



# THROUGH THE DARKROOM DOOR

The Cleveland Photographic Society – Cleveland Ohio

Volume 80 No. 1 March 2003

## Schedule

### March

21 Annual meeting

Fri

27 Nature slides & prints

### April

3 Pictorial slides

10 PSA slide commentary

15 Board meeting

18 People slides & prints

Fri

24 Art in Nature

### May

1 General critique

8 People slides & prints

16 Judging class

Fri

20 Board meeting

22 PSA stereo exhibit

23 Annual awards banquet

Fri

29 No meeting



## Digital Briefs

### By the Numbers, Part I

By Joe Kunzman

Knowing how to calculate the size of an electronic image can help the photographer determine how large a scan or digital capture is needed for a desired print size. For instance, let's say if an 11 x 14 inch color print is called for, then how large a file is needed to produce a satisfactory image?

To begin with, we have to consider the resolution of the print. Resolution is measured in pixels per inch oftentimes called dots per inch (dpi). These terms are often used interchangeably. The target dpi depends on the medium for which you are producing the image. For instance, images produced for the Web need only be 72 dpi because this is the maximum resolution of most computer monitors. A magazine publisher may ask for 350 dpi, because their printing presses are setup for 175 lines per inch with a quality factor of 2. For photographic prints, most commercial labs and inkjet printer manufacturers consider 300 dpi to be a conservative resolution. As a practical matter, it can be difficult for the average

individual to distinguish between 300 dpi and 240 dpi especially when compared from a comfortable viewing distance.

### Calculating Image & File Sizes

Getting back to our example, an 11 x 14 print at 300 dpi would require a canvas size of 3,300 pixels by 4,200 pixels. This is calculated by multiplying each dimension by 300 dpi as follows:  $11 * 300 = 3,300$  and  $14 * 300 = 4,200$  respectively. To determine the total number of mega-pixels multiply the two numbers together and divide by one million. Since computers store values as 0 or 1, in binary terms a million, or mega, is actually  $2^{20}$  or 1,048,576, not 1,000,000 as would be suggested by the metric prefix. The image size of our example is 13.22 mega-pixels as follows:  $(3300 * 4200) / 1,048,576$ .

Finally, the file size is determined by multiplying the images size by a factor for color depth. Generally, each of the primary colors is represented by 256 shades. In binary terms, it takes 8 bits to count to 256 ( $2^8 = 256$ ). Since

## JUDGING CLASS

Example slides are needed for the judging class. Anyone interested in loaning slides for this class, please contact Ron Wilson.

**Through the DARKROOM DOOR is the official publication of the Cleveland Photographic Society;**

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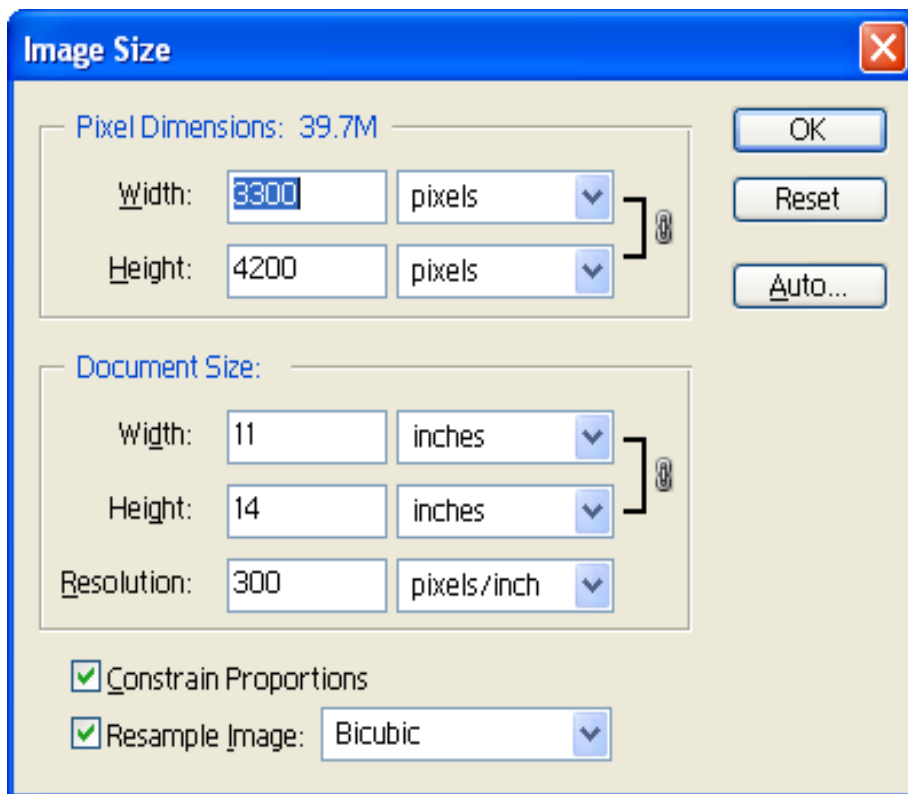
**DEADLINE FOR NEXT ISSUE** 18<sup>th</sup> of the month

## Digital Briefs con't

8-bits are equal to 1-byte, each primary color would require 1 byte of storage per pixel. Since a monochrome image only uses one color (black) the factor is one. Since a RGB color images uses the three primary colors (red, green and blue) it has a factor of 3. CMYK color image have a factor of 4 since this is the number of primary colors used (cyan, magenta, yellow, and black). Our example RGB image file would have to be 39.66Mb calculated as follows:  $13.22 * 3$ . Refer to the illustration to see how these numbers are displayed in PhotoShop. This will be the actual file size of a flat TIFF image. If a file is saved in a compressed format such as JPEG, LZW, or ZIP the file size may be substantially smaller. Adding layers to a PSD file will increase the file size.

If math is not your best subject don't worry, most scanning software will make these calculations for you. However, knowing how to make these calculations is important for several reasons. First, it will help you determine what mega-pixel capacity camera and/or resolution scanner is needed achieve a desired print size. Second, some scanners will automatically resample and image if driven beyond their optical resolution. As you may prefer to resample in PhotoShop, these calculation will help you detect and avoid this situation.

Next month we discuss resizing and resampling in more detail.



# COMPETITION RESULTS AND STANDINGS

## Accumulated Points

### Nature Slides

<b>General – Class A</b>	
Bob Stone	25
Ron Wilson	14
Maria Kaiser	14
Bill Gance	12
Jim Kunkel	11
Joe Polevoi	7
Ed Rynes	5
Elaine Kukral	4
Gerry Juskenas	3

<b>General – Class B</b>	
Jim Frier	14
Russell Purnell	14
Ken Kukral	14
Bing Wang	9
Pam Vizdos	4
Diane Funk	4

<b>Zoology – Class A</b>	
Jim Kunkel	17
Maria Kaiser	15
Bill Gance	14
Ron Wilson	14
Elaine Kukral	13
Ed Rynes	12
Bob Stone	9
Bob Malek	8

<b>Zoology – Class B</b>	
Ken Kukral	13
Diane Funk	5
Mathew Dunn	5
Bing Wang	4
Geoff Powers	4

### Nature Prints

<b>B &amp; W maker made Zoology – Class A</b>	
Paul Mathiellis	5

<b>Color maker made General – Class A</b>	
Jim Kunkel	15

<b>Color maker made General – Class B</b>	
Joe Kunzman	10
Marie Kunzman	5
Geoff Powers	5

### Nature Prints con't

<b>Color maker made Zoology – Class A</b>	
Ed Rynes	15
Jim Kunkel	10

<b>Color maker made Zoology – Class B</b>	
Bob Malek	10
Jim Frier	5

<b>General – Commercial</b>	
Bob Stone	20
Elaine Kukral	9

<b>Zoology – Commercial</b>	
Bob Stone	19
Vic Evcic	14
Derek Hunter	5
Elaine Kukral	4

### Pictorial Slides

<b>Class A</b>	
Joe Brilla	17
Gerry Juskenas	12
Ed Rynes	12
Ron Wilson	12
Bob Stone	12
Maria Kaiser	9
Bill Gance	5
Joe Polevoi	5
Susan Swope	5
Jim Kunkel	5
Elaine Kukral	4
Paul Mathiellis	4
Fred Reingold	3

<b>Class B</b>	
Jim Frier	12
Ken Kukral	12
Diane Funk	9
Russell Purnell	8
Steve Kleinman	5
Kolman Rosenberg	5
Bing Wang	5
Suzanne Cooper	4
Bert Klein	3

### Pictorial Prints

<b>B &amp; W maker made Class A</b>	
Ed Rynes	15
Jim Frier	5

<b>B &amp; W maker made Class B</b>	
Kolman Rosenberg	10

<b>Color maker made Class A</b>	
Jim Kunkel	9
Ed Rynes	5

<b>Color maker made Class B</b>	
John Armonas	5

<b>Commercial</b>	
Elaine Kukral	10
Bob Stone	8
Jim Frier	5
Bill Gance	5
Paul Mathiellis	5
Diane Funk	4

### Amended Standings

The Nature standings have been reviewed for accuracy through the 2/27/03 competition. Several questions were raised about mis-reported scores. Please review and contact Marie Kunzman if there seems to be a problem.

The Pictorial will also be reviewed for the next DRD.

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**PO Box 26104**  
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### **GLENN PETRANEK SHOW**

The show will be at the Smart Tart Gallery in the Tremont area at 2337 West 11<sup>th</sup> St in Lemko Hall. 25-30 images will be hung in time for the April Art Walk which begins April 11<sup>th</sup>.

### **DRD CONTRIBUTIONS**

We are looking for articles and photos to be included in the upcoming issues of the DRD. Please send to:

[mkunzman@sgmorris.com](mailto:mkunzman@sgmorris.com)

Or, see me at a meeting.

### **CHECK IT OUT**

"The Ten Commandments of Composition (and how to break them)" by Bob Krist

[www.bobkrist.com](http://www.bobkrist.com)



**"Santa's Helper" by Pam Messuri**

Pam is a student in the Fundamentals Class.