

Restoration, Silver Halide, Digital—Which Stake?

A Lecture about the Restoration and the Digitalization of the French Museum Photographic Stock

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This study, ordered by l'Agence photographique de la reunion des Musees Nationaux tries to answer the question: how to commercialize digital files instead of slides? We have chosen to analyze only the solutions available on the market except all the scanner's solution, images writers developed by the CNRS or any other research institutes. Generally, they are different from all the standards on the market of graphic arts. With this study, we want to stay compatible with the equipment used by the engravers who work with publishers.

For that reason, we have divided this study in four parts:

- Restoration of existing images
- Digitalization of the stocks
- Digital photography
- Restitution of images, divided in three parts:
 - output on slide
 - output on imagesetter
 - printing (with a printer)

To make it clearer and more efficient, we have made all the tests on the same 5 documents; 4 paintings and a small box for jewels. The pictures of three of the 4 paintings were more or less color damaged. With the fourth one, we had to suppress the brilliancy on the edges of the cracks.

Restoration of Images Already Existing

As far as photo restoration is concerned, we work most of the time on paintings or drawings that you can not rephotograph because of their bad condition or because they have disappeared. For the other pieces, we have to rephotograph them. The different ways now to present a piece of art, (with or without a frame for paintings, with a colored or gray background for objects) make most of the time, the photograph do the work again.

The restoration concerns two things: recovering the colors from the old slides and retouching the brilliancy along the edges of the cracks of the paintings. Some of the slides had a color chart and some had no color references. This part of the job was easy to do with a good LUT on the scanner. The brilliancy was more interesting because most of the people used immediately the stamp function in all the software with some differ-

ences but they were always working with these method. Only one firm took the time to invent its own method and this was very interesting because this way divided the time of retouching by two even if they were working on a Mac with Photoshop, although the other firms were using systems like Seitex, Barco, Kodak Premier. For this part of the study, the color calibration was not a big deal because we were working with one firm and you always have the same graphic chain.

Digitalization of the Stocks

There are two ways to digitalize existing images. The first way is in two steps: the first step is a video definition in order to stock the images for consultation. The second step would be to digitalize the images to be reproduced with the engraving standards.

The second way is to digitalize the images on a Photo CD which allows you to kill two birds with one stone. As a matter of fact, we can use the base file as a consultation file, but within the same time, being able to use the high-test file for zooming in the picture to see details and for engraving. We think that the difference of cost between a video digitalization and the one on a photo CD does not justify the first one. The biggest problem with this solution is the size of the data base.

Digital Shooting

For digital shootings, we have tested, in work conditions at the Louvre, the Leaf Camera Back, the Leaf Lumena, the Phase One and the Kontron camera.

The first results of these tests show that the digital camera, scanner type is to be avoided for two reasons:

-time of shooting is very long and you can easily miss the picture if someone walks near by the camera.

-The tungsten lighting is too strong and warm and can damage the objects that you are shooting.

In consequence, only the Leaf Camera Back is interesting. Its chromatic reproduction qualities are quite exceptional. But we still need to compare the Leaf Camera Back and the Catchlight, one pass version. For the same quality of work, it may be more interesting to work with the Catchlight only because it suppresses the vibration problem and can be taken outside. (The study was finished before the Photokina '94)

Images Restitution

This topic is the main part of this study. Only good quality prints will allow you to sell your production. For printing black and white or colored pictures, the speed of printing is a problem. Since the Photokina, things have changed and it seems that certain printers will allow us to work at a profitable speed.

Ekta Output

An Ekta output for restored images can be done on a 4×5 inch or in 5×7inch. For the images coming from the Leaf Camera Back, it seems better to output only on 6×6cm slides. In fact, it is a paradox to output on slide a file from a digital camera or a file which was restored on a computer, but for commercial reasons, it could be useful. It is a paradox to add another generation to the graphic chain when the digital photography is suppose to simplify them.

Imagesetter Output

About this technology, we have to check the quality of the Photo-Cd and also the quality of the files which came from the Leaf Camera Back. Always in the optique to be very practical, we have done some tests but we

gave only the file to the service bureau. So they don't have any reference to do their job. Why use this procedure? Because, if you have to give to a publisher a document with each file he bought to the stock, it becomes quietly impossible to manage and in fact you do not simplify the graphic chain.

Quickly, we can establish that people can not do a good engraving of a painting. Why? Because, they do not know exactly the tones of a painting. On the opposite, with the experience, they know the skin or the sky tones. But for a painting, they need a reference. The problem is what kind of reference? As we said before it is impossible to give a copy of each painting, so we need something like a IT8 chart which will be used by the engraver as a reference to find the difference between the stock graphic chain and his own. In this case, it's possible to use graphic file in the graphic chain. So as a user what I would say to the audience is: we are expecting from the technology world something like a true color system which, like true type, warrants us an universal color quality through the all graphic world. Maybe the solution is the CIE-Lab color space which includes in the file something which calibrates the monitor in an automatic process.

