

# Image Protection Standards for the Digital Era

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*(This excerpt comes from guidelines prepared in 1994 for the MP©A board of directors. The guidelines have since been endorsed and published by ASMP, and have been adopted by various photo agencies.)*

This report focuses on the challenge of protecting images in the much more vulnerable environment of cyberspace. Whatever protection the photographer uses today must remain effective for 10, 20, or 100 years, since a digitally stored image might last for centuries after the original negative or transparency has faded into oblivion. Modern technology evolves so rapidly that encryption, watermarking, and other high-tech protections will possibly be defeated almost as soon as they are applied. As a bottom line, we strongly recommend a low-tech approach that can't be defeated by present or future technology: Before release to a client or into any environment (especially the Internet) where copying is possible, each and every digital image should have a copyright notice, credit, and unique identifying number bit-mapped (or rasterized) into it, in pixel form as part of the image itself.

Keep in mind that from both the freelance photographer's and the photographer agent's point of view, it is imperative that image ownership be protected at all times. When selecting a digital photo agency or when having your images scanned, ensure that the organization understands this basic requirement: To protect the image, a clearly legible statement of authorship (credit) and also of copyright ownership (legal notification) must be attached to the image before any distribution, and preferably from the moment of scanning.

Since there are literally hundreds of image file formats as well as format conversion programs, whatever convention you use for copyright and credit notification should continue working any way the image is viewed or stored now or in the future. We cannot assume that any single image format will become the standard in the future, and we cannot assume that images scanned and originally stored in one format will be viewed and used in that same format.

Therefore, we recommend our “low tech” solution. Don't be confused by technicians and art directors who have different ideas — your credit must be stored in the image bitmap itself for full protection. While information can also be stored in “channels,” “layers” “headers,” or in attached databases, information stored these other ways can too easily be stripped away and discarded without notice when conversion programs open the image. Face it, in 30 years a researcher will be happy enough just to get the image open, and will not be concerned about hidden data stored in some obsolete format. Try opening word

processing documents from just a dozen years ago, and you will understand the implications of obsolete formats.

We also recommend that this bit-mapped credit should not lie on top of the image, where it would destroy otherwise usable picture area. We recommend treating it like an artist's signature line beneath the image, but still within the bit-mapped file. Using the language of Photoshop™, the “canvas size” of the image needs to be increased, leaving a black bar at the bottom with reversed, white type for the copyright notice. The black bar with reversed type makes it clear that the credit data is an integral part of the image area. To make the copyright credit legible, the height of this bar depends on the file size. Since ASMP supports adjacent, readable credit lines, we recommend the following sizes:

Thumbnails (192 x 128 pixels) and preview images (384 x 256 pixels): Bar 12 pixels high, type 10 pixels high.
Screen Resolution (640 x 480 pixels) and Comps (1280 x 1024 pixels): Bar 36 pixels high, type 30 pixels high.
Print Resolution (3072 x 2048 pixels) and Full 35mm Resolution (6144 x 4096): Bar 72 pixels, type 60 pixels.

Of course, the user can crop out any bit-mapped credit. But as long as the photographer or image provider always includes the credit and copyright notice within the image, the legal burden of copyright protection is placed more squarely on the user who receives that image.

When adding a text-based credit line in Photoshop™ or other image processing program, the © symbol is easy to insert: option-G makes a © when using the Macintosh; CTRL-ALT-C does the same thing in Word for Windows. Copying the symbol from Word into Photoshop is a simple matter.

We also recommend that inclusion of one other type of data in the image bitmap — a unique image serial number to identify the picture and to enable access to specific image information regarding rights control issues, restrictions, model releases and captions. Without this number, the scanned image could become unusable, since publishing without knowledge about image restrictions and model releases puts both the photographer and the user at legal risk. (This is not the case when all images are model released and free of all restrictions. Unfortunately that is not the nature of most picture collections.)

Imagine how much easier it is to “misfile” photos in the digital age! When an art director has selected an image, it will most likely be converted into another format for use in a layout or multi-media product, breaking the connection to the original file. Months or years later, a rights-protected image file without proper identification could be used in any number of unauthorized ways...or accidentally confused with broad rights, royalty-free images stored on the art director’s drive from a previous project. Everyone benefits from a bit-mapped copyright notice, credit and serial number when positive identification

is required. Adding a permanent URL or e-mail address to the bitmap is another consideration, making it easier to track down the image's author.

Watermarking and encryption also provide valuable safeguards, but they can be vulnerable as technology evolves. Such schemes may be broken, and must never be relied upon as the only form of protection. In the future, fail-safe protection may very well be developed. For now, more than one simultaneous approach is advisable.

Nor does low-resolution distribution protect images. Some image publishers will say, "But your image is safe if we only release a low-resolution copy." This logic is absolutely false. No matter how small the file size, no image is safe without some form of protection.

Pixels can be "interpolated" or electronically multiplied, doubling or quadrupling the size of any image. Interpolation will only get better as new fractal and wavelet technology is developed. Therefore, we must conclude that low resolution does not guarantee image protection. It will only get worse in the future, and today's small images will already be out there.

We recommend using encryption and watermarking for all images that are screen resolution (640 x 480 pixels) or larger, so the client is forced to register for permission (and pay a fee) before they receive clean copies of higher-resolution images. Also, for unregistered viewers and images at the lower thumbnail and preview resolutions typically used during picture searches, we suggest watermarking a copyright symbol or company logo directly into the image, on top of the picture.

Using a program such as Photoshop™, this is accomplished in RGB mode by first changing the foreground color to 128 value for red, green and blue. Select the text tool, and type in a © that is at least 100 pixels high. While the text selection is floating, center it in the picture and change the opacity value to 50 percent). On the screen such a watermark is barely visible, but when the image is copied, color separated, printed, film recorded, enhanced or transmitted the copyright sign remains with the file and the symbol often becomes more visible.

The following example illustrates how the copyright notice, credit and serial number are bitmapped onto the image.

<<image: 640\_Sample.jpg, which also appears on the next page>>



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