

April 5 – “It’s about time!” Exercise Notes

Tonight’s exercises are about handling time in an exposure – both artistically and mechanically. Sometimes this is the traditional “bulb” exposures measuring seconds or even minutes (or hours if you’re doing star trails). Artistic choice of shutter speed allows you to show how time’s passage (and motion) is expressed in an image.

Ironically you can express motion and time in an image both with a fast (freeze frame) and slow shutter speed (motion blur), so the choice of which to use is up to your creative intentions.

There are 4 stations tonight, each practice a technique in longer than usual shutter speeds. In all these exercises, **set your camera to “shutter priority” so you have control over time**. For most you will use manual focus to lock your focus, so that the camera doesn’t change things on you when you try to take the exposure.

Station 1 – Walkies

This station looks at the nature of motion blur (or conversely sharpness of the subject) when the subject is in motion in different directions relative to your lens and how we handle shutter speed (time) in these types of shots. We are looking at motion in two directions:

- Motion directly towards the lens (towards or away)
- Motion perpendicular to the lens (crossing your frame)

Use a reasonably high ISO and wide aperture; we’re still looking at fairly fast shutter speeds (roughly 1/15th to 1/100th of a second depending on the movement of your model).

Steps:

- Have a fellow member walk briskly **towards** your camera at a distance of about 10 feet (3 metres?), ideally arms swinging as well. It’s good to have a spot pre-focused, then trip the shutter as the model passes that point
- Find a shutter speed that captures them with reasonable sharpness, keep that shutter speed
- Now have the member walk perpendicular to you (i.e. crossing the frame), they should try to maintain the same brisk walking pace.
- Take their photo as they pass directly in front of you using the exposure from the last shot. **DO NOT PAN YOUR CAMERA!**
- If they were blurred, re-shoot at the slowest shutter that still captures the motion relatively sharply (we’re looking for a moderate “freeze-frame” look).
- Variation: use the slower shutter speed, but now practice panning (swing camera with subject as you click the shutter). The intent here is that the subject will be fairly sharp, but the background motion blurred.

Questions:

- With the same shutter speed, was the cross-frame subject still as sharply focused?
- If there was motion blur, how much faster did you have to make the shutter speed to capture that cross-frame motion?

Take-away knowledge: motion towards/away from the camera can be captured sharply at slower shutter speeds than motion perpendicular to the camera’s view. Not every “freeze frame” shot needs 1/1000th second shutter!

Station 2 – Zoom

This station looks at an old technique that can be quite fun to play with in the right situations. It was easier in the old days with bayonet style zoom lenses compared to today's twisting ones, but you can still get interesting results. It takes practice to develop the steady hand required for the best results.

You will need a zoom lens that you can operate while the shutter is open (sadly most point and shoot cameras don't allow this – one of the few times having an SLR is an advantage!). A tripod is recommended, but artistic license allows for this to be done hand-held as well.

Steps:

- You have some light sources at this station, set your exposure so that you have a shutter speed of at least $\frac{1}{4}$ second and preferably LESS than $\frac{1}{2}$ second.
- Zoom your lens all the way in (i.e. **highest** focal length)
- Focus on the light sources, switching to **MANUAL FOCUS** works best with this technique so that you're not fighting with the autofocus of your camera.
- Now zoom your lens all the way out (smallest focal length) in preparation for the shot, and half-depress your shutter button (as if you were telling the camera to auto focus, except you're in manual focus right now)
- Now the tricky part ... start zooming your lens in at a steady pace, and **after** you start zooming, click the shutter and keep zooming until the shutter closes. Releasing the shutter before you start zooming won't give as good a result, you'll get "bump" in your lines when you start or stop twisting your lens. The key here is a steady hand and zoom speed.
- *Variations:* try once you've gotten your basic shot:
 - Reverse the process, start narrow and zoom wide
 - Reverse which end will be in sharp focus, the starting focal length or the ending one
 - Play with curtain sync flash, try a zoom in, out, using different curtain syncs on each?
 - try this technique with a 2 or 3 second exposure (e.g. city skylines), zoom a little, pause for about $\frac{1}{4}$ second, then zoom a little more, pause again, repeat until exposure is over. You will get a "step-wise" zooming effect. This effect really needs a tripod.
 - (if you can do this without injuring yourself), try rotating the camera around the axis of the lens as you zoom (think of a two handed twisting motion, one hand turns the lens, the other turns the camera body in the opposite direction) you'll get a spiral effect.

Questions:

- Does the image look different whether the zoom starts wide or narrow?
- What about where the point of sharp focus is during the zoom? Does this change how things look (especially on long zooms like 70-300mm)
- When you try flash, how does the flash affect the final image? Does it look different if the flash fires when zooming in? out? 1st curtain? Rear (2nd) curtain?

Take-away knowledge: changing the zoom during a longer exposure can add interesting motion blurs. This is especially effective with light sources that will leave trails on the exposure. Where the focus is sharpest, and where (or if) the flash is used during the zoom all have an effect on the final image.

Station 3 – Ghosts!

Most of us are used to the fact that when something moves during a longer exposure, we get motion blur. But this is not always the case. Consider that an exposure is the buildup of light on your medium (film or sensor). If you remove a subject from the frame part way during the exposure, what was behind the subject will now start building up on the exposure. If the subject moved too fast for its reflected light to register on the medium, you will NOT see any indication of motion.

Let's play with what happens when things move around during a longer exposure. You will need a tripod or similar sturdy support for this! A remote shutter release would also help reduce camera shake.

Steps:

- Have a fellow member sit in the chair. Set an exposure with as long a shutter speed as possible (small aperture, slow ISO, maybe even a ND filter or polarizer would help). 8 to 10 seconds should be long enough – start with shutter priority mode
- With the member sitting very still, start your exposure, half way through the exposure (e.g. try counting down “4 .. 3 .. 2 .. 1 .. out!”), the subject moves off the chair and out of frame as fast as possible – don't hurt yourself!
- Reverse the procedure, start with the frame “empty”, have your subject move into the frame and stop in a standing pose and stay still. (You could try having the subject dive into the chair, but it might be hard for them to get sitting still without blur). You should start with your camera pre-focused; make sure your “ghost” stands on their “mark”!
- *Variation:* try one member who sits in the chair for the **whole** exposure, have another member stand behind them. *Part way through, the standing member exits the frame.*
- *Variation:* try some of the above, but add flash to the mix. You may need to use your flash compensation and reduce its output to avoid over exposure. Try first and second curtain syncs if your camera has that level of control.
- *Variation:* have the member standing “at attention” for the 2 or 3 seconds of the exposure, then quickly move arms outspread shoulder height for 2 or 3 seconds, then arms overhead for remainder of exposure (the idea is to try and keep the head and trunk of the body in as much the same position as possible). Create a Vishnu or Kali type look?

Questions:

- Is there any difference in the quality of the “ghost” depending on whether you add or remove the ghost-subject?
- If you tried using your flash, what effect does this have on your “ghost”? when is flash useful in ghost photography?

Take-away knowledge: during longer exposures, the image is building up over the **whole** duration of the exposure. Items that are in frame for only a portion of the exposure will take on a blurry or translucent appearance. If your camera is capable of doing multiple exposures on a single frame (in old film cameras this was a common feature, in digitals it tends to only be available on a few models), you could use this approach to build up all sorts of effects. (you divided your exposure of the background over the number of shots needed, then put your multiple exposure items in so they were exposed correctly for each individual shot).

Station 4 - Fire Writing

You will be provided with some sparklers. Please be careful with them, no photographer flambé tonight! This is similar to star trails and other long exposures using moving lights. This can be interesting whether it's done with car headlights on the street or a fire juggling busker.

For super blurry shots, these can be done hand held. If you want the background to remain stable, then use a tripod

Steps

- Set an exposure so you have a shutter speed of about 1 second
- One member holds a lit sparkler; have them try writing different "shapes" (S curves, circles, lines, triangles, etc.) Try to start moving just before the shutter opens and don't stop until after the shutter closes (why do you think we suggest this?)
- Shoot the moving subject. Note not only the lines of the main burn of the sparkler, but the trails created by the sparks flying away
- Variation: try shorter or longer exposures, note the appearance of the subject and the length of the light trails
- Variation: add flash to the mix, note the effect on the subject in relation to the light trails

Questions:

- How does your choice of exposure affect the subject vs. the trails and background
- If you tried different shutter speeds, how does this affect the appearance of the subject and light trails?
- If you tried flash, how does this affect the relationship between the light trails and the member holding the sparkler?

Take-away knowledge: since light sources are usually much stronger than non-light sources, any "motion blur" with them will stand out from the background. Non-light subjects moving in the image may appear underexposed compared to the light sources (this is especially true if you use auto exposure in shutter priority mode, the camera will tend to expose for the light sources). Moving non-light sources will go translucent/blurry (re: ghosts!), and if the exposure is long enough and the non-light subject moves quickly enough, they may not even register in the frame. (E.g. try having people with sparklers run across your frame during a 10 second exposure).

Now ... go out and practice these techniques in the "real world" and bring your results back to the club to share!

Samples

Station 1: Motion Blur

in this case, these are examples of panning. Note subject is (reasonably) sharp, while background blurs as the camera moves. Remember in panning, you get best results when the shutter trips when the subject (and motion) is directly perpendicular to the camera lens



Station 2: Zoom

Considerations when composing this kind of shot:

- Zoom direction
- Which end will have sharp focus?
- Duration of shutter and “smoothness” of zoom (step-wise vs. continuous lines)
- Will you use flash (and if so, which curtain sync you’ll use)?



Station 3: Ghosts!

Considerations when composing:

- How long “ghost” subject stays in frame. The longer they’re in there, the more solid they appear to be
- Use of flash – what needs the extra exposure of flash, beware the flash does not completely “erase” your ghost.



Station 4: Fire Writing

These exposures are all about building up light in a longer exposure – fire writing, star trails, light painting. Sometimes long exposures allow your background to show through, and light is added as decoration or to highlight additional details.

Considerations in these kinds of exposure:

- How much shutter time do you need for background and any additional light effects ?
- How will you mix flash (if any) into the shot? (e.g. capturing details at the end or beginning of a light trail)
- For light painting, what areas will you expose more with your light? (always keep your light moving to avoid hotspots in these cases, it takes a delicate touch).
- When light painting with a flash, you usually try to avoid standing between the flash and your camera, so you don't show up as a shadow in your image

