the Viewfinder

the Newsletter of the Syosset Camera Club

Volume 33 Number 6 February 2004

Volunteers needed *Sy Roth*

While I am a relatively new member of the Syosset Camera Club, the old timers have told me that the club has been in existence for about thirty years. Most of that time members met in Syosset. When I joined about five years ago, we met in the community room at the Fleet Bank. I soon learned that this was a very close-knit group that thoroughly enjoyed photography and each other's company. They freely exchanged information and went out on weekly photo shoots every Sunday. When the community room was no longer available to us, Moshe and Mel were responsible for our obtaining our magnificent meeting place at Olympus and because of the public relation efforts of the Fox's our membership has grown. We have entered the world of digital photography with a bang and all of us are enjoying ourselves immensely.

This is a group that deserves to continue to exist but will only do so if new volunteers step up to the plate and fill in the empty spots on our executive board. Please contact me. I need your help.

January Competition Results

Judged by Bill Rudock

Black & White Prints "A"
Print Of The Month- Barry Goldstein
Eight- Alan Agdern, Orin Edwards

Black & White Prints "B"
Print Of The Month- Bill Bowie
Eight- Bill Schmidt, Maylan Monahan

Color Prints Class "A"
Print Of The Month- Gerald Harrison
Nine- Alan Agdern
Eight- Moshe Markewitz, Sy Roth, Orrin Edwards, Bill Bowie

Color Prints Class "B"
Print Of The Month- Jerome Sax
Nine- Bill Schmidt, Edward Starling
Eight- Aileen Harrison, Ira Sunshine, Peter Metzger, Alan Ross

Color Slides Class "A"
Slide Of The Month- Ramish Patwa
Nine- Stan Rothman
Eight-Orrin Edwards, Eugene Fox

Color Slides Class "B"
Slide of the Month- Maylan Monahan

New Member: The Syosset Camera club welcomes our newest member, Rita Greenstein of Hicksville,

Meeting Schedule

January
29 **Tapestry in light** presented by *Robert Rode*

February
12 **Competition** judged by *Mel Ettinger*
19 **Light from Paradise** presented by *Jim Paradise*
26 **This One Got a Nine** A look at high scoring prints and slides with member comments

March
4 **Board Meeting**
11 **Competition** Judged by *Dick Hunt*
18 **Shooting Close to Home** presented by Joe Senzatimore
25 **Using a Modern Camera** presented by *Gerald Harrison*

APRIL 2004
8 **Competition** judged by *Art Inselsberger*
15 **Theme Competition**
22 **Child Photography** presented by *Leon Hertzson*

May 2004
6 **Board Meeting**
13 **Competition** judged by Art Donnelly
20 **Program**
27 **End of Year Competition** judged by Gerald Kraus, Robert Ulberg, & Dennis Golin

June 2004
18 **Annual Awards Dinner** Milleridge Inn, 6:30 PM

Digital Camera Sensors; **what you should know**

Digital cameras use light sensitive electronic sensors instead of film. There are two main types of sensors: CCD (charge coupled device) and CMOS (complementary metal oxide semiconductor). Common to all types, is an array of light-sensitive areas called photosites. These are arranged in a grid of rows and columns. Each photosite converts the light striking it into an electrical charge.

Unlike film crystals, pixels of silicon require that light strike them perpendicularly. To increase angular response, some sensors use a tiny lens over each pixel. In some cases the cost of these lenses can be twice the cost of the sensor, but a wider angular response at the pixel level allows designers to use of a more compact, less expensive lens. Most current digital cameras are based on CCDs. Because they are made in relatively limited amounts, CCD sensors are expensive. On the other hand, CMOS sensors are made with the same technology that is used to produce computer chips; therefore their production cost is less. In addition, circuitry can be added to a CMOS sensor, eliminating the need for some external chips. The early problems associated with CMOS sensors such as high noise level have largely resolved, although problems remain. CCD sensors still hold the edge in terms of noise level and fidelity. The Canon D-30 and D-60 SLR cameras use CMOS sensors.

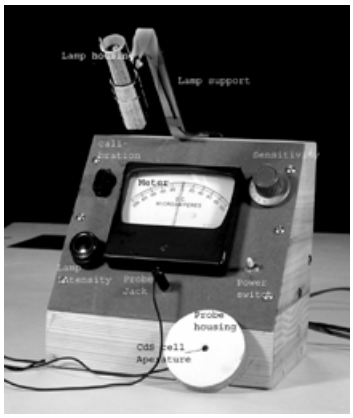
Measuring the intensity of light passing through colored filters to represent all possible colors generates the color information in a digital camera. The most expensive systems use three separate sensors, each covered by the appropriate filter. However, the most common and cost effective technique is to place an array of colored filters over the photosites of a single sensor. Two filter arrays are commonly used: RGGB and CYMG. With the RGGB (Bayer) pattern, odd numbered rows of photosites are covered by alternating red and green filters. Alternating green and blue filters cover even numbered rows. CYMG is a more complex filter array. It uses the primary colors (cyan, yellow, and magenta) in the subtractive process (commonly used in printers) plus green. This array is used in Nikon Coolpix cameras. Since the eye is most sensitive to green, green filters are added to this array. Likewise, in the RGGB array, there are twice as many green filters as red or blue.

Because it takes 4 photosites to complete a pixel, digital cameras use interpolation to achieve the advertised pixel count. The camera's software examines a block of adjacent pixels to determine the missing values for each pixel location. For example, consider a red pixel. The software will determine its blue value by averaging the values of the surrounding blue pixels. Likewise, it will determine the green value by averaging the surrounding green pixels. The software used to do this uses "demosaicing algorithms," because it converts a mosaic of separate colors into a mosaic of true colors.

New Developments (check the following vendor websites for details on specific sensors)
Sigma: the Foveon X3 microchip "stacks" a red green and blue sensor at each photosite. Because each site captures all three colors, the X3 achieves three times the resolution of comparable sensors.
Fuji: The Super CCD HR shrinks the size of each pixel sensor, allowing twice as many to fit on the same size chip. The second new Fuji sensor chip, the CCD SR, has a similar megapixel count but mixes regular pixel sensors with a new type designed to capture high-intensity light. The result according to Fuji is improved dynamic range.
Nikon: JFET LBCAST (Lateral Buried Charge Accumulator and Sensing Transistor array). Employed in Nikon's D2H. Achieves 8-frames/sec. data capture with improved sensitivity, dynamic range and color reproduction. .
Canon: DIGIC (Digital Imaging Core) puts CCD control, Auto Exposure/Auto Focus/ Auto White Balance, Signal processing, JPEG compression and expansion, memory card control and Display on a single chip.

D.I.Y. **(photo-nerd department)**

Building A Darkroom Photometer



Have you ever used a soldering iron? Do you know what a volt is? If so, continue to read. If not, what the hell, you may find this amusing anyway.

Background

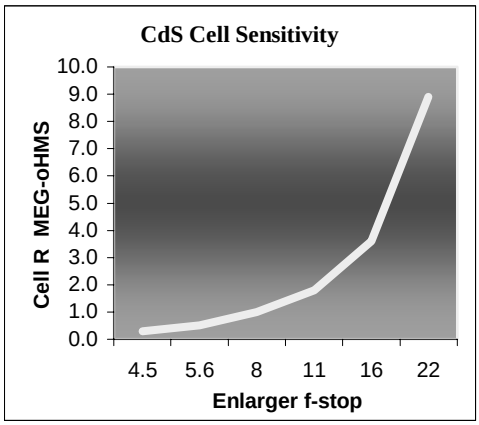
You don't use trial and error to determine exposure in your camera, so why should you guess in the darkroom. The author has constructed a number of devices for determining exposure of B&W photographic paper in the darkroom. The goal is to minimize waste of time and paper. The analog device described here, was found to be the most useful. If you have to buy all the parts, the total cost of materials will be about $40. Mine was built using only surplus parts on hand.

The heart of the photometer is a cadmium sulfide (CdS) cell. A CdS cell is a solid-state device whose resistance changes in response to light. Think of it a light sensitive resistor. The CdS cell forms one arm of a bridge circuit. One of the advantages of a bridge circuit is that it neutralizes environmental effects such as voltage fluctuation and changes in temperature. The graph shows the response of the CdS cell to changes of brightness at the enlarger easel. On average, each f-stop change will cause of deflection of 20% of full scale on the meter. The slope should be similar regardless of enlarger used, but the curve will shift left or right depending on the amount of light transmitted by the enlarger.

Parts list

Symbol	Descr. & Radio Shack No.		Cost
C1, C2	Capacitor 1 mfd, 250V	272-1055	0.99
CdS	Photo resistor	276-1657	2.69
D1..D4	Full wave bridge rect.	276-1173	2.69
L1	Type 47 lamp,		
	6.3 V, 150 ma	272-110	1.49/2
M1	zero center 100 uA meter		
	www.superssales.com/mtrdcua.html		12.00
R1, R2	Resistor	271-1356	0.99,/5
R3	Potentiometer,		
	I meg 0.5W linear	271-211	2.79
R4	Potentiometer, 50 Ohms, 1 watt		
R4 alt.	Resistor, 50 ohm, 10 watt	271-133	1.69/2
R5	Resistor 33 K	271-1129	0.99
R6	Resistor 3.3 Meg	271-312	11.99/500
S1	SPST switch	275-324	2.99/2

** R4 alt. Is a replacement for R4



The indicator is a zero-center microammeter. (It measures electrical current in units of 1-millionth of an ampere). Zero-center means that with no current flowing through the meter it will register 0 (null) at the center of the scale. "Positive" current flow will move the needle to the right. "Negative" current flow will move the needle to the left. The meter used for this project is a 100-0-100 microammeter, but a 50-0-50 unit could also be used.

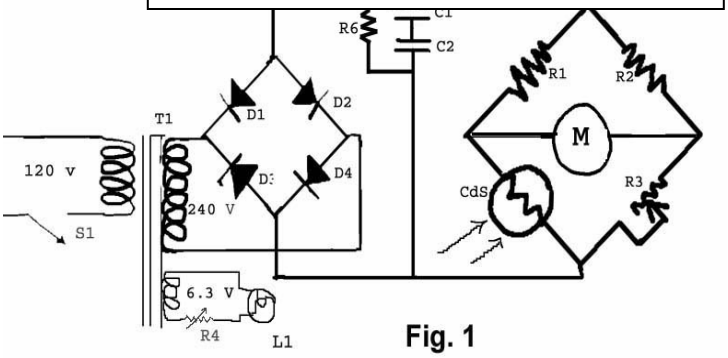


Fig. 1

How it works

The transformer (T1) supplies 240 volts to a full-wave rectifier (diodes D1 through D4). The rectifier supplies pulsating direct current to capacitors (C1, C2), to produce 360 volts DC, which is applied to the bridge circuit. R5 is a current limiting resistor and R6 discharges the capacitors when the unit is turned off. Not shown on the schematic are two silicone diodes across the meter terminals to protect the meter.

When the left and right arms of the bridge resistances are equal, the meter reading will be null. When light falling on the CdS cell changes, the bridge will become unbalanced and read either a plus or minus value depending on whether the intensity of light falling on it increases or decreases. R3 is used to calibrate the bridge to a balanced condition.

A separate winding on the transformer supplies voltage to an optional pilot light consisting of a 6.3 V bulb enclosed in a metal cylinder with a convex lens at the end to project light onto the meter face when the darkroom lights are off. An aluminum arm holds the cylinder in alignment. To prevent paper fogging, the lamp is dimmed through adjustment of R4. If R4 is not available, substitute a fixed resistance (see parts list) so that its color temperature approximates that of an OC type safelight.

To take a reading, the probe containing the CdS cell is placed under the projected image on the ease at the spot, which you designate as 18% gray. Alternatively, you may prefer to work on maximum black (the highest intensity light falling on the easel). Whichever method you choose to calibrate will be your method for using the instrument in the future.

Construction Caution- this device uses high voltages. Do not attempt construction unless you are experienced with electrical circuits. Construction details will not be covered but you can reach the author at *barryg@gbronline.com*. The voltage is not critical, but the higher within practical limits, the more sensitive the system will be. Most parts are available at your local Radio Shack. The CdS cell is connected to the meter via a miniature jack, but you can hard-wire it. I used a surplus round plastic filter holder to fashion a suitable probe to house the CDS cell. A piece of white mat board with a hole to expose the CdS cell was glued to the face of the container to allow easy placement of the probe while observing the projected image from the enlarger (see photo). It also helps to weight the container. I used some rolled up lead (plumbers) solder.

Calibrating the meter Using a negative with good distribution of tonal values, determine the exposure time as you normally would. I recommend using an enlarger f-stop about 3 stops down from wide open (this should be f8 for f11). After confirming correct exposure and without paper on the easel, place the meter probe on an appropriate area of the projected image. Adjust the calibration control (R3) until the meter needle reads “0”. Your meter is now calibrated. Your standard time (seconds of exposure) will be the time used to make the calibration print. If you have an enlarger timer, set it to that time.

Using the meter Make all your focusing and cropping adjustments. Place the meter probe on an area of image that should be rendered as 18% gray or maximum black (consistent with your calibration). Adjust the lens diaphragm until the meter is nulled (reads “0”). That’s it! A more sophisticated application for the meter could be to measure gamma or to determine the paper the grade needed or VC filter to use.

Questions? More information? Ask me at barryg@gbronline.com.

This column is an experiment. I would like to determine the degree of technical material the readership of the Viewfinder find desirable. Your feedback will determine whether this type of column will be continued in the future.

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Moshe Markewitz

Viewfinder Editor
Barry Goldstein

Whoops *a poem by Carol Goldstein*

I removed his photo from the envelope,
Taken by the lake.
My true love was beheaded,
What a horrible mistake!
Next time I use my camera,
I won't be such a clod. My order's in at B&H…I'm buying a tripod.

Mark your calendar

Friday night 6:30 PM, June 18th, for the Annual Awards Dinner. There will be a cocktail hour, hordoevres, cash bar and a wonderful dinner at the beautiful Milleridge Inn. As a special treat this year, Barbara Divis will sing several selections. The price is the best surprise; only $42.00 per person.

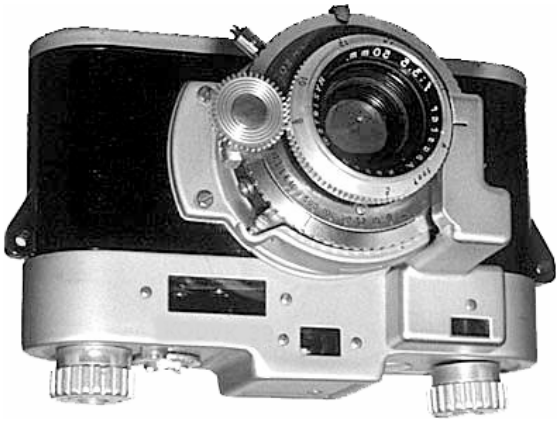
Did you know? The first two letters of a Kodak lens serial number gives you the year of manufacture according to the code letters, "CAMEROSITY," where C=1, A=2…Y=0. e.g.; a Kodak lens with serial number EY665 would have been manufactured in 1940.

Name the Camera

Last month's mystery camera

Last month's mystery camera was the Exa, not to be confused with Exakta or Exacta (both spellings have been and are used). Congratulations to Irv Melnick, obviously a connoisseur of classic cameras, who made a correct identification. The Exa was born in 1951 in U.S.S.R. occupied Dresden, at the same time as the Exakta Varex VX. Solid compact and simple to use, you can mount Exakta accessories, including a waist level finder, prisms and lenses. The shutter design is unique. Instead of using a shutter curtain, the Exa uses the mirror box itself as the first curtain, then a rotating steel barrel hidden behind the mirror acts a the second curtain. Unfortunately there is a limit to how quickly the mirror can flip up and the barrel can rotate. This explains why the shutter is limited to speeds from 1/25 to 1/150. For some time, Ihagee was the largest camera manufacturer in Germany, but the Zeiss-Ikon conglomerate gobbled it up in the early post-War period.

This month's mystery camera



You may think that this camera is so ugly only a collector could find it attractive. It was made between 1940 and 1948. The unusual external rangefinder coupling is the result of adding a rangefinder to an earlier version of the camera without redesigning the body and lens mount. For the same reason, the shutter release is a lever on the front of the camera next to the focus wheel instead of on top. The back comes off like on an Argus C4, its main competitor. The camera was available with either an "Anastigmat Special" lens or an upgraded "Anastar" lens as found on the Reflex III, its contemporary. The camera body is entirely metal and of rugged design, but quit susceptible to invasion by dust and dirt. Never the less, the camera saw a lot of action by the military during WWII. There was even a special khaki version for that purpose. Hint; the manufacturer is American.

Differences Between Professional & Amateur Chrome Films *Orrin Edwards*

Although the emulsions are basically the same, professional chrome film has a slightly higher base density that makes for better scanner separations. The whites are more consistent from scanned professional chrome. The slightly higher base density also makes for more detail in the brightest areas. It should be stressed that this difference is minimal but it does exist. Likewise, amateur film has a slightly lower base density for crisper looking images when projected. The slightly higher base density has another advantage. It makes the film less susceptible to edge fogging. This fogging or "edge effect" can occur, for example, when film is loaded in bright sunlight. With professional film the fogging will be minimized if it occurs at all.

Professional film is kept under controlled (below 15 Degrees C) conditions. Photographic emulsion is subject to change after the manufacturing process. Three variables that can affect and in the end deteriorate the emulsion are time, temperature and humidity. Fuji Film is packaged such that humidity is not a factor. Time and temperature are the main factors that cause emulsion or film to change. We can control the temperature Variable by keeping the film cool. This is very import since lower temperatures slow the aging process. Time is the only variable that can't be controlled through any other means other shooting and processing the film.

Since the time, temperature, and humidity affect all emulsions, it would be better if amateur film as well as Professional film was kept cool. However, it is not practical due to cost to keep all film in a controlled, cool environment. This also illustrates the reasons for expiration dates on film. Fujichrome emulsions' initial aging is excellent so no ripening is needed. Fuji Film's tight control on quality eliminates the need to select one emulsion over another for purposes of labeling it as professional product vs. an amateur product. *Used with permission of Steve Howe, Fuji*

Bulletin Board

1/18-4/17/04 **"Explosive Photography,"** Nassau County Museum of Art, An original exhibition of the work of seven major photographers: Cindy Sherman, Bernd, Hilla Becher, Thomas Struth, Andreas Gursky, Gregory Crewdson and John Baldessari.

6/1-7/29/04 **From the Collection: "Print and Photograph Portfolios"** Emily Lowe Gallery, Lowe Hall, Hofstra University

Attention Snowbirds: 1/27 – 1/31/04 **"FotoFusion,"** 9th Annual International Festival of Photography & Digital Imaging, Palm Beach Photographic Centre, 55 NE 2nd Ave., Delray Beach Fla 33444, www.workshop.org

2/12-2/15/04 **Association of International Photography Art Dealers Photography Show**, NY Hilton Hotel.

T**he New York Public Library**- Berenice Abbott: Changing New York, 1935-1938, Lewis Wickes Hine: Construction of the Empire State Building, Work Portraits, 1920 - 1939. Room 308 Prints and Photographs Study Room, Fifth Avenue and 42nd Street.

Starting 12/12/04- **International Center of Photography,** "Only Skin Deep; Changing Visions of the American Self." 1133 Ave of the Americas at 43rd St. (212) 768-4682. Adm. $8, Students/Senior $6.

Spring 2004 continuing education courses at **Nassau Community College,** "The Art of Photography," Instructor: Rick Recard - Four sessions on Saturdays starting March 6, $70. "Creative Photography," Ten sessions on Wednesdays starting March 3, $125.

Register with and visit **phototakers.com** on the web for photography discussion and inspiration. Also, visit the websites of Alan Agdern, Orrin Edwards, Frank Iraggi and Maurice Yohai available as links form the club website.

Don't forget Sunday 8 am at the On Parade Diner