

## Easy Birds and Wildlife with today's modern mirrorless cameras



Subject detect, eye-tracking auto focus

Bird and wildlife photography has undergone a revolution in the past 10 years. The advent of modern mirrorless camera systems, with subject detection, eye-tracking auto focus for birds and wildlife (and humans) has removed one of the major obstacles to successful bird and wildlife photography. Add fast frame rates for shooting action sequences and birds in flight, and exposure automation and in-camera jpeg processing that increasingly relies on artificial intelligence for consistent results across the widest range of situations, and you can rely on today's mirrorless cameras to produce consistently correct, technically satisfying, results in almost any situation the photographer is likely to encounter.

sophisticated cameras for their subject detection, eye-tracking auto focus, and then think (and teach) that you have to shoot in RAW and manual (or at least shutter preferred with manual ISO) to get the best results. If they trust the camera to focus for them, why do they doubt that it can handle exposure and processing the RAW files just as well? And many of them rely on AI assisted post processing to process their RAW files anyway. My theory is that if the camera can do it...let the camera do it so you can take care of the more important things: like finding, and seeing, and framing the birds and wildlife.

Of course your mirrorless camera system should also have a range of image stabilized lenses to work with the camera's in-body stabilization, suitable for birds and wildlife. Carrying and shooting off a tripod is a pain. Mirrorless cameras come in three sensor sizes: full frame (the same size as the old 35mm film), APS-C that is approximately two thirds of a full frame, and Micro 4/3s, which is half of a full frame. For birds and wildlife, in my opinion you will not be happy with anything under 600mm equivalent, especially if you intend to shoot smaller birds... that would be 600mm for full frame, 400mm for an APS-C camera, and 300mm for a Micro 4/3s. Even better, again in my opinion, are zooms that reach 600mm or above at their long end, and offer a range of focal lengths on their way up, for times when the action is closer or the wildlife bigger.



800mm equivalent

Such cameras and lens systems are produced by Canon (full frame and APS-C), Nikon (bird eye focus only in full frame so far, animal eye (which works okay for birds) in both full frame and APS-C, and that could well change by the time you read this), Sony (full frame and APS-C), and OM Systems (formerly Olympus) and Panasonic (both Micro 4/3s). They range in price from the Canon APS-C cameras at under \$1500 to upwards of \$9000 for some full frame bodies. For

those of us on a budget, and who are interested in the lightest and most compact solution, as of this writing, you can put together several APS-C or Micro 4/3s body and zoom lens combinations from Canon, Sony, OM Systems, and Panasonic for less than \$4000 (Canon for less than \$2000, Olympus and Panasonic at just over \$3000.) The added advantage of the APS-C and especially Micro 4/3s systems is that they weigh less and are way more compact than full frame systems...and generally cost much less too.

The method I teach will require you to spend some time with the camera and its manual to set your modifications to Program mode for Birds, Wildlife, and Birds-in-Flight and Action...but once you have those modifications made, and saved to the camera's memory or custom modes, then you simply pick the appropriate Custom mode, and pretty much point and shoot...letting the camera do the work of focus, exposure, and jpeg processing.

No you do not have to shoot in RAW and manual to be a real bird and wildlife photographer. Let the camera do the work.



Let the camera do the work!

That is the recurring theme here: if your camera can do it...let the camera do it! And today's mirrorless cameras, used intelligently, are capable of freeing you of almost all the moment to moment technical decisions in the field, and much of the processing work at home...leaving you free to do what only you can do...see and frame the images that need taking!

While no two camera makes use the same terminology for the features you need to modify, and no two cameras (sometimes even two cameras from the same maker) have the same menu layout to find those features, the features themselves are general enough to be part of every modern mirrorless camera operating system. These, then, are the general settings and modifications you will want to make.

- 1) set the camera to Program mode using the main control dial. You will make specific modifications for birds and wildlife (or for birds, and for wildlife, depending on the camera), and birds-in-flight/action. (You do not have to shoot in manual or shutter preferred with manual ISO!)
- 2) set image quality to fine or superfine jpeg (whatever your camera calls the highest quality jpeg) (You do not have to shoot in RAW! See #8 below. Let the camera do the work.)
- 3) set your ISO to Auto, and your minimum and maximum ISO to the limits of good image quality for your camera. 100-200 for minimum (do not go below the "base" setting...for instance if the recommended minimum is 200 but you can set 100, don't). With most modern mirrorless cameras you can set the maximum to 6400-12800 and still get excellent image quality (perhaps even higher on a full frame mirrorless). (Auto ISO will yield the best possible image in the widest possible range of situations. Let the camera do the work!)
- 4) use the AI assisted, subject aware, exposure metering, or, if that does not work for you or your camera, center weighted metering (under exposure or metering settings in your menus) and the camera will produce consistently correct exposures without much or any intervention on your part, shot after shot, day after day. (Let the camera do the work!)
- 5) set your minimum shutter speed according to how active your subject is and the quality of your lens and camera image stabilization. Approximately, to be on the safe side, 1/250-1/500th for perched and feeding birds and slowly moving wildlife with most stabilized 600 to 800mm equivalent lenses (mostly to account for subject movement), 1/1600th to 1/2000th for birds in flight and action sequences. (You don't have to be thinking

of suitable shutter speed all the time and changing it yourself. Let the camera do the work!) In extreme low light, if your image stabilization is up to it...you might want to try even slower shutter speeds. If the bird or beast is not moving at all, it is sometimes possible to hand hold a shot at 600-800mm equivalent at 1/25 of a second.)

- 6) Experiment with the camera's built in jpeg processing profiles (different names depending on your camera brand, see below expanded RAW vs JPEG) to find the one that gives you the best balance of shadow and highlight detail and the most pleasing colors. This will generally be the Standard, Natural, Faithful, or Neutral setting (mostly names for the same profile depending on camera maker). You may also have an Auto or an Enhanced setting that uses some degree of AI, but this is designed and programmed for human subjects and may sacrifice shadow, and especially highlight detail when shooting birds and wildlife. Over time you can work on tweaking the setting you prefer by individually adjusting sharpness, contrast, and saturation to give you the best images for your post-processing workflow. (Processing profiles and their intelligent use are one of the main reasons you do not have to shoot in RAW. Let the camera do the work!)
- 7) if your camera has features designed to better balance shadow and highlight detail, especially to protect highlight detail, use them. They may be separate from the processing profiles, or they may be built into the processing profiles. (The goal is the best possible shadow and highlight detail in every situation. Let the camera do the work!)
- 8) set the camera for continuous shooting...but 5-10 frames per second is enough for active birds and wildlife, and 15-20 frames per second is adequate even for birds in flight and rapid action. (You do not have to shoot at the camera's highest frame rate all the time...it only produces lots of all but identical frames. Don't let the camera make more work for you, just because it can!)
- 9) for birds, wildlife, and action use the camera's subject detection, eye-tracking auto focus. (While no camera's eye tracking is yet perfect, it is way better than attempting to focus manually on active birds and wildlife.) On most mirrorless cameras you will get the best results using all the focus points available for unobstructed subjects, and letting subject detection and eye-tracking do its work. You can use manual focus override to help the camera find the subject when there are foreground obstructions or dial down the focus target area for more precise targeting through obstructions. (Let the camera, as much as it can, do the work but be ready to intervene when needed!)
- 10) save your modifications for each subject type to the camera's custom modes or memories and switch back and forth in the field as your subjects change. Relax. Let the camera do the work, and enjoy seeing and framing the birds and wildlife you encounter.

To expand a bit:

Focus.



Bird's eye-tracking auto focus

Most bird and wildlife photographers buy mirrorless cameras for their auto focus. The advantages of eye-tracking auto focus are pretty obvious. It once took years to develop the hand eye coordination, and the anticipatory skills, needed to get sharp photos of active birds and wildlife. Modern mirrorless cameras will identify your subject, be it bird, bear, or human...find the subject's eye and lock focus on it, following it as the subject moves through the frame, even when panning with flying pelicans (or swallows) or stampeding wildebeest (or scampering squirrels). Most mirrorless cameras will even capture images before you fully press the shutter, making

those ducklings leaping out of the nest shots or cheetah taking prey shots much more likely. Modern mirrorless cameras do not do anything a very skilled bird and wildlife or nature photographer could not do in the past...they just make it so easy that almost anyone who is willing to learn what their camera can do, can do it.

#### Stabilization and shutter speed.

Most mirrorless cameras will provide between 4 and 8 stops of stabilization. The old rule was that no one could hand hold a lens at less than the reciprocal of its focal length. That would be a shutter speed of 1/800th for an 800mm equivalent lens, 1/400th for a 400mm equivalent lens, etc. When we say the lens and body provide a 4 stop stabilization we mean that you can half the recommended shutter speed 4 times. In theory, with 4 stops of stabilization, you should be able to hand hold an 800mm equivalent lens at 1/50th of a second. Stabilization of 8 stops should enable you to hand hold almost any lens made for the camera at 1/25 and below, but in the real world very few birds or beasts are still long enough to take a photo at those speeds. So, unless you are dealing with such low light levels that it makes sense to give really slow shutter speeds a try (in which case you should) you will want to set your minimum shutter speed at a setting that will freeze minor motion on the part of your subject. 1/320 to 1/500th will work for most perched birds, even preening and quietly feeding birds, and for most stationary or grazing wildlife, and that is well within the hand-held tolerance of the stabilization built into most mirrorless cameras and their lenses. Of course for birds in flight and rapidly moving wildlife sequences, we will want higher shutter speeds. 1/1000th will freeze the body of a bird in flight. 1/1600th to 1/2000th will freeze the wings. It takes about 1/5000th to freeze hummingbird wings. For both birds and wildlife action I use 1/1600th, mostly just to keep the ISO lower for better image quality overall.



1/1600th second

#### Exposure.

And here is the mystery for me. If you trust your camera's automated focus and stabilization, why not trust its automated exposure? The exposure systems in today's mirrorless cameras are just as sophisticated, just as AI enhanced, as the focus systems. In my opinion we passed the threshold where even the most experienced photographer can do a better job of producing consistently exposed images, with correct shadow and highlight detail and the truest colors, than the camera does automatically a long time ago (at least time measured in camera generations). And exposure systems are only getting better with the addition of more and more artificial intelligence and better and better sensors. There is absolutely no advantage to shooting in manual, balancing the so called exposure triangle...ISO, shutter speed, and aperture...in your head and by eye, because the camera's automation will get it right more than 90% of the time anyway. Remember, especially for birds and wildlife, there is only one correct exposure in any



balancing shadows and highlights

given situation for any given subject (within some latitude on either side for intentional artistic variations). That is going to be 1) the lowest possible ISO for the given light levels and lighting situation (for the best image quality, the highest dynamic range (best shadow and highlight detail) and the truest colors) and 2) at least for birds and wildlife and most nature subjects, the fastest shutter speed possible at that ISO in that situation (to eliminate camera and subject motion), and 3) the widest aperture the lens has at the current focal length (necessary to balance the high shutter speed and, in fact, for the best resolution and clarity possible with today's designed-for-mirrorless lenses). That is exactly the combination that your camera is programmed to give you when you set the control dial to Program. On most cameras, as mentioned above, you can set a maximum ISO for image quality, and a minimum shutter speed for action, but then Program with Auto ISO will take care of determining the correct exposure, again, in 90% of subject and lighting situations.

Let the camera do the work and you will get consistent correct exposures, with will require a minimum of post-processing day in and day out.

#### Lens performance.

The old rule from analog photography days was that a lens is always sharpest stopped down a few stops. If your widest aperture is, say, f4, then you would have tried to shoot at f5.6 or f6.3 for the best clarity and resolution. However digital sensors and auto focus systems work best with all the light they can get. Therefore lenses designed for modern mirrorless cameras are designed to be sharpest, clearest, and most resolving at their widest aperture. This is especially true of lenses for APS-C and Micro 4/3s cameras, where the smaller sensor means that while an f4 lens has the same exposure value as an f4 on a full frame, the actual size of the aperture (the hole that lets the light in) is only two thirds or one half of what it would be on a full frame. This effects both the depth of field of the lens and its clarity and resolution. Photos taken at f4 on a full frame camera will have good separation between the subject and background, even if the background is relatively close. We call that a "shallow depth of field" and it is preferred for most bird and wildlife photography. The subject will be in focus, and the background will be out of focus, isolating the subject and making it stand out clearly. The same subject in same spot from the same distance, taken at f4 with an APS-C camera will have less separation (since the size of the hole is actually 1/3 smaller), and taken with the Micro 4/3s will have the least separation (since the actual size of the hole is only 1/2 what it is on a full frame lens). That is just physics. Also, smaller true apertures reduce the sharpness and clarity of the lens because the smaller hole has more diffraction...more bending and scattering the light at the edge of the hole. Therefore it is especially important, for the best performance from APS-C and Micro 4/3s lenses, to shoot wide open...at the largest aperture available most of the time.



Hand held from a moving boat

## RAW vs JPEG.

And, finally, it is no longer necessary to shoot in RAW and spend lots of time “recovering shadows or highlights” or adjusting color balance or removing noise. The jpeg processing engines in today’s mirrorless cameras combine artificial intelligence with a wide range of in-camera adjustments, so that, if you set the camera up correctly, and use auto ISO and exposure, it will produce finished jpeg images that are consistently excellent, and need very little adjustment in post processing. In fact, I refer to what the jpeg processing engine does as “in-camera raw processing”, as the built in algorithms and AI can do almost anything you would do in post processing, working with the same RAW data, and produce, in my experience, as fine a jpeg as even the most experienced Lightroom or Photoshop technician could (or whatever your post processing software of choice is).

All mirrorless cameras today have a set of highly adjustable jpeg processing profiles built in. They might be called Picture Modes (OM Systems), Creative Styles (Sony), Picture Styles (Canon), Picture Controls (Nikon) but they all do the same thing...they apply differential processing to produce different effects as the RAW data is converted to jpeg in the camera. They control the sharpness, contrast, and saturation (vividness of the colors) of the final jpeg, as well as the balance between shadow and highlight detail. You will generally have choices like “standard, natural, neutral, muted,” and “vivid” and even some more specialized ones like “black and white” or “sepia”. There may be one that has some degrees of obvious AI involved, like iEnhance in the OM Systems options, or Auto in the Canon menu, but all of them depend on increasing amounts of AI to achieve their effects. In addition, each one of those preset profiles can be individually tweaked for sharpness, contrast, and saturation...and you can save your tweaks to a custom profile. With this degree of control over how your RAW data is processed to jpeg, shooting in RAW is, in my opinion, no longer necessary, or even wise. Once you have the camera processing profiles dialed in to your taste, the camera will produce satisfying jpegs exposure after exposure...freeing you from much of the burden of post processing.



Your experimental helper

When I say experiment the profiles above, I mean just that. Don't try to figure out processing profiles in the field, while attempting to shoot real birds or wildlife. Your backyard or the local park is the place to do that. Buy a little helper...a plush stuffed parrot, or any of the Audubon plush birds that you press to hear the bird song...something with a range of colors. The plush will provide enough detail to test for sharpness. Or, if you are mainly shooting wildlife, get a lion or bear. Set your “helper” up where you have room. Now shoot individual frames as you select and change the different jpeg processing profiles your camera offers. Shoot at various times of day, under different lighting conditions. Examine the results on your computer or tablet...not on the back of the camera. Continue this exercise until you have determined which one of the profiles suits your style of photography, processing habits, and expectations. That

is round one. Now go out and shoot a lot of photos, process them, and reassess your choices. When you are confident in your choice of profile, experiment with the individual settings for sharpness, contrast, and saturation to see how much of the post processing you are routinely doing can actually be done in the camera. The camera will remember the changes you make and they will be saved to memory when you save a Custom Mode, but you can also, on most modern mirrorless cameras, save them to a custom profile.

Beyond the jpeg processing profiles, many mirrorless cameras have features to compensate for the one of the most difficult of exposure tasks...balancing shadow and highlight detail. An ideal image will have enough detail in both the shadows and highlights to look natural to our eye...but no digital sensor (or any film ever made) can record the full range of darks and lights



-0.7 EV

the human eye can see...therefore the challenge is always to fit the wide dynamic range of the human eye into the limited dynamic range of the sensor. This can be done, more or less successfully, by pumping up the shadow detail and restraining the highlight detail when the RAW data is processed to jpeg in the camera (or, if not in-camera, you will end up doing it in software when you post-process). Different makers call it different things (and some, like OM Systems, build it into the processing profiles) but when it is there as a separate feature, it will be called something like DRO (Sony's Dynamic Range Optimization) or Auto Lighting Optimizer (Canon). There is no good reason not to use this feature when available. And you can certainly experiment with it as outlined above to find out how to best use it. (Which gives us another reason to shoot jpeg, as these dynamic range enhancements are not available in RAW.)

And remember, in-camera sharpening is, today, a far cry from the original, and somewhat crude, algorithms of early digital cameras. Today, AI has made in-camera sharpening as the image is processed from RAW to jpeg. one of the cleanest ways of sharpening any image.

The same goes for noise reduction. First of all, ISO in today's digital cameras is not what it was in the world of analog film. In those days we bought a roll of ISO (or ASA back in the day) 100, or 250 or 400 (or even 800 or 1250 if we were willing to take a risk and desperate to get the image in low light) and just hoped for the best. We relied on what we called the latitude of the film...the degree of under or overexposure it would take and still produce a passable image. If the lighting changed...a cloudy day turned bright or a sunny day turned dark and stormy, or if we went from open field photography to deep forest, we were pretty much out of luck as the film in the camera was no longer the right film. Many photographers today, especially wildlife photographers for some reason, seem to still be picking (and teaching others to pick) an ISO based on the prevailing light levels just as they would have picked a film, and then relying on post-processing to save underexposed and overexposed RAW files. That is analog thinking in a digital age. It is better to think of ISO as the amount of gain applied to the signal from the sensor, or the amount of current applied to the sensor to excite it, that will produce just the right dynamic range and color fidelity for the given light levels and the subject, in the moment, as the light and as the subject changes. That is what Auto ISO does for you.



led illumination, ISO 25600

And today's sensors operate over an almost unimaginable range for those of us who learned photography in the analog age. Today's mirrorless cameras, even the smaller sensor ones like the OM Systems and Panasonic Micro 4/3s systems, produce excellent images, with good dynamic range, accurate colors, and excellent fine detail in a range from ISO 100 or 200 (equivalent to ASA 25-50 films in my experience) up to ISO 6400 or even 12800, with only the in-camera noise reduction, and usable images (with might require additional noise reduction in post processing) up to ISO 32000 and above. And again, the noise reduction applied in camera as the RAW data is converted to jpeg is done using the same kind of AI assisted algorithms as the sophisticated noise reduction software used in post processing, and it is applied to the same RAW data. One could say that, with modern mirrorless cameras, there is no better place to remove noise, when it needs to be done, than in the camera.

All in all, in my experience, with correctly exposed images...which you will get if you are shooting in Program and Auto ISO...and if you use your jpeg processing profiles intelligently, the camera will produce as fine a jpeg as can be done...one which then can them be tweaked as needed in post-processing to produce as fine an image as can be had, given the lighting and subject constraints of the situation. Certainly as good or better than all but the most talented using the best post-processing software on a RAW file.



work with the light you have

I can not say this too strongly. In any given situation, there is only so much light to work with, and your subject and background are illuminated by that light in just one way. The correct exposure is the one that gives you the truest colors and the greatest range of shadow and highlight detail. Auto ISO will select the best ISO for the subject and situation, and Program will choose the fastest shutter speed and the widest aperture under most conditions, and certainly in low light. Shooting in manual and RAW will not magically give you more light, or change the way it is falling on your subject. It does allow you to break the rules of exposure and radically under expose or overexpose your image and then attempt to "save" it in post-processing...but you will, in my opinion, based on too many years with too many cameras in too many too dark or too bright places, never produce as good an image as you would have gotten if the exposure had been correct in the first place. Let the camera do the work. It will get it right almost every time.

Interventions for special situations.

There are times and situations, even if you have you're camera set up for the best images in the most situations, when you will have to intervene. I mentioned one above when talking about subject detection, eye-tracking auto focus. When your subject is surrounded by distracting brush, branches, twigs, foliage, or isolated against a very bright or very dark background, the camera may struggle to detect the subject, let alone find the eye and track it. Therefore you should always keep manual focus active even when using auto focus. This may be the default for your camera and lens





combination, or you may have to change a menu setting under Auto Focus to make it so. When the camera struggles to find and focus on the subject's eye, you can generally encourage it by simply manually focusing well enough so that the camera can take over. This works more or less well, depending on your camera and lens. The other way of dealing with obstructions is to switch from all point focus to a smaller focus target, or even to single point focus. This can generally be done with one of the programmable buttons on your camera, or the joystick if the camera has one, without accessing the menus. A quick switch to single point or the small focus target will allow you to place the target on some high contrast area of the bird's body...at which point the subject detection and eye-tracking should take over.

Another situation where intervention may be needed is when the lighting on your subject and the lighting on (or of) the background are very different. A white bird or beast in the sun against a background of dark foliage, or a dark subject against the snow or sand...or any bird or beast silhouetted against a brighter sky. All modern mirrorless cameras have an Exposure



+1.0 EV

Compensation feature, most often, when you are in Program mode, dedicated to one of the camera's control wheels. This control allows you to adjust the exposure to compensate for differences in lighting. The adjustments are in EV...or exposure values. One EV is twice or one half the exposure of the previous, so one "stop" difference in exposure. The adjustments are generally in three tenths (0.3) of an EV steps. Plus or minus 0.3, 0.7, 1.0, 1.3, 1.7, 2.0, etc. Some cameras will allow up to 4 EV adjustment on either the plus or minus side. For light subjects against a dark background, or even for light subjects in bright sun, you might get a better exposure, protecting highlight detail, if you decrease the exposure by 0.3 to 1.0 EV. Don't overdue it. For any subject against a bright background you can generally get more detail in your subject by increasing the overall exposure by 0.3 to 1.0 EV. You can sometimes get a usable image at higher EV compensations, up to plus 3.0 and above, but you are unlikely to be completely satisfied with the image... backlight shots are just plain difficult.

The other intervention you might use on rare occasions is Program Shift. Program Shift allows you to change the balance between shutter speed and aperture (and ISO when you reach the limits of what is possible with speed and aperture) without changing the actual exposure. It is generally programmed to a second control wheel on the camera. Given the reality of today's mirrorless cameras, you will almost always be shooting with the lens near wide open, so in reality using Program shift to get a higher shutter speed will push your ISO setting up. Even then this is only possible in good light. In poor light the camera has already selected the lowest possible ISO, generally at or near the upper limit you set above, and the fastest shutter speed. On the other hand there are times when you want a slower shutter speed, but, for birds and wildlife that would pretty much only be when you want to intentionally blur motion to give an impression of movement. In such a case, you can use program shift to decrease the shutter speed, as long as you have aperture to play with. Again turning the Program Shift wheel changes both the shutter speed and aperture, and sometimes the ISO, at the same time, maintaining correct exposure. It does not magically give you more light to work with.

This bears repeating: In any given situation, there is only so much light to work with, and your subject and background are illuminated by that light in just one way. The correct exposure is the one that gives you the truest colors and the greatest range of shadow and highlight detail. Auto ISO will select the best ISO for the subject and situation, and Program will choose the fastest shutter speed and the widest aperture under most conditions, and certainly in low light.

Shooting in manual and RAW will not magically give you more light, or change the way it is falling on your subject. It does allow you to break the rules of exposure and radically under expose or overexpose your image and then attempt to “save” it in post-processing...but you will, in my opinion, based on too many years with too many cameras in too many dark places, never produce as good an image as you would have gotten if the exposure had been correct in the first place. Let the camera do the work. It will get it right almost every time.

Lens choice and field craft.

As mentioned above, from my experience, for birds and wildlife you will want a lens with at least 600mms of reach. Mirrorless camera makers almost always include a high quality 600mm fixed focal length lens (what we call a “prime” lens, as opposed to a “zoom” which covers a range of focal lengths in a single lens). Some even make one that you can afford to own...but many of the wide aperture (f4 and below) 600mms are going to be large, heavy, and expensive. 800mm even more so. Most mirrorless makers will also have several telephoto zooms to choose from. Prime lenses almost always have higher clarity and resolution than zooms. However, if you are just starting out in bird and wildlife photography, I would recommend a telephoto zoom...one with a range of at least 300-600mm, and ideally, one with a range of 200-800mm or above. The affordable ones will have a maximum aperture at the long end of the zoom of f6.3 to f9...not ideal for low light shooting...but they will be small enough and light enough to carry all day...and flexible enough for almost any bird or wildlife encounter. With today’s excellent high ISO performance and noise reduction, you will get satisfactory shots even under the most challenging circumstances.

Which brings us to field craft.

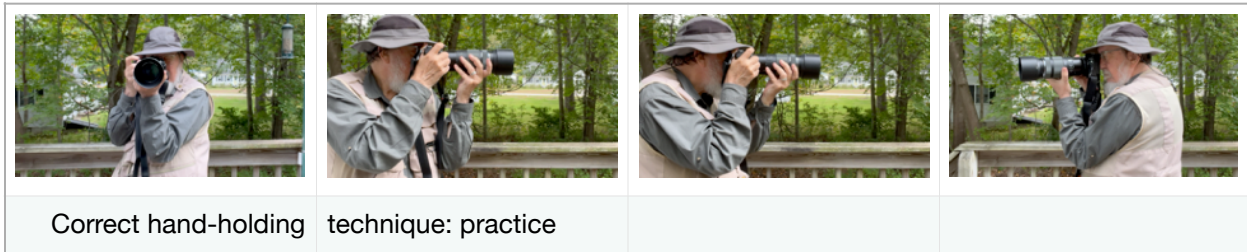
First, I highly recommend the Cotton Carrier for any mirrorless camera and lenses combo. Accept no substitutes! The original and authentic Cotton Carrier is the one to get. It is just designed better, is made of better materials, and works better and faster than any of its imitators. Once you get used to mounting and unmounting the camera and lens, you can do it in less than 3 seconds, and having the camera securely on your chest while moving around is so much better than having it hanging off your shoulder. You will need a “back-up” strap for when the camera and lens are actually in use. I recommend the Peak Design or Black Rapid straps attached to the Camera tripod socket, while your Cotton Carrier mount is attached to the socket on the lens. Best of both worlds. Belt and suspenders. (As a parenthetical here, I have actually taken the tripod foot off my 100-400mm zoom, as I never use it. When I need extra support I use my Beanbag head monopod...I have a video in my Point and Shoot playlist on making one. The tripod foot just adds weight to the lens and can get in way when handholding. If I do need it, it slips back onto the lens in a second. Without the tripod foot, I attach the Cotton Carrier mount to the tripod socket on the body of the OM1, and still use the Peak Design slider strap attached to the strap lugs. All secure, and it is even easier to get the camera on and off the carrier. In addition, it makes the whole rig feel much more compact...and you save some weight.) Still...



Cotton Carrier

Hand holding a long lens is a skill that has to be developed. The primary rule is to support the camera and lens with the bones of your arms and hands, not with the muscles. Muscles tire, bones do not. Muscles flex, bones do not. Therefore you need to adopt a stance that places the supporting arm directly under the lens, with your elbow tucked in to your body as much as possible. You do this off-shoulder, with your body turned 1/4 toward your subject, or face

on, with the camera and lens right in front of you and your head turned slightly to see through the viewfinder. Either way, if you do it right, you should be able to relax your muscles, supporting the camera on the bones of one arm and hand, while the other hand guides the camera for framing and operates the controls. Practice!



The other solution is to build and use a bean bag monopod, as above, using the instructions in one of my videos. :) (While the monopod is great for taking the weight off your arms during long sessions...my recent experience with image stabilized lenses suggests that it might not actually be any better, and might be worse, than hand holding the lens.)

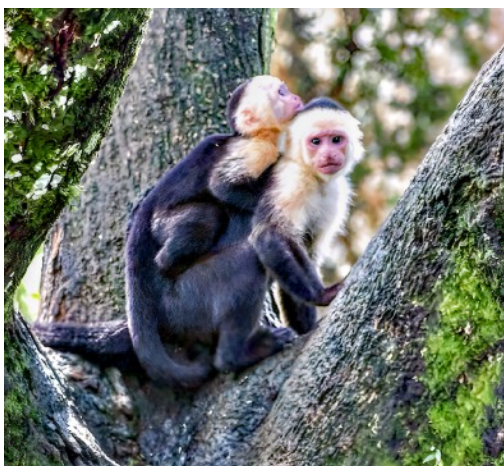


bean bag monopod

You have three custom modes. Spend time practicing with each one. Go out just to practice. Find a good bird spot, a good birds in flight spot, and a good wildlife spot. A local park or any pond or marsh is good for birds. The beach for birds in flight...or, even better, the local dump. Even if you live downtown, there are always pigeons and house sparrows. If you can't find a wildlife spot, practice on cows, sheep, goats, dogs and cats. You are not, at this point, looking for great photos...you are just developing confidence in the camera and your Custom Modes...and getting used to switching modes as needed.

Since the focus target area can be so important to your success with any custom mode, practice changing it and even moving it around on the sensor using the camera's joystick or the 5 way control until you are comfortable that you can change it as needed and quickly in the field. Do Not wait to practice changing the focus target area until your first trip to Costa Rica or Uganda! Practice it in your back yard or off the balcony in your apartment building until it gets programed into your muscles.

Make sure you remember which buttons do what. This is good advice for any reprogrammed button. Take out the camera and review how you have the buttons set up at least once a week. I know. Sounds boring. But you will be very thankful you spent the time when the Resplendent Quetzal pops its head out of the nest hole in Costa Rica, and then takes flight :) No fumbles. That is the goal.



The first burst of shots of anything significant, be it bird or beast, are taken any old how. Just get the camera up and a burst away. Then, if the subject is still in sight, check to make sure you are in the right custom mode, and begin to think about how to frame it to best effect. Play with different zoom settings. Put the bird or beastie in different parts of the frame. Move yourself to get slightly different angles and lines of sight and backgrounds. Begin to think about the best framing and the best shot. But all this happens

after your first point-and-shoot burst.

Don't forget how easy Exposure Compensation is to use on most modern mirrorless cameras. In Program mode, it is just a roll of one or the other control wheel away. Though the modifications we have made to Program will take care of maybe 90 percent of exposure challenges, there are still cases where some compensation, either negative or positive, will help. Birds in flight against anything but a clear blue sky are going to need a little bit of extra light. Twiddle the control wheel to the plus side (maybe to +0.7). White birds, especially in sunlight, will show more feather detail if you set exposure compensation to something like -0.7. Is the giraffe standing with its head in the shadow of the tree? Get a little more light on the subject. On the other hand, don't over-think it. Most of the time, with most subjects, EV compensation will not be needed. Don't use it as your final ditch way of being in control. Let the camera do its job. And don't set your expectations too high. Some shots are just so heavily backlit, or so poorly back and front lit, that there is nothing you can do to get a satisfying shot. Birds in the top branches of a tree against a plain white cloudy sky...good luck! Some shots just can't be done.



Exposure compensation



Program shift

Finally the other control wheel in Program mode generally controls Program Shift. Program will almost always select the largest aperture and the fastest shutter speed consistent with the light levels, so you won't have to adjust the Program for shallow depth of field, and you are unlikely to be able to select a faster shutter speed...but you might want to select a smaller aperture for greater depth of field, or a slower shutter speed to blur motion (moving water for instance). The back thumb wheel allows you to do this without over or underexposing the image by adjusting both aperture and shutter speed at the same time to maintain a balanced exposure. That's what Program Shift means.

Above all, when in the field, do not try to out-think the camera. You set it for the best results. Trust it to do its job, and get on with yours. Only you can put yourself in the right place at the right time. Only you can find and frame the birds or beasts. Only you can decide what is worth framing...or how it fits best in the frame. You do you, and let the camera do everything it can for you.

All that matters in the end are the satisfying images. You get no extra credit for doing it the hard way. No one cares. Just find and frame what needs finding and framing and don't let anyone tell you you are not a real photographer because you let the camera do the work or because you shoot in jpeg. A camera that is able to do everything it can for you is what you paid the big bucks for anyway. Let it do its work, so you can do yours.