Black Point Compensation:

One area that many users of Photoshop are still questioning is the role of Black Point Compensation in several of the dialog boxes in Photoshop. Black Point Compensation can be used when transforming files using ICC profiles. An example would be converting from RGB to CMYK. The conversion process using ICC profiles requires a source (where is the file coming from) and a destination (where is the file going). Due to the fact that there is no standard technique in how ICC profiles map pure black from the source to the destination, there are cases where the pure black of the source profile can be a different value than the black of the destination profile. In some such cases, unacceptable results can develop when the file is output.

In order to correct these possible problems, Adobe introduced a feature in Photoshop 5.0 called Black Point Compensation. When this option is checked, Photoshop examines the black points of both profiles to see if each will work in harmony. This is the case where the black mapping of both profiles is such that an accurate black is represented in the final output. Upon examining both profiles, if the black levels are going to produce acceptable results, the transformation from source to destination profile is carried out. If upon examining the two profiles, Photoshop sees that the two black points are different, an extra processing step is carried to unsure that the black point of the source profile is correctly mapped to the black point of the destination profile.

In rare cases using Black Point Compensation can cause unacceptable results and the effect is usually washed out detail in the very dark regions of the final image. In our experience this problem usually rears its ugly head with older RGB output profiles. Adobe recommends, and we agree, that in almost all cases, Black Point Compensation should be on when dealing with CMYK files (doing RGB to CMYK conversions or CMYK to CMYK conversions). In most cases, doing RGB to RGB conversions with Black Point Compensation will produce desirable prints. However, depending on the profile, doing a conversion from RGB to RGB with Black Point Compensation can produce poor output with washed out blacks. It appears that this problem with older RGB profiles is dependent on the software that is used to generate the profile. Apparently there is a "Black Tag" feature in ICC profiles that in some cases can be used or unused depending on the software that actually creates the profile. For this reason, there is no hard and fast rule that says we should or should not use Black Point Compensation with RGB output. **Our recommendation is to use Black Point Compensation with RGB output profiles** or if possible, try a test with Black Point Compensation on and off. BPC will either produce acceptable results or do nothing when using modern profiles.

There is one other case where you may want to turn off Black Point Compensation. When you want to soft proof output for a printer that has a low dynamic range like newspaper, where the blacks are usually not very dense. By turning off the Black Point Compensation, the soft proof is more accurate in predicating the effect of this low dynamic range. Black Point Compensation should be turned off in the CMYK Set-Up.

Andrew Rodney
The Digital Dog
andrew@digitaldog.net
updated 12.12.10