

ABSTRACTS (in pdf)

Digital restoration of soundtrack. "Halka" as a case study

Jakub Stadnik

With any restoration project, firstly the type and physical condition of all the available analog media must be considered. "Halka" appeared to be very unique from the digitisation point of view, due to original audio materials which were the tone negatives from 1932. The tone negatives digitisation process always demands a special approach, that will be discussed and illustrated by some examples. In the second part, the author will focus on making aesthetic decisions about what the restored sound could and should be. This will be the opening for the following discussion about the art of audio restoration.

„Halka” – The history of sound production

Michał Pieńkowski

The period of transformation of silent cinema into sound movie was one of the most interesting in the history of cinematography. "Halka" (dir. Konstanty Meglicki, Poland, 1929) is a unique example of experimenting with film sound. Originally the film version of this most important Polish opera was shot as a silent movie, however two years later, the sound version was produced. Not only melodies were found on the soundtrack from the opera. In the example of „Halka” I will present how the music was treated in this interesting period in cinematography.

Digitisation and restoration of the first integral tripack colour film Kodachrome original reversal historical records

Miloslav Novák

Reversal Kodachrome was the first integral tripack subtractive colour film stock from 1935 in the world. Both amateurs and professionals appreciate the originals for its fabulous sharpness and outstanding colour reproduction, due to very thin emulsion layers since Kodachrome films contained no colour dye couplers, but these were produced during lab processing. Kodachrome reversal originals preserve not only the art of cinematography or photography, but further historical events as the colour slides of the German passenger airship Hindenburg fire in 1937 and the first climbers Edmund Hillary and Nepalese sherpa mountaineer Tenzing Norgay, who are confirmed to have reached the summit of Mount Everest in 1953. Or an 8mm movie which recorded American president John F. Kennedy's Assassination in 1963.

In the presentation, I will introduce a significant part of Czech researcher Karel Schinzel for Kodachrome creation in the 1930's in opposition to an event which could have potentially signified the end of cinematography. Since in 2010, Eastman Kodak, as the last and the most important colour film stock manufacturer in history, stopped Kodachrome production, which led to researcher reduction and the demolition of the building nr. 53 Eastman Business Park in Rochester on the 19th

of July, 2015. Next, we will discuss the first unique 16mm Kodachrome reversal originals of important Czechoslovakian events from 1937 to 1945, including historical shots showing the exiled Czechoslovak Government or Czechoslovakian Armys' private and public life, that has been digitized and restored. Last but not least, I will present the shared experiences of several principal Czech film and photo heritage institutions and universities. During the comparative research project I focused on 'Kodachrome restoration and digitisation methodology', which allows optimal colour management and set-up of film and photo heritage scanners with reference to spectral sensitivity of scanner image sensors and light sources characteristics as well as Kodachrome diffuse spectral densities.

The sound restoration of Károly Makk's Love (1971) – a case study

Márton Moldován

In every restorer's life there comes a moment, when he/she has to realize that technical perfection can actually be detrimental to artistic value. Károly Makk's 1971 Love is arguably one of the high points of Hungarian cinema, but restoring it was as confounding as it was, in the end, rewarding.

The primary audio source was the original 35mm magnetic tape. While beautifully mixed and exceptionally well preserved, it contained annoyingly inconsistent background noise which was to be masked out by the much higher noise floor of the optical sound track. It was just a little too perfect rendition of imperfect recording conditions. On the other hand, dialog synchronization proved less accurate due to stylistic reasons as well technical ones. This effect too, was lessened on the positive prints, this time by the image instability and flicker, not to mention dust, dirt & scratches. Secondary audio sources, ie. positive prints, were just too noisy for us to give up on the clarity of the magnetic tape.

It follows therefore, that in this special case, the primary audio source behaved drastically differently from the primary image source. The more detail a strip contains, the happier we are, and of course a camera negative has the most of all. On the other hand, maximum detail in sound would have made the restored film virtually unpalatable.

Digital restoration of Finlay colour negatives from the Matson Photographic Collection at the Library of Congress

Jan Hubička

The presentation will demonstrate a method of digitally restoring colour from scans of Finlay colour negatives. Process Finlay colour (in its original form introduced in 1909 and re-introduced in an improved variant in 1929) is an example of an additive process of early colour photography. The scene was photographed using panchromatic negative through a special filter (screen) containing a fine pattern of primary colours (red, green, blue) organized in a similar manner as on a Bayer filter used in modern CCD cameras. To obtain a colour image the negative was contact copied to a positive slide which was aligned with a similar screen producing a colour slide. This process is very sensitive to

precise alignment. Many Finlay colour slides today are misaligned (due to ageing of gelatine layers) and the colours are poor. While this process was used by, for example, National Geographic in the 1930's, collections of actual negatives are very rare. We will discuss scans of negatives from Matson (G. Eric and Edith) Photographic Collection which were scanned by the Prints and Photographs Division of the Library of Congress, Washington D.C., United States of America. We will show the method of digital alignment, the additive screen and reducing colour noise by bilinear interpolation. This turned out to be a challenging task sensitive to many minor defects in the scans which would not be noticed otherwise. It demonstrates how quality digitization is essential to enable research and restoration which was not anticipated at the time the collection was digitized.

Restoration and preservation of colour photography

Petra Šemíková

Nowadays colour negatives and slides are an inseparable part of many collections and archives. Due to its complex composition and the presence of unstable dyes, its preservation becomes a challenge. With better possibilities of digitization, the current state of these objects can be useful not only for documentation but also for presentation in the digital domain (colour slide projection etc.). This digitized image allows presentation to the public, larger prints can be made and displayed. The variety of chemical composition of these photographic and cinematographic images and its different colour processing make it almost impossible to generalize on some unique procedure for the conservation and the digitization.

My presentation will focus on issues that can be discussed in institutions and private collections which are housing colour photographic or cinematographic material. Due to a research photo heritage project about Kodachrome, there was complex research through Czech museums, archives, art galleries and private collections for Kodachrome colour reversal slides in different formats.

I will introduce different methods of identification of the colour reversal slide originals made in the last seven decades of the 20th century. I would like to briefly describe the Kodachrome laboratory process in the aforementioned period, its development and its differences from other colour slide films and photography (Orwochrome, Ektachrome, Agfachrome).

Finally, I will briefly describe the conditions in which photographic and cinematographic materials are housed and describe preservation methods and disinfection procedures to follow when possible microbiological contaminations (mold, fungus etc.) may occur, mainly in the case of colour monopack photo stock.