



And Then There Were Three...

Part three of a three document series reviewing a selection of common image preflighting errors

Introduction

The intent of this series is to review and provide solutions for a sampling of common problems encountered when using the *Digital Expert™* tool, or systems integrated with *Digital Expert™*, to preflight image files. This document addresses the topic of **JPEG Compression**. JPEG compression can be utilized through several different applications, but the most popular raster graphics application program, *Adobe Photoshop®*, will be the primary focus here and used as examples for reviewing this compression scheme.

Part Three: The Facts About JPEG Compression

Lossless and Non-Lossy Compressions

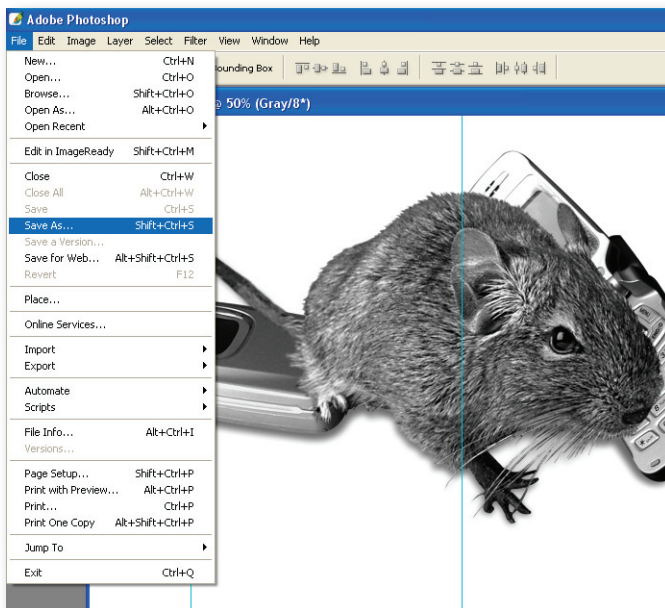
Many file formats use various types of compression to reduce file size. Some of these compression schemes are considered “lossless” because the algorithms they use compress data without removing detail or color information. They do not sacrifice quality for the sake of smaller files. Other compression schemes are considered “lossy,” meaning that the algorithm selectively discards data in order to achieve file sizes otherwise unachievable using lossless compression techniques.

ZIP, CCITT, and LZW are examples of common *lossless* compression types, and JPEG is the most common *lossy* compression in use today. JPEG stands for “Joint Photographic Experts Group.”

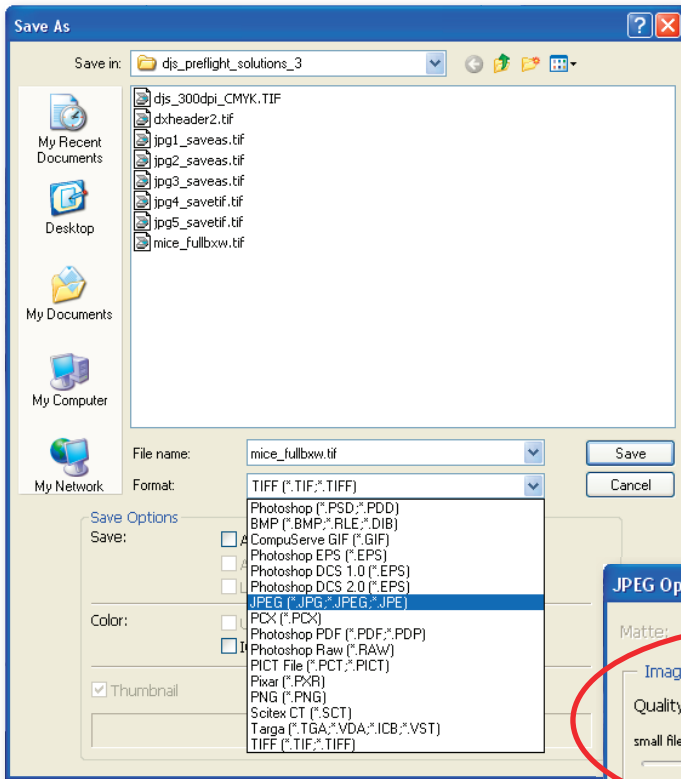
JPEG Compression Highs, Lows... and Woes

In *Adobe Photoshop®*, files can be saved in the JPEG format and the specific compression level is selectable within a range. There are thirteen total levels of compression available in *Photoshop®*, numbered from (0) to (12). Choosing a lower number results in greater compression and smaller file sizes at the expense of detail and quality. High compression often generates “artifacts” within an image... ugly, blurry bits of data that affect the legibility of type and degrades image detail.

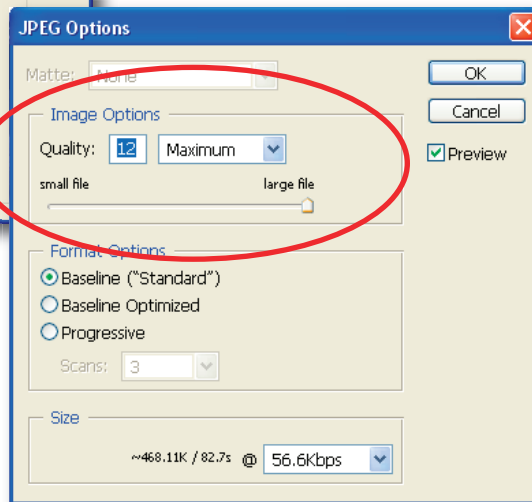
To gain a better understanding of the above, let’s experiment with a sample image:



- Open a file, then select (**File->Save As...**).



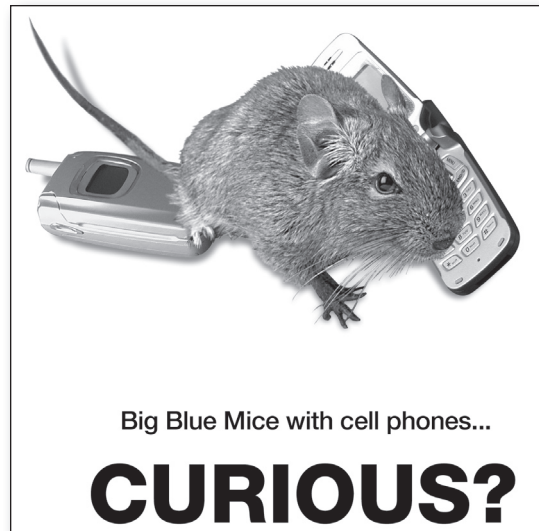
- Select **JPEG** from the *Format* pull-down menu.
- Select the **Save** button.



• The JPEG Options slider can be moved horizontally for quality level selection. In this example, “Quality: 12 - Maximum” has been chosen. Under *Format Options*, there are options useful for online display purposes, but these can be disregarded if using the image for print-production. *Baseline* (“Standard”) is chosen for best compatibility with web browsers, *Baseline Optimized* for a slightly smaller file size, and *Progressive* for gradual display of the image online as it downloads into a browser. *Baseline Optimized* and *Progressive* are not supported by all web browsers, so it is best to use *Baseline Standard* in most cases. Again, note these are useful when creating JPEG files for online display. The JPEG format is not recommended for files intended to be used in print production. Instead, stick with lossless TIFFs for raster based images.

A Darker Side of JPEG

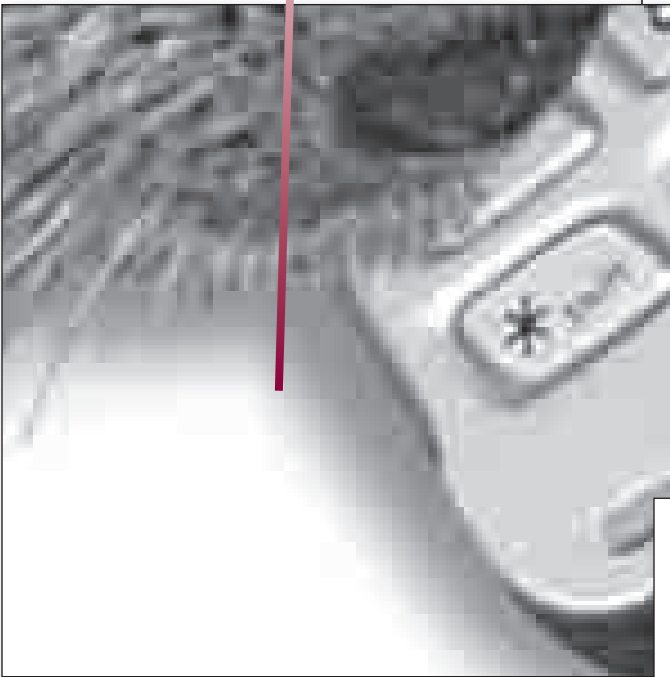
As mentioned previously, high levels of compression often result in visible artifacts... data not present in the original image that blurs detail and decreases text legibility. *Digital Expert™* can be, and usually is, configured to flag images that utilize JPEG compression at a level of 6 or below. Following are some visual examples of image “artifacts”:



Note the blurring of detail in the drop-shadow and cell phone areas.



Maximum quality/low compression
JPEG image saved at Level (12)



Low quality/high compression
JPEG image saved at Level (2)

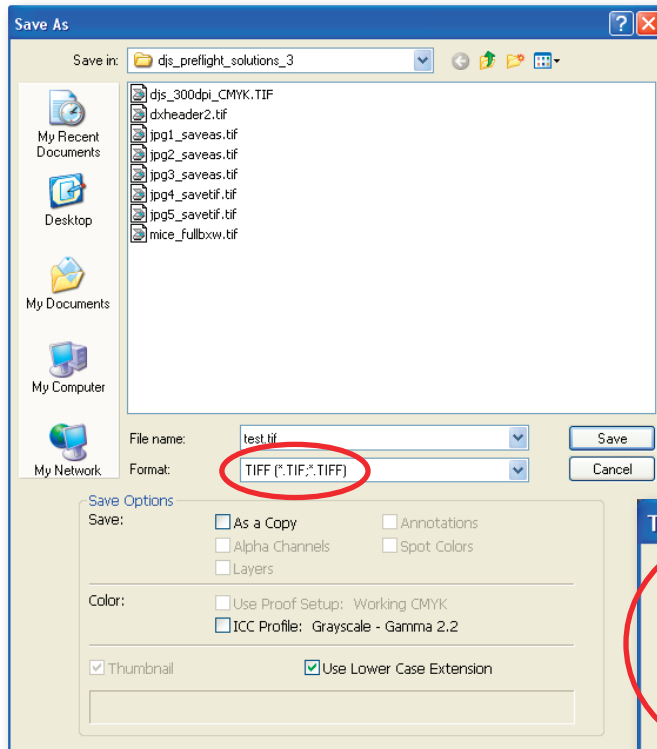
Image degradation caused by high compression is typically quite prominent when there is black text on a white background.



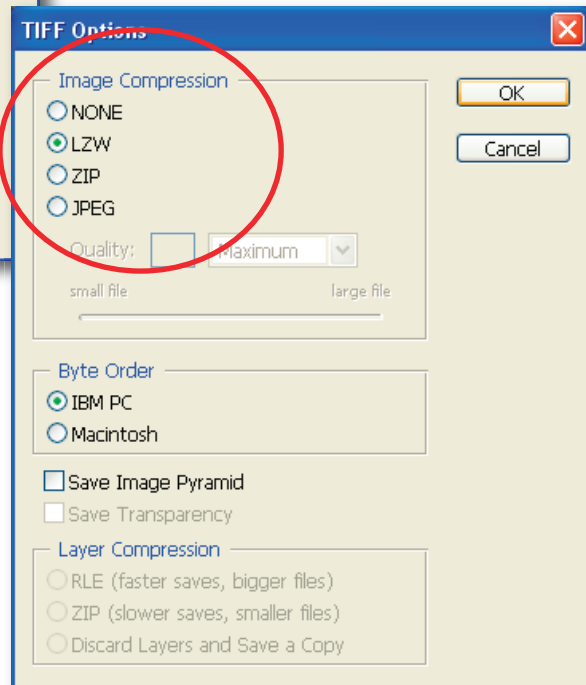
Low quality/high compression
JPEG image saved at Level (2)

Saving a TIFF file without JPEG compression

TIFF (Tagged-Image File Format) is a flexible raster image format supported by virtually all image editing and page-layout applications, therefore making it a preferable choice for saving high quality raster-based images. However, it is important to avoid introducing JPEG compression during the file save.



- Open a file, then select (**File->Save As...**).
- Select **TIFF** from the *Format* pull-down menu.
- Select **Save** button.



- When saving **TIFF** files for print-production, select *None*, *LZW*, or *ZIP* compression to make certain images are not degraded from their original form.

Summary

Adobe Photoshop® CS running on the Windows XP platform was used to generate the example screenshots for this tutorial. Other versions of Photoshop® may contain menus that slightly differ, however, all critical parameters and options used herein are available in previous versions.

Feedback

This document is designed as reference material to assist in remedying digital file problems encountered using the *Digital Expert™* tool, but the goal is also to develop solutions and techniques that can work well within a broad range of online and print-production workflows. Therefore, we welcome your suggestions if you feel there is something that can be improved upon, and welcome any questions you may have concerning the data contained within.

Please address any feedback to: dxconnectpro@tsg.sheridan.com