



# Crystal Lake Camera Club Newsletter

Serving Crystal Lake, IL and surrounding communities since 1980

December, 2015

Year 2014-2015, Issue 16

## DECEMBER SEASONAL IMAGE



To all of our members, readers and their families  
**HAPPY HOLIDAYS and  
BEST WISHES FOR A PROSPEROUS 2016**

HTTP://WALLALPHACODERS.COM

[Website](#)

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### CLCC Officers

(September, 2014 - December, 2015)

#### • Co-Presidents :

*Al Popp \**  
*Chuck Rasmussen \**

#### • Vice President :

*Peter Pelke II \**

#### • Treasurer :

*Grace Moline \**

#### • Secretary :

Vacant

### CLCC Support Staff

- **Newsletter Editor:** *Rich Bickham \**
- **Webmaster:** *Sandy Wittman*
- **CACCA Delegate:** *Lyle Anderson \**
- **CACCA Delegate:** *Royal Pitchford*
- **Advisor:** *David Jilek \**
- **Facebook Admin:** *Scott Migaldi*  
**Assist:** *Alexis Cooper*  
**Assist:** *Margie Paffrath*
- **Membership:** *Mariela Ryan \**
- **Publicity:** *Roger Willingham*
- **Competition:** *Jeff Chemelewski*
- **Outings:** *Rinus Lammers*
- **Refreshments:** *Larry Swanson*  
*\* CLCC Board Member*

Since no one submitted a December picture that appropriately captured the festive mood of the holidays, the above photograph was taken off the internet.

Your photo can appear here next month. See the "Opportunities" section on page 7 for the entry procedure. ◊



Give  
it a  
shot !



## Presidents' Column

Can you believe it is December already? Another few days and it will be 2016. My, how fast two years go by.

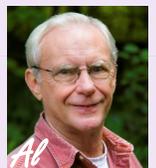
When I asked **Al Popp** to be the Co-President with me back in 2013, I never thought our club would become so big and generate so much fun. We have grown from around 39 members to 93 at last count, and the members keep coming aboard.

In the beginning, Al and I had some ideas. We discussed what we wanted to do, and where we wanted the club to go. After tossing our ideas back and forth, we agreed about a direction and put a plan in place. The rest, as they say, is history.

Since this is the end of 2015, and we now begin our new year on the first of January, I wanted to take a minute to let all of you know how we got to where we are today, which is 93 enthusiastic members strong. It all happened because so many of you stepped up and participated, volunteered and contributed to the effort of developing programs, and suggested ways of having some fun taking and making pictures.

There has been a re-organization of some of the BOD since we began, but most have continued to maintain their presence and to excel in their desire and dedication to make this a better club. Here are some of those accomplishments and the folks that made it all happen.

**Lyle Anderson**, the former Club President, has taken over the duties in several areas. He is our CACCA representative - and through his exhaustive efforts, he gets all of our prints ready and organized to take to CACCA for their monthly competitions. That doesn't sound like a big deal, but there are many requirements to consider and much preparation necessary to collect and



See **President**, Page 2

President, from Page 1

sort the prints, and prepare the paperwork for CACCA competitions. He also organizes and schedules all of the judges that come to our club meetings when competitions are scheduled. Lyle, and co-delegate **Royal Pitchford**, attend the delegates' meetings at CACCA and return with all the entertaining news and goings on at CACCA. Lyle also prints all the name badges for our hospitality table at the monthly Club meetings.

**Peter Pelke II**, your Vice-President and Director of Education, has contributed endless hours of his valuable free time to develop most of the education classes we provide. He generates the course materials, creates the flyers, prepares the programs and establishes various classes based on what you have asked us to provide. The interesting aspect of his syllabus design for the classes is that he designed them so anyone can take over and present them. No small feat and a brilliant consideration for the future of the classes. Without his efforts there would be fewer classes. Additionally, as a BOD member he chaired a committee to recommend changes to the club's by-laws and constitution - BOD is presently considering the changes.

**Jeff Chemelewski**, also a past President of our club, has taken on the responsibility of ordering and maintaining our supply of mat boards for the club. He has also taken the reigns of coordinating the necessary paperwork and volunteers needed to ready our prints for our semi-monthly competition within the Club. He gets excellent assistance from many of the members he recruits to help him. Jeff has also produced some of the best presentations our Club has had the privilege of seeing.

**Mariela Ryan** is our membership coordinator and hospitality hostess. She makes sure first time guests at our monthly meetings receive a warm greeting, and fields questions they may have with a welcoming smile so guests are comfortable, relaxed and ready to enjoy themselves. She does all of this with great finesse, and her infectious smile guarantees the guests will feel welcome.

I believe **Larry Swanson** has been a member of our Club since day one, and he has served as Secretary and Treasurer for so many years, everyone has lost count. But none of us forget who brings the coffee and donuts each month, and what a wonderful and generous gift they are. 20 plus years, 12 months a year, fresh donuts and hot coffee. Larry has also maintained the competition-scoring equipment the judges use during our Club's competitions. Again, he has done it for so many years we really don't know how long it has been. As the past Treasurer he maintained the books for as long as most can remember too.

**Rich Bickham**, without being asked, stepped up and took over the duties of Club Newsletter editor. In the Club's first entry into PSA's annual newsletter competition this year, nationally I might add, our newsletter scored third place in the Small Clubs category, and also received an award for Best Variety of Material. All of us who have had the privilege of reading his outstanding monthly publications can understand why the newsletter was awarded these honors. Our Club has had numerous requests by many area camera clubs to be included on the email list. CACCA has requested permission from us to use some of the articles our club members produce in their CACCA newsletter.

**Grace Moline**, our new Treasurer, has jumped in with wonderful enthusiasm, and with the assistance of Quicken, has begun to maintain our financial status. Grace has been involved with the BOD for quite a while, assisting wherever she could and generously attending some meetings where she has introduced numerous brilliant ideas and excellent comments to make the Club better for all of us.

**Maureen Harris** is our "Go To" member. She has repeatedly come forward and asked what she can do to help. For those of you who may stay late after a meeting, you will always see her helping to clean up, straighten the room and do anything necessary to assist the BOD before we leave and lockup. She has made herself available 24/7 for the needs of the Club.

**David Jilek**, our past Vice President, relinquished his position when he thought he was going to have to move to Missouri for employment reasons. Well, after returning from Missouri, the BOD kept him involved because of his extensive knowledge of photography. His presentations are exceptional and his skill base allows him to help many of us when we seem to get lost in the myriad of directions photography may send us. David remains as a member of the BOD at our invitation.

**Mario Salazar** took the bull by the horns and recreated a Facebook page for us that actually began to work for the Club. **Alexis Cooper** assisted him in this endeavor. Mario created a Facebook page that brought many of you to the Club and introduced you to us. Mario has relinquished the page to **Scott Migaldi** who is now contributing his style and expertise to the page, incorporating his ideas to make it more fun for everyone with help from both Alexis and **Margie Paffrath**. We hope all of you check it out and refer it to your friends.

**Sandy Wittman**, our Webmaster, is another

Continued at top of right column

member that stepped up without being asked to volunteer to run our web page. Her creativity and knowledge of the web has given us a page to be proud of. It has introduced many of you to our Club and offered timely events and information necessary to participate in our many activities. She is constantly coming up with new ideas and suggestions for the page and her willingness to do this is obvious in the beauty and simplicity of the page itself.

**Rinus Lammers**, another member, who is relatively new to our Club, just stepped up and volunteered to take over the "Outing" category for the Club. Well, many of us know how that is going. Since he has taken leadership our outings have been incredibly successful, and so many of you are gaining much knowledge from others that go along to assist you as mentors. Rinus is one of those folks who just likes to get it done, and what a wonderful plan he has set in motion.

There are so many others that have jumped in with help. I must confess, I am doing this from memory, so if I miss someone, I am sorry. Here are others that have added ideas or contributed to making your club a more fun opportunity for all of us.

*Teresa Baber, Paul Litke, Jim Pierce, Linda DiGregor, Ernie Hagenow, Tom Hughes, Jim Petersen and Tom Mickow.*

I know I've missed some of you, and there are certainly many more that have contributed to the betterment of our Club.

Both Al and I want to invite all of you to feel free in joining our troop of members that has asked to help and assist. As a group, we have a good time, learn a bunch and enjoy the company of others who enjoy the hobby of photography.

This coming year we are going to introduce some of our plans for the 2016 year, and with all of your help, encouragement and participation we believe this next year is going to generate a whole new dimension in what the Club can do for its members. All of this will be explained at the January meeting, which by the way, is the opportunity for all of you to express your ideas of what you feel the Club can do to help you. If an open meeting is a place you are uncomfortable with to describe your wishes, please feel free to contact any BOD via phone or email to express your thoughts. All ideas are welcome, and after all, this really is all about FUN, isn't it? **Merry Christmas** everyone and a joyous **New Year** from your BOD.

Chuck ◊

## ELECTION OF 2016 CLCC OFFICERS

The election of CLCC Officers for 2016 will take place at the club's December 1 meeting. The slate of candidates as of 11/24/15 is shown below:



**Co-Presidents:** Al Popp & Chuck Rasmussen

**Vice President:** Peter Pelke II

**Treasurer:** Grace Moline

**Secretary:** Jim Petersen

All paid-up club members (dues paid through 2015), and who attend the December 1 meeting are eligible to vote.



Nominations will be accepted from the floor prior to voting only if the nominee has agreed to run beforehand, and is a paid-up club member. ◊

## IT'S TIME TO PAY 2016 CLUB MEMBERSHIP DUES

Just a reminder that it's that time of year again - club dues are due. Your \$25 membership fee will entitle you to participate in all of our club's activities (such as competitions, outings, classes and more) during the coming year. The December meeting is a good opportunity for new members to join, or current members to renew. Club Treasurer **Grace Moline** will be happy to take your payment, either by check (preferred) or with cash. If you cannot attend the meeting, email Grace ([igeagle01@gmail.com](mailto:igeagle01@gmail.com)) to make other arrangements for payment. ◊

## ICONIC PICTURE OF A DECEMBER DAY IN HISTORY

Rich Bickham

Transportation in the early years of the twentieth century was certainly primitive by today's standards. The horse, train and steam ship were the main modes of assisted transportation for land and sea travel. Gasoline powered cars were few in number, the industry being in its infancy. Bicycles (self powered) were gaining in popularity, but were limited to relatively short range travel. Air travel was limited to hot air balloons, which were lighter-than-air crafts that could only be controlled to move vertically (and quite sluggishly) with lateral movement at the mercy of the wind.

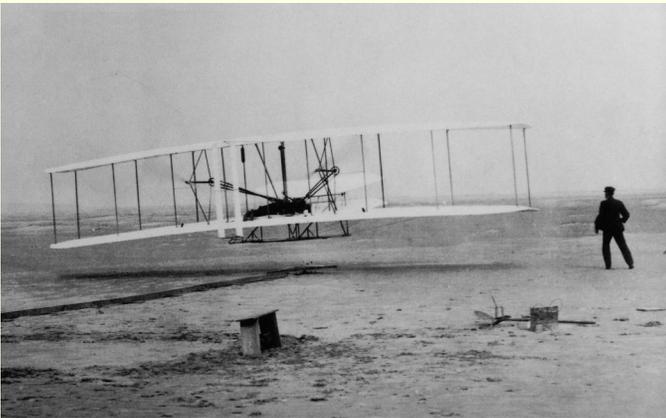
People looked in wonder at the birds who effortlessly traversed the sky, unencumbered by land-based obstacles – and dreamed of one day being able to enjoy powered travel by air. Among those who did more than just dream were two brothers who designed and built bicycles in Dayton, Ohio – *Orville and Wilbur Wright*.

The Wright brothers had seriously experimented with their own designs for flying machines (first with gliders) since 1898, as had a few others across the world. It was dangerous business though, during which numerous men lost their lives trying.

One of the many problems facing those who sought to fly was finding a suitably 'safe' area of land over which to test their designs. It had to be large in area, free of obstacles such as buildings, trees, shrubbery, etc., and have a soft, 'crash-friendly' surface area throughout. Another requirement was a strong wind of relatively constant direction in order to provide enough lift-assist to get air borne. While Ohio served their purpose for early experiments with small models, it came nowhere near the above requirements for a larger, human piloted craft.

After several years of looking for a suitable location, Wilbur contacted the U.S. Weather Bureau who pointed him to a long and narrow barrier island in the outer banks off the coast of North Carolina. It had one town (Kitty Hawk - population 48) and its eight square miles of mostly barren sand beach with a few shallow ponds, included only a few houses and a Life-Saving Station. The weather was usually nasty. It took the better part of a day to get there from mainland 'civilization', only about twenty miles away, as Wilbur discovered when he first visited it in 1900.

The brothers worked on and off in Kitty Hawk as well as at their shop in Dayton, OH for the next three years while they refined their designs. When on the island they received help from several of the curious locals, who also watched after their equipment in their absence. Finally on December 17, 1903 the stage was set for their first successful flight about four miles south of the town of Kitty Hawk at a place called Kill Devil Hills. At 10:35 a.m. the Wright Flyer (as it was called) was successfully flown into a freezing wind, over a distance of 120 feet in a 12 second



First Flight at Kitty Hawk

John T. Daniels

flight. The photograph above was taken by local *John T. Daniels* with a Gundlach Korona V camera with a pneumatic shutter, using a wooden tripod. It was exposed on a 5 x 7 inch glass plate. It shows Orville in a prone position at the controls while Wilbur runs along on the side. It is widely considered to be one of the most famous photographs ever taken. Aside from Daniels and the Wrights, there were only four others (all locals) who witnessed the event. Three other successful flights were made later that day, including one of 852 feet of 59 seconds duration made with Wilbur at the controls.

The glass plate negative of the image currently resides at the U.S. Library of Congress, along with 302 more glass plate negatives of the Wright brothers efforts to develop and advance the science of powered flight dating from 1898 to 1911. Many other written documents from the same time span are in the collection. ◇



## ASK A PRO

Jim Pierce

Send your questions to:  
[downtownprophoto@sbcglobal.net](mailto:downtownprophoto@sbcglobal.net)

Please do not submit model-specific questions about cameras.

Jim did not receive a question this month. ☹️ ◇

## A JOB WELL DONE

Roger Willingham

When I saw a few spots in my images that shouldn't have been there, I took my cameras to *Jim Pierce* at Downtown Pro Photo for cleaning. After checking the sensor, he said it looked pretty good and only two small spots needed attention. Jim did a fine job. It took just a few minutes and I was ready to take some more pictures. Other services provided by Jim at 150 Virginia Road, Unit 3 are printing (regular, fine art, and canvas), photo cards, retouching, Photoshop training, print mounting, laminating, album binding, design work, framing, matting, and glass. You can contact him at 815-788-9100 or [downtownprophoto@sbcglobal.net](mailto:downtownprophoto@sbcglobal.net). ◇

## TIP OF THE MONTH

Submitted by *Peter Pelke II*

The following are links from the November, 2015 issue of the New York Institute of Photography Photo Tips Newsletter.

The newsletter is a great place to get some tips. In the November issue there are tips from three professional photographers:

*Joe McNally* - Five tips regarding working on visual narrative projects with a deadline:

[https://www.nyip.edu/photo-articles/archive/5-tips-from-joe-mcnally?utm\\_source=iContact&utm\\_medium=email&utm\\_campaign=NYIP&utm\\_content=NYIP+November+Newsletter](https://www.nyip.edu/photo-articles/archive/5-tips-from-joe-mcnally?utm_source=iContact&utm_medium=email&utm_campaign=NYIP&utm_content=NYIP+November+Newsletter)

*Daniel Norton* - Seven tips related to photographing food and beverages:

[https://www.nyip.edu/photo-articles/archive/7-food-photography-tips-from-daniel-norton?utm\\_source=iContact&utm\\_medium=email&utm\\_campaign=NYIP&utm\\_content=NYIP+November+Newsletter](https://www.nyip.edu/photo-articles/archive/7-food-photography-tips-from-daniel-norton?utm_source=iContact&utm_medium=email&utm_campaign=NYIP&utm_content=NYIP+November+Newsletter)

*Chris Corradino* - Several tips on how to approach, and photograph portraits of strangers:

[https://www.nyip.edu/photo-articles/archive/photographing-at-the-photoplus-expo?utm\\_source=iContact&utm\\_medium=email&utm\\_campaign=NYIP&utm\\_content=NYIP+November+Newsletter](https://www.nyip.edu/photo-articles/archive/photographing-at-the-photoplus-expo?utm_source=iContact&utm_medium=email&utm_campaign=NYIP&utm_content=NYIP+November+Newsletter) You can subscribe to the NYIP

You can subscribe to the free NYIP Photo Tips Newsletter at <https://www.nyip.edu/photo-articles/newsletter>. ◇

## LINK OF THE MONTH

Submitted by *Rich Bickham*

With the holidays nearly upon us, perhaps some readers have wondered how they might use their photography hobby or career to help people in need. With that idea in mind, I was searching the internet and ran across the following website, which describes twelve organizations which provide photographers the opportunity to do just that on a local, national or international basis.

<http://www.poppphoto.com/how-to/2013/05/giving-back-through-photography-12-great-ways-to-use-your-camera-good>

*I have not checked the background of these organizations, so cannot personally vouch for their legitimacy. Readers are advised to investigate ones of interest as they deem appropriate.* - Ed ◇

## CACCA NOVEMBER COMPETITION RESULTS

Congratulations to the following CLCC members who were winners in the CACCA competition held in November:

### Doug Frey:

"Mount Moran Evening Storm" - DPI - Award

Doug's photograph appeared in the November, 2015 newsletter.

### Sandra Wittman:

"Awkward Landing Coming Up" - DPI - Award

"School's Out Forever" - Small Color - Honorable Mention



School's Out Forever

Sandra Wittman

## CLCC TO DISPLAY AT DOLE MANSION

Club members *Peter Pelke II* and *Connie Sonnenberg* have arranged a showing of CLCC members' photographs during February, 2016 at the Lakeside Legacy Arts Park (Dole Mansion) in Crystal Lake.

In coordination with the Lakeside Legacy Arts Park, CLCC is hereby calling for your best prints. The Club is going to be displaying images at the Sage Hallway Gallery during the February, 2016 art show. All CLCC members are encouraged to submit framed prints of their best or favorite works of photographic art for display. The prints must be framed with a wire across the back for easy display. An 8x10 print mounted to an 11x14 black mat is the recommended minimum size, but you can show any size you choose. There is a minimum of 2 prints per member based on member participation (less participation - more prints in multiples of 2; more participation - limited to only two). Members are encouraged to attend the first Friday event to showcase their art to their family, friends and any contacts they may have. This is a FREE event (donations welcome) with a cash bar.

A title card, to be mounted on the wall next to your print, the size of a business card (2 inches tall by 3.5 inches wide), which can be a typed piece of paper with your name, title of print and price (or NFS if piece is Not For Sale). The back of the framed image must be labeled with your name, print title, phone number and email address.

*Peter Pelke* and the Lakeside Legacy Arts Park will need a list of artists by December 15, 2015 in order to properly promote the event through their website, newspapers, and social media. Please contact Peter ( [railgrinch@gmail.com](mailto:railgrinch@gmail.com) ) as soon as possible if you wish to participate in this creative event. You may also submit a brief *artistic statement* along with your artwork, limited to one 8.5 x11" piece of paper on foam core for durability. ♦

## THE POWER OF PHOTOGRAPHY

Sandra Wittman

So many children are poor and homeless around the world. What does the future hold for these children? Once in a while there is a wonderful story that comes out of the terrible lives of these children and shines a light on the restorative power of photography.

Twelve years ago, *Mario Macilau* was 14 and living on the streets of Maputo, the capital of Mozambique. Macilau dreamed of being a photo journalist, but when his father left for South Africa to try to find work, he was left to provide for his family by selling his mother's biscuits in the local market and doing odd jobs. It wasn't safe and he often had to resort to crime to survive. However, all along he was reading books when he could get them and learning English from a local NGO (non-governmental organization).

He said, "When I was about 14, I borrowed a friend's camera. I started to take photographs of my surroundings, documenting people from the townships as they travelled to the city to sell their things. They were black-and-white photos, which I developed in a darkroom I made in my mother's house. I was teaching myself how to do things, practicing whenever I could, but it was difficult for me to pay for the film and the chemicals."

When he was 23, someone he knew who worked for a Portuguese family was given a Nikon FM2 film camera. He didn't know how to work it so Macilau gave him a cell phone that his mother had been given for the camera. He told his mother that he had been assaulted and the cell phone was taken. "... we used to go to the library and log on to different chat rooms and networks. And I learned how to create a blog, and I posted my photos online. I started to get positive feedback, and eventually I was invited to take part in exhibitions."

Now, over a decade later, Macilau still lives in Maputo but travels the world as a professional photographer. The artist's photographs, which unveil the human condition under the oppression of injustice and the hardship of poverty, have been exhibited internationally. His newest work, *Growing Up in Darkness*, is being exhibited in the Vatican pavilion of the Venice Biennale.

For more information and to see some of the photographs of *Mario Macilau*, see:

**Mario Macilau: The Street Child Who Became a Top Photographer**  
<http://www.bbc.com/news/magazine-34090145> ,

**Growing Up in Darkness**  
<http://www.cnn.com/2015/07/07/world/cnnphotos-mozambique-children-streets/> .

See **Power**, page 7



# IT'S BETWEEN YOU AND YOUR SUBJECT \*

## Image Preview System

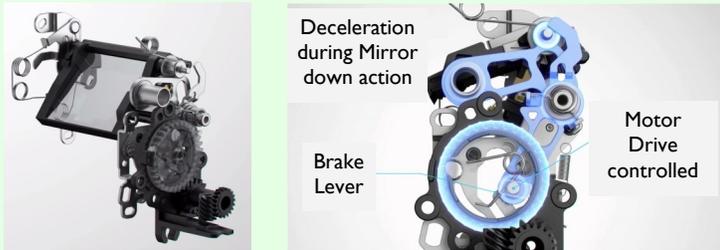
Rich Bickham

In this issue we discuss the technology of the Image Preview System (my terminology) comprised of the mirror mechanism, roof pentaprism, optical viewfinder and LCD (Liquid Crystal Display).

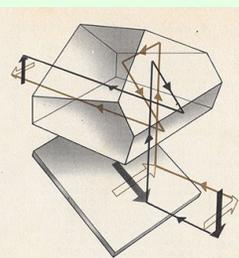


The figure on the left shows a cross section of a DSLR camera, including image preview system in the optical viewfinder mode. The upper picture shows the configuration prior to shutter release, with the mirror positioned to deflect light from the lens through a prism and into the optical viewfinder through which the photographer looks to compose the photograph. When the shutter is triggered, the mirror mechanism swings the mirror up 45° and then activates the shutter, allowing light from the lens to impinge on the image sensor (as shown in the lower picture) until the shutter closes, at which time the mirror swings back down to its original position, allowing light from the lens to again enter the optical viewfinder.

An example of a mirror mechanism is shown in the below left picture. It is a rather complex combination of brackets, springs and gears in addition to the mirror itself. It also includes a motor (some designs have two motors, one for mirror up-swing

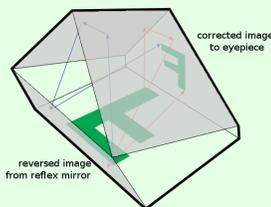


and one for mirror down-swing). Some very high resolution models such as Canon's 51 megapixel EOS 5DS include a mirror braking mechanism (similar in design to an automobile rotary break - see the above right picture) to decelerate the mirror at the end of its travel to avoid damage, de-calibration, and to reduce blur from the vibration (not normally noticeable on lower resolution cameras).



The roof pentaprism is a seven surface solid glass object, which reflects light from the mirror 90° to the optical viewfinder. It is called a pentaprism because only five of the surfaces transmit or reflect light (the other two side surfaces being required for structural support). One may wonder why a prism is required rather than just a second mirror. The reason is that light from the lens is reversed from reality (up is down, left is right) so the pentaprism is designed to reverse it again so the image appears normal when viewed through the viewfinder (see figure on the left). It is typically made from polished, high quality glass such as fused silica, and all reflective surfaces are smoothed to a small fraction of a wavelength of light (surface roughness should be on the order of 0.2 millionth of an inch), and coated with a thin film of reflective material such as silver. Some of the reflective surfaces require multiple coatings to correct for reflective interference, while others require an anti-reflective coating to absorb unwanted, incidental scattering. The relative angles between the various surfaces should be controlled to within about 0.001 degrees. The roof pentaprism is the reason that DSLRs have a dome of some shape on the top.

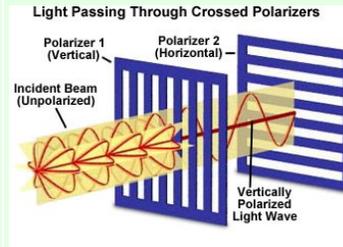
Lower cost DSLRs generally use a pentamirror (shown on the right) instead of a pentaprism. The two are similar in shape and performs the same function, but a pentamirror is made of plastic sheets with a reflective coating, which are combined to form a hollow structure. The pentamirror is lighter and lower cost than a pentaprism, but exhibits inferior performance.



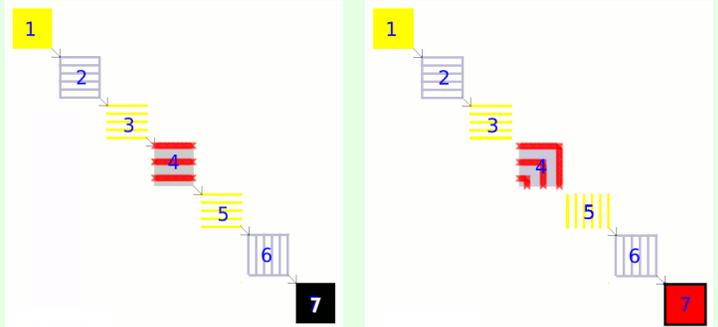
Many DSLRs offer a "Live View" mode which allows photographers to use the LCD on the back of the camera to compose a photograph. This functions by swinging the mirror up (thus not allowing light into the optical viewfinder) and routing the image

sensor data to the LCD. There is a minor delay in this process due to both the mirror mechanism operation and the scanning nature of the image sensor pixels, so trying to capture a fast moving subject at a particular 'instant' (such as a batter striking a baseball at the moment of impact) may be more problematic than using the optical viewfinder (which is virtually instantaneous). Mirrorless cameras do not suffer as much from this problem since there is no mirror.

The "heart" of a Liquid Crystal Display is a thin, sealed substrate (the size of the screen) comprised of tiny twisted nematic liquid crystals which can polarize light in particular directions by application of a voltage across the crystals. Polarization is the ability to selectively allow light (an electromagnetic wave) whose electric field lines are oriented in only one direction, to pass through the crystal. Light is generally randomly polarized, containing all electric field orientations. In a LCD, light whose electric field is either parallel or perpendicular to some arbitrary reference direction (usually referred to as horizontal or vertical, but is not necessarily so) is allowed to pass through the substrate - one polarization direction or the other, but not both, depending on the voltage applied across it. See figure on the left.

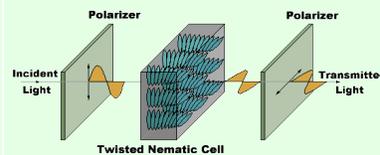


The LCD assembly is made up of multiple layers (including the liquid crystal substrate described above). The layers are illustrated below, along with a table that briefly describes the function of each.



Layer	Function	
	Left Figure (Pixel switched off)	Right Figure (Pixel switched on)
1	Randomly polarized light	
2	Polarizing Filter allows only horizontally polarized light through	
3	Horizontally polarized light	
4	Voltage applied across LCD substrate to allow horizontally polarized light through	Voltage applied across LCD substrate to rotate light electric field by 90 degrees
5	Horizontally polarized light (unchanged)	Vertically polarized light
6	Polarizing Filter allows only vertically polarized light through	
7	None of the horizontally polarized light gets through	Now vertically polarized light gets through

In layer 4 the twisted nematic liquid crystals twist the polarization of the light in response to the voltage across it. If the voltage is low only horizontally polarized light gets through. In the left figure the voltage is low enough to not change the horizontally polarized light, which is then blocked by layer 6 and no light gets through. In the figure on the right the voltage is high the light is rotated to a vertically polarized state, and layer 6 allows all the light through (for voltage between those two extremes, only a fraction of the light is allowed through). This is shown in the figure on the left, with horizontal and vertical reversed from the above description.



There are actually millions of these crystals within the layer 4 substrate, with many within even a single image pixel. The crystals within each pixel are independently controlled for red, green and blue channels through integrated circuit technology.

There are similar design variations of the above LCD implementation, depending on camera manufacturer and model - the above is only an example of one.

\* This is the twelfth and final column of the series that explored the technology contained within the various subsystems of the modern DSLR camera. See further comments in the "From the Editor" section of this issue on page 7. - Ed ♦

HTTP://WWW.AMATEURPHOTOGRAPHER.CO.UK

HTTP://WWW.CANONWATCH.COM

HTTP://WWW.PETAPIXEL.COM

HTTP://WWW.NIKON.COM

HTTP://WWW.OLYMPUSMICRO.COM

WWW.EXPLAINTHATSTUFF.COM

HTTP://GROUPS.CSAIL.MIT.EDU

# CHARTS & STATISTICS

The table on the right shows the PPI (Pixels Per Inch) \* resulting from an image taken at a particular camera resolution (shown along the left side of the chart) printed at a particular size (shown along the top of the chart in inches). The numbers within the table show the resulting PPI for the combination of camera resolution and print size. A color legend (subjective) is shown in the table on the below left. For example, an 8 megapixel image made into a 16x24 inch print requires a printer capable of 129 PPI and will result in a print of "Better" quality.

Color	Quality	Comments	PPI Range
	Superb	Just about the finest quality possible.	200+ PPI
	Excellent	The casual photographer will see no difference to a slight difference when compared to Superb.	150-199 PPI
	Better	Better than Good, but not as good as Excellent. The typical photographer will be very happy with prints of this quality.	100-149 PPI
	Good	Quality that your typical photographer will be happy with.	80-99 PPI
	Fair	Quality will depend on the individual picture. For larger size prints the typical photographer will find them acceptable, but the sharpness will not be as high as a Good quality print. Compelling subject matter may trump the loss of sharpness. But doesn't it always?!	79 PPI or less

Source: <https://photographyicon.com>

\* For those interested in the difference between PPI and DPI, a good video to watch can be found at <https://photographyicon.com/dpi-vs-ppi/>. - Ed ☐

		PRINT SIZE								
		8x12	11x14	16x20	16x24	20x30	24x36	30x45	40x60	50x75
CAMERA RESOLUTION	2MP	133	114	80	66	60	53	35	26	21
	3MP	193	165	115	96	77	64	51	38	30
	4MP	205	176	123	102	82	68	54	41	32
	5MP	216	185	129	121	86	72	57	43	34
	6MP	250	214	150	125	100	83	66	50	40
	7MP	256	219	153	128	102	85	68	51	40
	8MP	259	222	155	129	103	86	69	51	41
	9MP	290	249	174	145	116	96	77	58	46
	10MP	322	276	193	161	129	107	86	64	51
	11MP	338	290	203	169	135	112	90	67	54
	12.7MP	364	312	218	182	145	121	97	72	58
	16.6MP	416	356	249	208	166	138	110	83	66
	18MP	408	350	245	204	163	136	108	81	65
	21.1MP	468	401	280	234	187	156	124	93	74
	22MP	457	392	274	228	182	152	121	91	73
	31MP	541	464	324	270	216	180	133	108	86
39MP	601	515	360	300	240	200	160	120	96	
63MP	812	696	487	406	324	270	216	162	129	
35mm*	590	515	354	295	236	196	157	118	94	
6x6cm	944	809	566	472	377	314	251	188	151	
6x7cm	956	820	574	478	382	318	255	191	153	
4x5	988	847	592	494	395	329	263	197	158	
8x10	1383	1186	830	691	553	461	368	276	221	

## HOLIDAY HUMOR FOR THE END OF THE YEAR



Dogs get into the spirit of the holidays.

Cats could care less.



WHAT DID YOU GET FOR CHRISTMAS CHARLIE BROWN?

A GIFT CERTIFICATE FOR A 3-D PRINTER. GOOD GRIEF!!! WHAT AM I GOING TO DO WITH THAT?



**A PERFECT GIFT FOR THOSE WHO DON'T HAVE TIME TO TAKE PICTURES**



**INAPPROPRIATE GIFT FOR CARTOON CHARACTERS**

## CLCC IS A MEMBER OF THESE ORGANIZATIONS



Click Icons to Link

## FROM THE EDITOR

Rich Bickham

This month's "It's Between You and Your Subject" column is the twelfth and final column of this series which I began in the January, 2015 issue. Ignoring the first column which was an introductory overview, we began at the **subject** end of the DSLR with a discussion of lens technology in February, and worked our way toward the **you** end of the DSLR in this column, which discusses the technology of the image preview subsystem (see page 5). Along the way we discussed the technology of many of the DSLR's other subsystems between those two physical extremes. For reference, a summary is shown on the left below.

ISSUE (2015)	TOPIC
January	Introduction
February	Lens
March	Aperture
April	Shutter
May	Image Sensor
June	Image Processor
July	Autofocus
August	Lens Driver
September	Image Stabilization
October	Software, Firmware & ASICs
November	Electronic Flash
December	Image Preview Subsystem

I took on writing this monthly column as a challenge, my intention being twofold. One goal was to improve my knowledge and understanding of my DSLR. I certainly achieved that goal, along the way consulting over one hundred references (including websites, magazines and books). The other goal was to give readers an appreciation of not just the functions of the various parts and subsystems of the DSLR (with which most are already familiar) but to have them gain an appreciation of the technologies which make the DSLR possible, and I hope I have accomplished that.

I am now thinking about a broad area of potential interest for a column to run

next year, so I would like to hear what would be of interest to you. I'd appreciate your thoughts, both on past columns including "The Fringe of Still Photography" series which ran monthly during 2014, as well as the series which just wrapped up. My intent with those two columns was to introduce readers to an aspect of the photography hobby/profession to which they may have never been exposed (a category into which the first two series mostly fell). As an amateur photographer with a scientific background, I felt comfortable with those two columns. As I have increased my knowledge of photography through two-plus years of CLCC membership, and by authoring two years worth of columns on subjects I was more familiar with than most, I'm ready to take on a subject more aligned with the serious photographer's mainstream interests. I'm looking for a real challenge on your (the photographer) "turf", not mine (science). So I'm challenging you to challenge me. If you send me some column-worthy subject suggestions I'll consider taking one on next year. ◇

## HELP WANTED

CLCC is in need of a volunteer to become assistant editor of the newsletter. Beginning responsibilities may include some of the following:

- Pre-publication review of newsletter drafts for typos and other errors,
- Solicit inputs from members for future newsletters,
- Check and vet websites used in the newsletter,
- Contribute and/or create material for the newsletter.

The position may lead to editor responsibilities should the then-current editor be unable to perform duties in any given month(s). Rich Bickham will provide training and guidance. Interested individuals should contact Rich at [richbickham@comcast.net](mailto:richbickham@comcast.net).

We are always looking for good photography tips for the "Tip of the Month" and interesting links for the "Link of the Month" sections of the newsletter. If you have something helpful or interesting to share with our club members (which includes both novices and professionals so both basic and advanced topics are welcome), send them to [richbickham@comcast.net](mailto:richbickham@comcast.net) before the newsletter input deadline. ◇



## READER FEEDBACK

No reader feedback was received this month. 🙄

Reader feedback should be sent to [richbickham@comcast.net](mailto:richbickham@comcast.net). ◇

## OPPORTUNITIES

Get your photography questions answered or your problems solved with our "Ask a Pro" program. Submit queries to [downtownprophoto@sbcglobal.net](mailto:downtownprophoto@sbcglobal.net), and Jim Pierce will provide an answer or solution to your inquiry in the next newsletter.

The front page picture (Seasonal Image of the Month) of the newsletter will be chosen from entries received from club members. Your entry must be received by the newsletter input deadline. Email a jpg image to [richbickham@comcast.net](mailto:richbickham@comcast.net) with the subject line "Front Page Image Entry - Month" where Month is the intended newsletter issue month. The picture should have a seasonal theme.

Member photos are on display at several venues throughout the area. There are spots available for additional photos. The photographs need **not** be competition winners. All entries must be mounted on either 11x14 or 16x20 inch black mats, and have a business-card-size white label mounted in the lower right corner of the mat with the photograph's title, photographer's name, and the location at which the photograph was taken. Contact Chuck Rasmussen at [chuckr@camira.com](mailto:chuckr@camira.com) if you have questions or wish to participate. ◇

## DECEMBER MEETING SHOW & TELL CHALLENGE

There will be no December Show & Tell challenge due to competition month. ◇

Power, from page 4

Who else is helping these children through photography? In South Africa it is an organization called

**I Was Shot In JoBurg**

<http://www.iwasshot.com/pages/iwasshot-in-joburg>.

See also:

**Give a Child a Camera and Save the World**

<http://www.cnn.com/2012/07/20/world/iyw-100cameras/> ◇

# CALENDAR OF COMING CLUB EVENTS - December, 2015 & January, 2016

DATE	TIME	LOCATION	DESCRIPTION	NOTES
December 1, 2015	6:15 - 7:00 p.m.	Home State Bank 611 S. Main St., CL Community Room	"Drop in Early" mentoring	1
December 1, 2015	7:00 - 9:00 p.m.	Home State Bank 611 S. Main St., CL Community Room	CLCC December meeting - <b>Competition Night</b> Donuts & coffee from Country Donuts in Crystal Lake are provided by club member <i>Larry Swanson</i> .	1
December 12, 2015	8:30 a.m.	Colonial Café 5689 Northwest Hwy., CL	Saturday morning PhotoBug breakfast meeting	2
December 12, 2015	12:30 p.m.	Christian Church of Arlington Hts. 333 W. Thomas St., AH	CACCA Seminar, meeting & competition judging	5
December 15, 2015			Deadline for your print list for Dole Mansion Art Fair	4
December 22, 2015			Deadline for January newsletter inputs	3
December 29, 2015			Target date for January newsletter email distribution	
January 5, 2016	7:00 p.m. - 9:00 p.m.	Home State Bank	CLCC January meeting - <b>Agenda TBA</b>	1
January 9, 2016	8:30 a.m.	Colonial Café	Saturday morning PhotoBug breakfast meeting	2
January 9, 2016	12:30 p.m.	Christian Church of Arlington Hts.	CACCA Seminar, meeting & competition judging	5

## Notes:

- 1) CLCC meetings are held the first Tuesday of every month. Home State Bank is located in Crystal Lake. It's the large building behind the drive-up just southeast of the intersection of Route 14 and Main Street. The Community Room is on the lower level - take the elevator just inside the south entrance.
- 2) The PhotoBug Breakfast meeting provides an opportunity for open conversation related to photography in general, plus good food and fun. Who knows, you may take home some great tips and ideas that help you capture better pictures. Don't dress up - it's all informal. It's a great way to get to know the club members on a more personal level too. This event is held at 8:30 a.m. on the second Saturday of each month.
- 3) Email to [richbickham@comcast.net](mailto:richbickham@comcast.net).
- 4) Email print list (not the files) to [railgrinch@gmail.com](mailto:railgrinch@gmail.com). See page 4 for more information.
- 5) The monthly CACCA delegates meeting and interclub competitions are held on the second Saturday of each month. Those interested in attending should contact Lyle Anderson at [lyleandr@sbcglobal.net](mailto:lyleandr@sbcglobal.net) or Royal Pitchford at [rpitchford@live.com](mailto:rpitchford@live.com) - you may be able to catch a ride with one of them. ◇

## UPCOMING NON-CLUB EVENTS OF POTENTIAL INTEREST TO MEMBERS

Contributor: *Royal Pitchford*



**Christmas Around the World and Holidays of Light**  
Over 50 trees decorated in the tradition of their respective countries  
Thursday, November 19 through Sunday, January 3  
Museum of Science and Industry  
5700 S. Lake Shore Drive  
Chicago, IL



**Illumination - Tree Lights at the Morton Arboretum**  
Over a mile of dazzling LED lights and trees that respond to your touch and voice  
Friday, November 20 through Saturday, January 2 - 5:00 p.m. to 9:30 p.m.  
Closed Thanksgiving, Christmas Eve & Christmas Day  
Also closed these Mondays: 11/23, 11/30, 12/7 & 12/14  
Morton Arboretum  
4100 IL Route 53  
Lisle, IL



**Kiwanis Santa Run For Kids**  
5K Run/Walk & 1 Mile Walk  
Sunday, December 6 - 9:00 a.m.  
Raue Center for the Arts  
26 N. Williams Street  
Crystal Lake, IL



**Historic Holiday Open House**  
Experience the holidays of the mid-19th century  
Saturday, December 12 - Noon to 4:00 p.m.  
Powers-Walker House in Glacial Park  
Route 31 & Harts Road  
Ringwood, IL ◇

