

Kawartha Camera Club

All levels of photographers are welcome to participate

Capturing Motion in Photography

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Capturing a Moment in Time

- Photographs capture and immortalize a small slice of life – there is little for the viewer to infer what happens before or after that moment.
- One thing that makes photography unique is its ability to freeze a moment in time.
- We see what is in front of us as a continuing chain of events, whereas, the camera is able to stop time from moving forward, giving us the opportunity to study that fraction of a second.

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Your Camera Sees Things Differently

- Understanding how a camera “sees” is the key to figuring out how to take charge and create the kind of images you want to make.
- Sometimes the best images show the very thing that we cannot see with our own eyes.
- Things such as low light levels, depth of field, colour, dynamic range, short and long exposures.



Photo by: Anne McKinnell

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Reasons to Capture Motion

- Sometimes there is a need to blur certain elements in the image while focusing sharply on a few subjects. Other times, you may want to blur everything. The direction you take depends on your objective for your photograph.
- Most photographers capture motion to convey that an object is moving.



Photo by: [Wayne Simpson](#)

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Reasons to Capture Motion

- Movement can also communicate mood (e.g. trees rustling in the wind imply serenity, while hoards of people on a city block imply a flurry of activity).
- May also use motion to eliminate elements in a scene that may serve as distractions to the viewer (e.g. a still person in a crowd).



Photo by: [Wayne Simpson](#)

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Blurred Subject With Background in Focus

- Instantly communicates to the viewer that the subject is moving quickly.
- Use a slow shutter speed and a tripod.



Photo by: [Extra Medium](#)



Photo by: [Paul Aloe](#)

- This technique is often used in night time photographs with car headlights cutting through the image.
- Also known as “smearing”.

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Blurred Background With Subject in Focus

- Also known as “panning”, this technique requires a slow shutter speed and the camera to match the subjects rate of movement and direction.



Photo by: [Carl Welbourn](#)



Photo by: [Fabrizio Lonzini](#)

- This technique can be difficult so practice, practice, practice.

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Freeze Motion All Together

- A fast shutter speed can freeze action, even stopping a hummingbird's wings, while a slow shutter speed can let action blur or even make moving objects seem to disappear.



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Blur Everything

- Sometimes you may even want to blur everything in your photo for an abstract capture of motion.



Photo by: [Andres Caldera](#)



Photo by: [Jason Skinner](#)

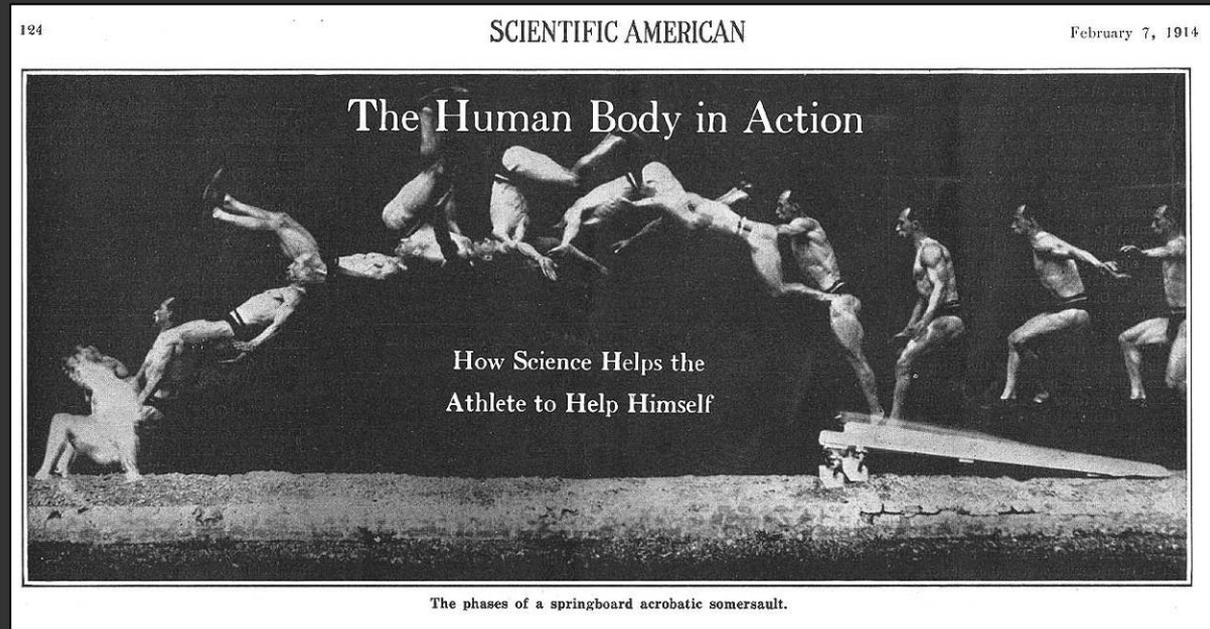
JASON JAMES SKINNER jskinnerphoto.com

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Chronophotography

- Defined as “a set of photographs of a moving object, taken for the purpose of recording and exhibiting successive phases of motion”.
- It’s original purpose was to help scientists study objects in motion – primarily humans and animals.
- Also used for practical purposes such as judged timed events (races) and studying the movement of projectiles for war.



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Chronophotography

- Using the continuous shooting feature on your camera, you can capture a series of shots and join them together in the post-processing stage to create the effects shown below.



- A tripod is essential when attempting to shoot motion using this method.

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Slow Sync Flash

- This technique combines longer shutter speeds with the use of a flash so that elements in the shot are frozen still, while others remain blurry.
- **Rear Curtain Sync** – Flash fires at the end of your exposure. Motion occurs behind the direction of travel.
- **Front Curtain Sync** – Flash fires at the start of the exposure. Motion occurs in front of the moving subject and can give the appearance of the subject moving backwards.

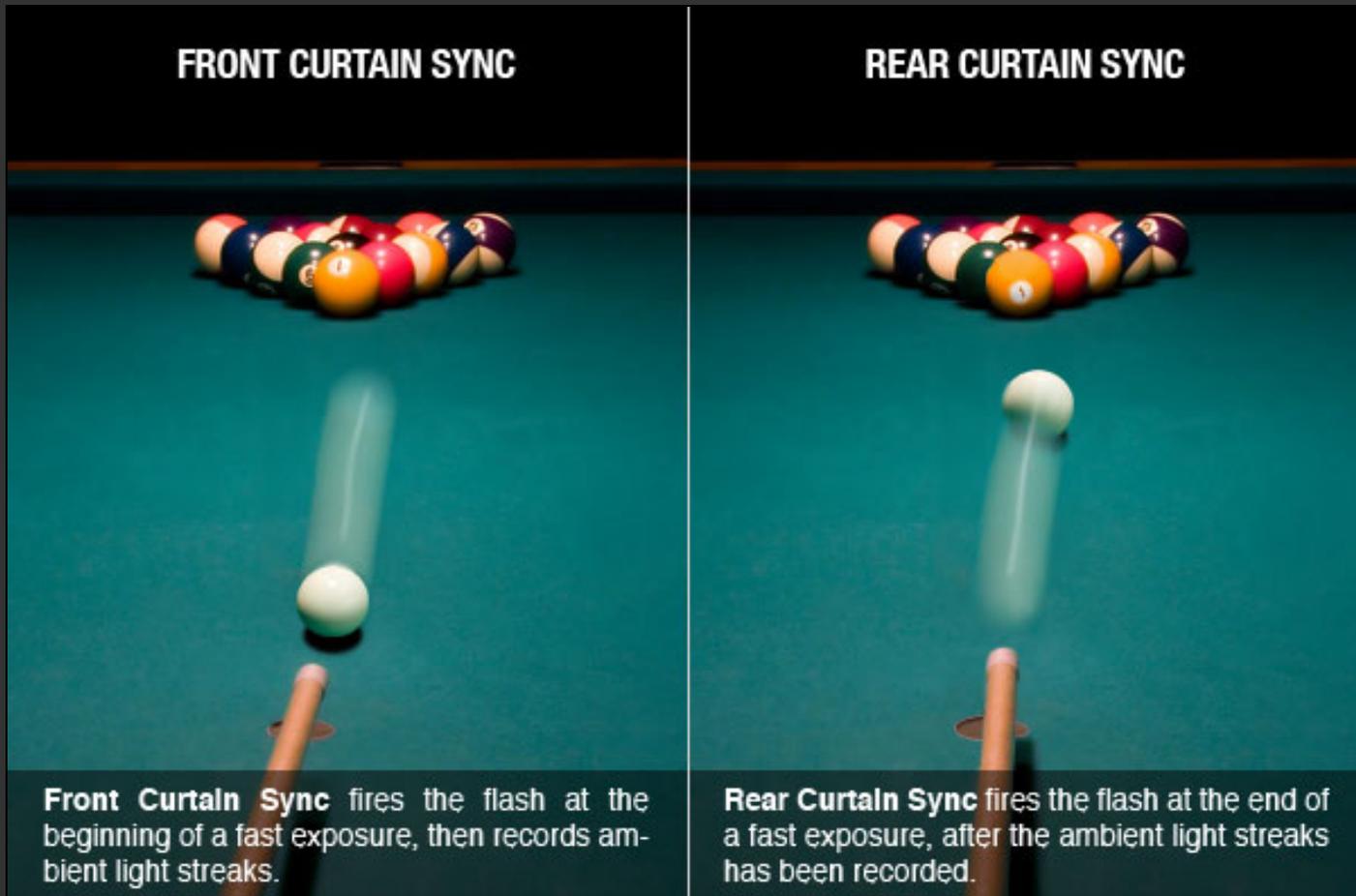


Photo by: [Todd Klassy](#)

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Front Curtain vs. Rear Curtain Sync



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The Shutter: Gaining an Understanding

- The shutter is the mechanism that determines how long the pixels on an image sensor collect light.
 - Point-and-shoot cameras
 - No mechanical shutters.
 - Electronics basically tell a pixel to capture light for a set amount of time.
 - Use interline transfer sensors which dedicate a portion of each pixel to store the electronic charge for that pixel.
 - Added electronics reduces the ability to capture light since a portion of each pixel is not light sensitive.
 - Single Lens Reflex (SLR) cameras
 - Uses a mechanical shutter.
 - No circuitry on the pixel so the camera bleeds off any residual electrical charge while the shutter is closed.

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Determining Shutter Speed

- What is the proper shutter speed to capture motion?
- Every situation is unique and one speed doesn't suit all circumstances.
- To identify the right shutter speed, you'll have to ask yourself a few questions:
 - How fast is your subject moving?
 - How much distance exists between the camera and the subject?
 - How much motion do you want your photograph to convey?
- Use either Shutter Priority or Manual Mode as a starting point.

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Excess Light

- When you slow the shutter speed, there's a chance that too much light will enter and impact your photograph.
- There are a couple ways to resolve this:
 - Check the aperture.
 - The larger it is, the more likely excess light will enter.
 - Check the ISO.
 - When set too high, the image sensor in your camera may be overly-sensitive to light and can create unwanted noise in your image.

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Use a Neutral Density Filter

- An ND filter reduces the intensity of all light equally (e.g. no changes in colour).
- The purpose is to allow greater flexibility to change exposure time.
- They are quantified by their optical density or equivalently their f-stop reduction.
- Can range from 1 stop to 13 stops.
- For example, a 3 stop ND filter would reduce a shutter speed of 1/8 second to 1 second.



Photo by: [Robert Emperley](#)

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Mastering the Art of Motion Capture

- Like other photography skills, becoming proficient at capturing motion requires experimentation and practice.
- Spend time learning how shutter speeds will impact the quality of your images.
- Even while using a tripod, timing a perfect shot of a fast-moving object can be difficult.
- In the end, capturing motion is part technique and part art.

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Freezing Motion



Photo by: [Ari Scott](#)

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Photo by: [Andreas](#)

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Photo by: [Alex Vinter](#)

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Photo by: [Mace2000](#)

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Panning



Photo by: [Shane Gibson](#)

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Photo by: [Matt O'Brien](#)