Notes for Projected Images

As the new season for the club is about to start. I have jotted down some notes which I hope will help explain the differences between the image you see on the computer screen and the projected image and some guidelines in trying to achieve the same look on both. So whether you are giving a presentation or just entering images for the monthly competition I hope the following notes will help.

First of all the differences. There are of course several. On your home computer or laptop you view an image on a screen that is pixel mapped, backlit, probably at a higher resolution than the 1400 x 1050 pxls available on the club projector and with the screen having a contrast ratio of at least 1000:1, considerably higher on full HD screens, also from a distance of about 2ft. Whereas on the projector you view a reflected image via a mirror system on to a white plastic screen from a distance of about 8ft – 50ft depending on how far back you are sitting in the club room.The image is zoomed this gives a large image size of approximately 4ft x 4ft so those at the back can see, however it does diffuse the reflected image slightly. The pixel mapping is done via the graphic card inside our laptop and sent via cable to the projector. The white screen of course has a contrast ratio of zero. So when you say “why aren’t they the same” you now know the main reason. There is no compatability. Another reason may be Calibration. We try to keep the club laptop up to date with doing at least one check per season (thanks to Peter Matthews,for that) however is your own computer screen calibrated for correct colour output?

Therefore we need to ensure that the images we want to project are as close as possible to the original, which may need some adjustment on the image itself, which mainly means tweaking the contrast and saturation slightly to make up for the aforementioned differences. As all images are unique it is impossible for me to give definate steps, however an increase of about 10% should suffice. This can be achieved by an Adjustment layer using Levels, or Curves or just Brightness/Contrast. Saturation can be done via the Hue/Saturation Adjustment layer. The projector for some reason is not as good at showing warm colours such as reds or yellows, these should be increased seperately maybe 10% extra, depending on the image.

*I would also suggest you do any adjustments on a duplicate copy, or a virtual copy if you have Lightroom. In Photoshop go to Image > Duplicate, in Elements its File > Duplicate. Accept the defaults and the duplicate appears in the main window. In Lightroom go to Photo > create virtual copy, I would also edit the saturation using the HSL tab. You can now compare the two versions side by side to make sure you haven’t overdone the adjustments.**Why?***

If you do all your post processing in the sRGB colour space and save all the processed images as Jpeg’s then you can ignore the following, except of course not forgetting to make sure the file size is ok for the projector. **The file size should be 1600 * 1200 which is the PAGB recommended for competition and submitting the duplicate copy.**

If you are like me and do your post processing in a different colour space, such as Adobe RGB and save the processed images as TIFF, or PSD then you need to convert your duplicate image to sRGB FIRST and do any adjustments afterward. **The reason is that converting from a lossless file format to a compressed file format (Jpeg) will cause a slight degradation. The same is true if you change from a large colour space (Adobe RGB) to a smaller colour space (sRGB). The degradation will be small and may not show on your computer screen, but may show when projected.** So if you have a TIFF or PSD and do a straight Save as > Jpeg > image name the resultant file goes to where you have selected and you may then submit that image without looking at it and comparing it to the original. It is possible when projected it may not look the same as the

original. Thats ***why***. (It is of course possible to view and then tweak the Jpeg image itself to overcome the problems already outlined)

Using the duplicate copy, In Photoshop go to Edit > Convert to Profile, in the pop up dialogue box the only thing is to alter the destination profile which should be sRGB by default. If not then click the downward arrow and choose from the list that pops up, its close to the top. In Elements goto Edit > Colour Spaces and choose Adjust colours for Computer Screens.

In Lightroom do the adjustments on the virtual copy first then go to File > Export. In the pop up box choose Export Location, choose Specific Folder and tick/ untick other boxes as appropriate. File naming, is optional. Ignore Video. File Setting, Format Jpeg, Color space sRGB, Quality Max, Limit File Size 600k (more than adequate for our projector, it will load quicker too). Next is Image Sizing, tick resize to fit, choose long edge for landscape mode images (enter 1600, choose pixels from box drop down menu) or short edge for portrait mode images (enter 1200, choose pixels). Tick don't enlarge, resolution doesn't really matter as you have limited the file size. Output Sharpening is optional, if you are downsizing the image then you may wish to sharpen for screen with low amount. Ignore the other tabs. If you know how, it is worth making an export preset, then in future you only have to press one button.

Thats it, I hope these notes without delving into great detail, go some way to explain the difference between computer screen and our present projector and are helpful. We ***do*** have to do a little extra work ourselves if we want our projected images to come as close as possible to match the originals. Do not forget the adjustments I have suggested are guidelines, not set in stone, make sure you don't overdo it. Check the histogram and make sure saturation is subtle not garish.

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