



## Fine Art Printing and its optimized presentation on the internet

A simple introduction how to put fine art photography into the web and how to preserve the atmosphere of the original print.

Ladies and Gentlemen!

Some of you have already noticed the internet page of the "GRUPPE V". For about 15 months I am the webmaster of this homepage and responsible for its design and care. This task fulfills me with large delight and thus gives me the opportunity to represent a part of the German Fine Art scene in the public.



Photo: Raphael Stötzel

As I belong to the large family of black-and-white art photographers this happy combination of webmaster and Fine Art Printer makes me able to understand the language, wishes and needs of the exhibiting artists so that I can present them and their works best possible, hoping to their most complete satisfaction, and transfer their reality into the virtual reality. Out of this task, the many led discussions and thinking sessions came out the desire to present this lecture.

Like in the conventional photography the size of the Print has a clear influence on the atmosphere of the picture as in the digital world. During the preparation of the pictures for the Homepage of the "GRUPPE V" this fact was for me clearly to see. Not only the printed photo changes in its statement depending on size of enlargement but also the digital image.

Beside the reduction of the information details during minimizing the originally high resolution scanned pictures a quality loss of 30 kb (or little less) occurs while compressing the Jpeg files to an "internet adjusted" size. Now my task is to reduce this quality loss and take care that the image files of digitized subjects don't suffer. This is necessary for representing the original subjects and the photographer standing behind them in the best possible way. The trial, to put these in concrete terms and to automate in the practice, often failed, because "the loss of atmosphere" on the to me submitted works was very differentiated. I am grateful to those who supplied me with a large number of photos so that I had free choice in selecting these works for conversion in the best possible way.

Fundamentally it is necessary to check every picture directly on the screen, with the original Print lying beside for comparison if possible protected from straw light at standardized illumination.

It doesn't help to submit an as large-sized as possible negative or one large-sized Print. The computer monitor can only represent approx. 75 dots per inch (dpi). Every proper large-sized negative would blast these measures. Depending on reproduction size on the screen the differences are no longer visible, whether the negative was originally small, middle or large format.

The visual information is much more important. Pictures which are built up clearly structured and simple have a far larger chance to work in the very reduced, digital form. Graphic compo-



sitions are more suitable than photos which are fine chased and soft – not every photo can really convincingly be represented in the internet! In addition it seems that internet surfers suffer from a shortage of time and observe the pictures only superficially.

This fact puts a virtual filter on the photographers choice of the used photographs, it should be carried out very conscientiously.

Practically it is recommended to scan the original photos with a high resolution of 150 or better with 300 dpi and afterwards be reduced to the needed 75 dpi of the screen representation. The blurry appearing during the scanning can be eliminated up to a certain limit with “unsharp masking”.

However if this procedure is used excessively in cases where, the reduction factor stays very high or the presentation is not quite sharp it can come to a shade formation at the edges. Slight jumps at the gray tone-graduation are emphasized also more strongly so that it comes to a “steps-like” effect. In addition, the brightness of the picture increases through the enlargement of the contour-sharpness.

If the masking is used in a lower measure, remains of blurry still exist which is less bad than the mentioned shade effect but this one in addition never is of benefit to the not quite sharp screen mode. An excessive increase of sharpness results in a defamiliarization of the not absolutely sharp original picture – which lastly even creates an atmosphere loss on the original picture in comparison to its digital copy.

In the right measure used it will help the digitized picture to get larger brilliance, without affecting the increased sharpness.

The last step of picture preparation consists of condensing the files to an “internet adjusted” size less than 30 kb to shorten the loading times correspondingly. Here can also be seen again that clear and simply built up pictures are much better because at same picture size the compressed files are considerably smaller as fine structured pictures. If compression is used too strongly at these fine pictures in addition to the usual loss of sharpness and steps-like gray tone jumps, Moiré-like color streaks occur which counteract the desired color calibration.

At first I saw some works of the “GRUPPE V” in digitized form before I saw the original Prints. When looking at the originals I was really amazed, how large the differences between the original and virtual Print can be. Nowadays our senses are impaired so strongly by excessive application of such procedures that classic works often seem virtually blurred to us! The very strong re-sharpening of the digitized pictures suggested me a sharpness which original Prints cannot have and should not have!

A for the subject suitable coordination is problematic if, the original print and the digitized one on the screen have different sizes, since the impression of sharpness isn't same at various viewing distances. In addition, depending on Print size, the richness of details change particularly in the lights and shades and thus makes exact contrast coordination difficult. Due to low resolution a computer screen cannot represent the full lights and shades anyway even if the scanner has included all of these.

All of you know the various effects of pictures, whether they are looked upon by light or on-light. The human eye has similar difficulties in comparing the paper print with the onlight created digital copy.



For what is just sufficient at the vacation photos of the hobby user does not satisfy the Fine Art Printer. Although the equipments try to convince with impressive technical data, the results do not satisfy. The trials for scanning a Fine Art Print makes up a great challenge for both the hard- and software and to the patience of the operator, for a convincing result without reprocessing. Many a automatic systems have reached exactly the opposite of this, for which, it was originally provided. The scanned version of a picture containing the full range of shades is only a reflection of the original shade range. A corresponding post-processing doesn't bring much either, sooner, it makes the result even worse since every process leaves a track on the picture. Corresponding equipments which get close to the desired quality are often found in the upper financial range.

A standard preparation for the internet is therefore only conditionally possible since the common programs represent the same image files variously. The differences consist of quite distinctive color-tilts (even on monochrome pictorial material!) as well as differences in color saturation, contrast progress and detail patterns. The remedy is up to a certain degree calibrating the in and output devices by construction of so-called profiles. This often fails at the fact that no obligatory standards for monitor representations exists on the one hand and that it comes due to individual adjustments of the user and aging of the cathode ray tube to changes on the other. Due to the slow progressing of this event it is difficult to observe. Today's active equipments allow through sensors a self calibration of the cathode ray tube possible, with clear improvements, but it is recommended to the professional nevertheless to replace his screen every 2-3 years.

Unfortunately, required technical data needed for these calibrations are frequently not or only incompletely found by the enclosed documentation of the manufacturers so that only a very vaguely, pure visual or mostly a not working calibration is possible.

More greater differences are on the two computer systems PC and Apple Macintosh. When looking at the pictures on the two computer systems – the PC generally represents pictures richer in contrast.

The picture editor can only try to reach an average tone, which on most screens looks “acceptable” or “good”. Even if the coordination of the graphics program is successful on the available hardware, its use is quite less since the Browser programs presenting the web pages interpret and report picture data very individually. Well, one still cannot assume that an optimally prepared picture on the graphics software agrees with this which appears in the Webbrowser. My call goes in a similar manner to both the soft- and hardware industry, for corresponding standardizations and turn them over into working programs and equipments to a form which is also configurable for “standard users” like you and me.

Before you move the ready picture into the web you have to make a Browser check. But a deliberate made mistake to compensate the differences of the Browsers seems to me to be a quite unsatisfactory solution.

There nevertheless are some rare cases in which the picture must deliberately be “worked wrongly” so that the feeling of the picture agrees with the one of the original photo on the monitor cause at the present state of the technology despite complying all the rules it isn't always possible!

At the practical work in addition to the given example of the unsharp masking's even broader problems occur.



This problem will be common: for the ones who frame his classic Prints with a passepartout: the photo seems to produce various effects depending on brightness, color, structure and measurement of its framing. Therefore the common image processing programs offer, a look at the picture with bright, middle or dark framing. This is already a great help, far more a practicable control is recommended directly in the Browser itself on the chosen background for the internet page.

The representation size in the processing software has also its consequences. The 100% representation looks of course the best since all available picture information is shown unadulterated on the screen here. The "whole" size conditions (25, 50 and 75%) look also quite good, at the sizes "divided into three parts", (33 and 66%), however, "steps" already appear. For a proper image processing the non whole numbered size conditions are quite useless. Caution also is demanded against the moiré effect which can appear at on screen presentations particularly strong. This effect will be quiet weaker on the print as on the screen because the weak screen resolution shows it stronger. Some scanner programs are able to recognize available print-grids and filter them out. This procedure works even at regular printing-grids astonishingly well.

This lecture can only be a coarse and incomplete insight into the not quite unproblematic digital image processing which shall not claim completeness. Those who are already classically trained in the working with photos will generally have it more simpler. Like in the analogous photography the incorruptible eye is the best measuring instrument! This is at least my experience by completed commissions till now which also were the shutter release for this lecture. Fascinated of the possibilities of these techniques I am interested at further extension. The tasks and wishes of the Fine Art photographers definitely represent a special challenge for me.

The hope remains that, the industry uses the possibilities, arising from modern technologies to give us the tools to our hands as soon as possible, thus we need it for bringing our pictures inside and outside into harmony – both in the virtual and in the real world.

My serious advice to you: The largest meaning for an effective presentation of the photographs on the internet lies at the choice of the photographs. Be so much consequent not to show every picture you have taken which are explained not to be suitable for a presentation on the World Wide Web.

I thank you for the time you have spent with me.

Yours sincerely