing, and the archive's direct income. Lastly, digitization becomes almost the only solution to rescue newsfilms in poor physical condition. It can be compared to the film-to-videotape transfer, which is literally reducing life expectancy of the content by putting it into such an obsolete format—even more obsolete than film. The following is the case study about three newsfilm digitization projects from three different countries with three different conditions.

### **Case# 01: Newsfilm online – BUFVC**

Originated from the £2.28 million JISC fund (with £150,000<sup>8</sup> for 10 month scope study) for encoding and delivering online newsfilm content, Newsfilm Online launching project was performed from 2004 and 2006. Its goal is to provide a resource for the UK Higher and further education community, which is rather educational than archival. Performed mainly by the British Universities Film and Video Council with the Independent Television News (ITN) Archive, this project was digitizing over 3,000 hours of news stories, which is equal to approximately 60,000 items from ITN/Reuters collections. This, however, is a small percentage of the estimated 130,000 hours of news currently held in the ITN/Reuters archive. It would be feasible assumption that there must have been intervention of prioritization issues.

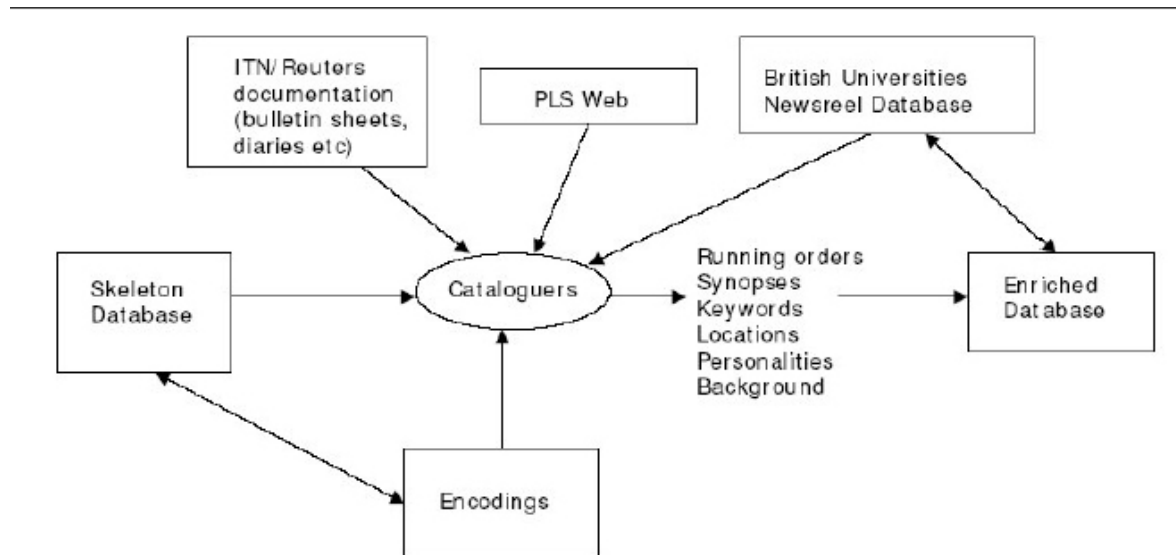
Not all original sources are on film format. There are more than 1000 hours 1” tapes in different types, 979 hours of BetaSP/DVD, and 875 hours of film. These various format is encoded to MPEG2 format at a target data rate of 8Mps, which is the sub-master, which can also be used for transcoding to higher encoding standards such as the MPEG4. However, unlike other formats, film items have the telecine process before being encoded to MPEG4. Between 850 and 1,000 hours of film materials need to be digitize and an hour film needs 4 hours to get done. This process for film was done partly at ITN's own system and rest of it at Newsfilm Online's in-house lab. After creating sub-master, the following process is for making two end user format files—Windows Media Players at 768 Kbps and Apple QuickTime at 768 Kbps. In its usual work flow, there are 12 people<sup>9</sup> including five, allocated to metadata cleaning and creation, where as the actual encoding technicians are two. Relatively serious concentration on metadata cleaning and creation is detected in this

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<sup>8</sup> This included the purchase of encoding equipment and the employment of three staff.

<sup>9</sup> 1 project leader, 1 head cataloguer, 4 cataloguers, 1 researcher, 1 web/database officer, 2 encoding technicians, telecine operator. - BUFVC/ITN Archive Scoping Study Final Report, November 2003

workflow. As be confirmed from the metadata workflow chart below, the whole process is able to be re-mapped by putting cataloging in the center; all the participating parties are required to work closely with catalogers.



**chart 1. Metadata flow chart for Newsfilm Online**

Access of digitized materials is available for subscribing institutions free of charge for five years. All content is downloadable, allowing users to edit to edit material to suit their educational needs from Newsfilm Online website (<http://www.nfo.ac.uk/>) For avoiding copyright infringement, all the end user format products have embedded DOG (water mark) on it whereas the sub-master, MPEG2 does not.

### **Case# 02: Images for the future**

To offer ultimate accessibility to users the Netherlands’ audiovisual heritage, Netherland institute of Sound and Vision has been digitizing contents from several archival institutions—Audio visual archive, Polygoon newsreel archive, Film archive of the RVD, Film and science foundation, Small gauge film museum. . €154 million budget for this project came from the Fund for the reinforcement of Economic Structure. The total size Images for the future is dealing with is 137,200 hours of video, 22,510 hours of film, 123,900 hours of audio, and 2.9 million photos. As this project stretches between 2007 and 2014, average 3,000 hours moving images per year is being digitized. Among this enormous amount of materials, newsfilm from two different collections occupies a part—the POLYGOON and the other broadcast collection. The former is comprised of various historical enterprises that commercialized cinema newsreels in 35mm nitrate, covering

from the late 1920s to the early; and the latter consists of 16mm reversal film materials and 16mm farther-down-the-line generation copies from various national and international news sources.

There are two different workflow for film—one about HD, and the other about SD. In terms of HD process, DPX is utilized for video (with 10 bit log RGB or single channel BW), BWAV for audio (24 bit linear PCM, 48kHz sample rate) and timecode track in material package MXF. Also, they are using LTO4, only as a temporary means. As for SD, Digibeta is employed as the bridge format. Most of the newsfilm (such as broadcast collection) materials are included in SD and SD process is holding a digibeta as the bridge format. HD is scanned on Spirit Telecine at Ascent 142 on Scanity in-house, while SD scanned on Spirit telecine at Ascent 142 at London. As for the filenaming, Global Unique Clip Identifier (GUCI) is used as documented for the entire public broadcasting system of the Netherlands. Every file links to a clip described in our database system, called iMMix, so that each reel of film can have several files coming from it.

Access to materials from this project is not yet available online but at least the database is researchable.

### **Case# 02: University of Georgia**

The Walter J. Brown Media Archives & Peabody Awards Collection in University of Georgia Libraries has being awarded 'Save America's Treasure' Grant (\$300,000) for creating Civil Right Digital Library (CRDL). Therefore its goal is about more access to members of the university and the general public, putting more emphasis on educational purpose. In addition, the archive could have equipped with in-house digitization system from this fund. It is for 5 million feet (= 2,200 reels) in WSB, approximately. 500 reels in WALB, and nine reels in WRDW. This project is transferring files to ProRest422 AVI, the DV quality format utilizing in-house system. After consumption of the initial fund from Save America's Treasure' fund, they still keep digitizing materials, consuming the annual budget for the archive. Basically, this is an on going project till the moment when every single material in their newsfilm collections gets digitized.

Their work flow is fairly similar to other newsfilm cases. After being cleaned, film is compiled into a bigger reel to be digitized as a full reel. They are using TP-66, rebuilt for 16mm transfer, and purchasing Flashscan in 2011. Separated into individual items from the digitized big reel using Final Cut Pro in in-house Apple Lab, files are on a SAN/LTO. As they upload every file they digitized onto Internet, the number of clips available from

Internet is being increased.

### **Tip# 1. Workflow**

One of the most important rules, which need to be observed, is the proper allocation of resources to prepping films stage. Even though newsfilm digitization would not follow the entirely special trajectory compared to other moving image materials, there exists relatively different tendency only from the newsfilm collections, which is almost all about preparation level. It tends to be a mingled with lots of unmarked clips, heavy deterioration, missing items due through repeated and unauthorized use in the past. In addition, the existence of the composite magnetic strips on films and/or the separate magnetic sound track in the same can as the image is unfavorable to preservation<sup>10</sup>, given the fact that magnetic tracks have propensity of faster and severer deterioration. In conclusion, newsfilm in general could be a tremendously chaotic collection that needed a massive amount of man hours for cleaning, synchronizing, sorting out, and eventually, prioritizing.<sup>11</sup>

Minimizing the redundancy and maximizing the efficiency is essential on designing the workflow. Especially on newsfilm digitization, it might be stated about no need of the bridge format in other video format. Many cases of having bridge format of video such as beta are easily detected; however, the tendency of increasing the storage affordability and state of the art technology also needs to be thoroughly considered. For example, digibeta as master in digitization process is not an archival activity since. On the contrary, it is eventually equal to migration to another obsolete format. Even though migration is always required in any digital archiving, moving image in digital file can be managed with other digital data.

Lastly, most archivists who experienced digitization process of their newsfilm collections admit that digitization followed by providing the open access by Internet helped a lot increasing collection's visibility, users, and income from licensing. Also, as the most newsfilm collections in general are likely to be fairly big in terms of the size and to cover

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<sup>10</sup> "Film sound poses a problem for television preservation because of the widespread use of magnetic sound on film, which was never copied to optical sound. (...) the preprint exists as film negative or original reversal accompanied by a separate magnetic sound track, unfortunately often stored in the same can. A magnetic stripe sound track on Ektachrome is essentially a thin coating of ferrous oxide. (...) as the film sound track ages, the oxide gases act as a catalyst in the process of acetate deterioration." - Report of the Library of Congress Television and Video Preservation, October 1997

<sup>11</sup> "Important items are intermixed with ephemera. Prioritization and preservation planning become impracticable. The risk of loss of damage to unique copies is ever present" – Ibid.

broad time period, you may want to upload already digitized materials first in the long process of digitization project.

### **Tip# 02. Technical specification**

The advent of the digitization technology turns out to be such a blissful event to newsfilm materials. Newsfilm is originally shot to be watched from the relatively small viewing station, a television. Unlike the feature film, access to Internet, using a computer monitor as the viewing platform, therefore, hardly hurts the television material's original way of being seen. The final and/or master format in digitization project does not have to provide the ultimate quality—no better quality than HD/2K since broadcast-compatible video format at best is the most likely to be sought.

Of course, like any other digital preservation, sustainability and universality in format-wise is crucial. People tend to use more open standards encoding methods such as MPEG and same as the Internet access format—i.e., providing the most common formats usually. If your digitization project is for long-term preservation and handier access at the same time, SAN, Nearline storage planning is almost mandatory.

### **Tip# 03. Metadata management**

There is the report about instability of dye-fading of Ektachrome color film emulsions<sup>12</sup>, which is very relevant to newsfilm since it was predominantly used in newsfilm production field from the late 1960's through the 1970's while the major studio used Eastman color negative. Therefore, newsfilm collections, especially from 1960's and 1970's, should grab a certain level of priority for any archival activity. The importance of robust database with the pertinent metadata in prioritization process cannot be overly emphasized. As Internet access is almost always pertained to digitization, database also needs to be relatively open to public, and to be as clean and well-managed metadata as it can be. Platform for digitized materials cannot be available if there is no proper related database, neither. Also, while digitizing your newsfilms you will need to embed the proper metadata on your digitized files. So metadata management over the whole workflow has to be sophisticatedly planned and performed.

However, managing metadata for newsfilm is unavoidably demanding and time-consuming if there were no plan for digitization. It being produced by the news station with

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<sup>12</sup> “if it has not been placed in cold storage, (it) is probably already faded beyond 30% as the least stable, yellow dye is first to fade beyond recovery.” – Ibid.

limited environment, metadata along with contents cannot be expected to be kind enough. As a result, enough time and human resources need to be allotted not only to preparation of the materials but also the metadata management. Consistency in file naming and titling, which is exceedingly important when you create several derivatives from one original item, can also be secured by metadata management.

Many archives with digitized newsfilm have been utilized their projects as the chance to clean and re-organize their already out dated database. For instance, University of Georgia archive is cataloging stuffs on the specific database, developed only for newsfilm. Given the character of the newsfilm, putting several fields for person information is very brilliant move—distinction between ‘person in this clip’ and ‘person mentioned in this clip’.

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