

RAILPACE Photo 101: **07: Understanding Digital Camera Resolution Settings**

When shooting Digital photography, always, always, set your camera to the highest level that it can record, such as "JPEG Large/Fine" or "RAW"

Then be certain that the high-resolution file that you ultimately Upload to us for publication is the high-res file that your camera recorded, not a "downsampled" compressed, or smaller-size file.

Digital Photos for Railpace Newsmagazine are published at 300 d.p.i. for highest quality reproduction. Photos that you see on the Web and in e-mails are usually 72 d.p.i., which is sufficient for viewing on a computer monitor.

The pixel size of your digital image (width x height) determines how large it can be printed at 300 d.p.i.

You can determine the pixel size (dimensions) of your digital photo in PhotoShop (and most other image editing software) under the drop down menu,

IMAGE ... >> IMAGE SIZE.

Just set RESOLUTION to 300 and PhotoShop will automatically calculate the dimensions in inches that your shot can be printed.

Alternatively, you can "do the math" manually, Just grab a calculator and divide your camera's maximum image pixel size by 300 and you'll know how big (in inches) it can be printed in the magazine.

for example, for an image 1048 x 760 pixels,
1048 divided by 300 = 3.5 inches wide
760 divided by 300 = 2.5 inches high

This yields a rather small photo, and probably not useable in Railpace.

The higher the mega pixel rating of a camera (and the higher your RESOLUTION SETTING), the larger size photo you can reproduce, either as a print, or in a magazine, or on a Digital projector for a show.

In summary,

- To obtain the highest megapixel image, always set your camera to the highest level that it can record, such as "JPEG Large/Fine" or "RAW"
- Upload your highest resolution image... not a downsampled, compressed, smaller file size.
- If your camera can burn the "Date" into your image, make sure this is turned off/ disabled.

You paid for all those expensive pixels, so use them!

Remember that each time you make a change to a JPEG file and then **RE-SAVE** it as a JPEG, YOU LOSE SOME IMAGE QUALITY. Opening-and-RE-SAVING a JPEG file several times seriously degrades the image quality. (simply opening and closing a JPEG image just to look at it, without making any changes and re-saving it, does not harm image quality)

See Resolution and Equivalent Maximum Print Size table on following page.

Digital Camera Resolution and Equivalent Print Size

Camera Megapixel Resolution	Camera Megapixel Rating	Camera Brand Examples	Magazine Print Size at 300 d.p.i.	RAILPACE Magazine Photo Capabilities
6048 x 4032	24.5 MP	Nikon D3X SONY Alpha A900	20.1 x 13.4 inches	Unlimited
5616 x 3744	21.1 MP	Canon 1Ds Mark III Canon 5D Mark II	18.7 x 12.5 inches	Unlimited
4752 x 3168	15.1 MP	Canon 50D Canon Rebel T1i	15.8 x 10.5 inches	Unlimited
4500 x 3000	13.5 MP	Canon 5D Nikon D2 Xe	15.0 x 10.0 inches	Centerspreads
4288 x 2848	12.0 MP	Nikon D3 Nikon D90 Kodak Z980	14.3 x 9.5 inches	Full vertical Front Cover
4064 x 2704	11.0 MP	Canon Rebet Xti	13.5 x 9.0 inches	Full vertical Front Cover
3888 x 2592	10.0 MP	Nikon D80 Canon 40D Canon Rebel Xs	13 x 8.6 inches	Full vertical Front Cover
3504 x 2336	8.0 MP	Canon 30D Canon 20D Latest Cell Phones	11.6 x 7.8 inches	Full vertical Front Cover
3008 x 2000	6.0 MP	Nikon D50 Nikon D40 Canon Rebel	10.0 x 6.7 inches	Page Width, Front or Back Cover
2560 x 1950	5.0 MP		8.5 x 6.5 inches	Page Width, Front or Back Cover
2448 x 1632	4.0 MP		8.2 x 5.4 inches	3 columns width
2000 x 1500	3.0 MP		6.7 x 5.0 inches	Large (2-column) News Photos
1600 x 1200	2.0 MP		5.3 x 4.0 inches	2 colums wide
1280 x 1240	1.3 MP		4.3 x 3.4 inches	small News Photo
640 x 480	0.3 MP	Older cameras and older cell phones	2.1 x 1.6 inches	Too small to be usable