

Bird Photography

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Figure 1. American Kestrel

We have enjoyed seeing beautiful photographs in many of the regional banding and birding magazines for many years. To my recollection at least, there has never been any paper in the pages of *EBBA News* or *Western Bird Bander*, with emphasis on bird photography. When I originally conceived this paper, it was to be about close-up photography, but after some rethinking, I decided to take a look at general bird photography.

There are dozens of cameras on the market today with hundreds of accessories, so I hope I can present some guidance in evaluating different types of equipment before anyone goes on a buying spree. It should be noted that mention of any specific product does not constitute endorsement by either the author, EBBA, or WBBA, and that all of the products listed are registered trademarks. This paper is divided into four categories: A. Simple Cameras; B. Camera Systems; C. Accessories; and, D. Basic Techniques.

A. Simple Cameras

Picture yourself standing in front of a counter at your neighborhood camera store. You're unsure of yourself because you've never had, much less used, a camera, and in front of you are dozens of cameras in the display case. You are understandably confused. And to make matters worse, the salesperson either shows no willingness to help, or has only one thing in mind — to sell you as much as possible in the shortest possible time. What do you do now?

To begin with, you should not have come into the store without having done some research beforehand. Assuming that you have no access to any up-to-date books in your local library that deal with

photography in general, ask the salesperson to show you a number of different models, asking about the features of these (in comparison to other models); then ask for some pamphlets (which most photo stores stock since they get these from manufacturers just for this purpose), and announce you're going to go home to "think it over". In the meantime, speak to your friends, sleep on it, study the pamphlets, but DON'T commit yourself to a sale when you have no idea what you really want. Buying photo equipment must be just as cautiously approached as buying a car. And another thing, a \$500 camera system often is no better than a \$50 simple camera. It might be made better, it might have more features, but it does not necessarily make better pictures of birds.

In the old days (and not even that long ago), people had limited choices. Most people settled for a box camera (e.g. Kodak Brownie) which offered a fixed lens and was operated by advancing the film, aiming at the subject to be photographed, and clicking the shutter. In more advanced models of the box camera, there was a button to adjust from bright sunshine to shade, but rarely did features go beyond that. Actually, the popular line of Kodak Instamatics still works on the same principle except that lenses are a bit more refined, the camera is smaller, and there are different models with different types of adjustment. Indeed, you can use an Instamatic for bird photography, but you are limited to the standard picture; telephoto and close-up shots are mostly out of the question. Some small cameras can be adapted with so-called "auxiliary lens attachments," but the results are not so good with small birds (warblers and the like).

This brings to mind a very interesting camera, the Kodak Instatech. The Instatech, like the "Brownie"

from foregone days, is an aim-and-shoot type camera. It requires no technical knowledge. It also comes in a system with several (I believe three) lens heads for different focal lengths, adapted for close-up photography. Attached to the lens-heads are wire frames, and by placing the bird within the "U" frame, one can get a very satisfactory close-up shot. This camera takes slide as well as print film, black and white, or color, in 110-size cartridges. Shots can be taken with flash cubes, but to my knowledge, not with electronic flash. If you take photos of hand-held birds, this camera is not too costly and brings much satisfaction.

You'll ask, why then do people have expensive cameras with many lenses? Well, some of us make a hobby out of photography as such; others like to be prepared for every eventuality. Some examples of the use of telephoto lenses are: photographing breeding birds from a blind; taking photos of that rare Swainson's Warbler that just does not want to come close enough; taking photos of nests in high trees; or, taking flight shots of raptors or owls in all sorts of light. Examples of close-ups (aside from hand-held birds): photographing parts of birds for workshop classes or various other presentations; photographing inside nests (where it is usually dark and a light source is needed); photographing insects, flowers as they bud, postage stamps, you name it—anything small.

B. Camera Systems

For the purpose of this paper, Camera Systems include any camera not in the aim-and-shoot category, but particularly the single lens reflex (SLR) camera. There are three categories. The first, the so-called "Rangefinder" camera, was the popular forerunner of the SLR. Its lenses were usually not interchangeable, with the notable exception of the Leica. Also, they were not reflex cameras. The viewfinder was separate from the picture-taking lens, which very often gave the photographer a much smaller view of the area actually photographed.

Later, twin-lens cameras appeared on the market (notably Rolleiflex, Mamiya, etc.) and even those were more closely related to the "Rangefinder" type than the SLR.

The second category is the SLR with focal plane shutter. Unlike the rangefinder models, the same lens which takes the picture is also used to view the subject. When the picture is taken, a movable mirror flips out of the way to allow transmission of light from subject to film. The focal plane shutter is one in which a sliding curtain exposes the film

plane. This curtain, if subjected to moisture (blinds in salt-marshes or on islands), may eventually cause problems.

The third category is the SLR with "between-the-lens" shutter (BTL). The BTL is very costly, but it is less subject to wear, and it has another very important feature: when using electronic flash, the flash can be used at all film speeds. With the focal plane shutter, one is limited to 1/100 second or slower because the speed of the sliding curtain is not synchronized with a flash at higher speeds (see Section D).

The above described camera systems can be used with a separate exposure meter. However, in our age of modernization, new gadgets constantly appear on the market, and for a few years now we have had SLRs with "behind the lens metering". This means that one or two CdS cells are strategically placed near the mirror to give a read-out of f-stops based on the film speed one selects (See Section D). In most cameras these meters are coupled to the lens diaphragm. This is a very good feature because it allows one to get a true reading through long lenses; before this feature became popular, one had to go into lengthy calculations to accomplish this feat. Usually, some sort of guide marker is found in the viewfinder, such as a movable arrow between two notches, to indicate one is using correct aperture and speed for the available light. Combinations of CdS meters with solid-state circuitry have also paved the way to the development of fully automatic cameras (Olympus OM-2 and others). It should be noted that if the coupled metering ever goes on the "fritz", there are costly repairs involved; using a separate meter prevents this possibility. If one never uses long lenses, there's little need for behind-the-lens metering.

SLR cameras feature lens interchangeability. Most cameras use the "universal" lens mount (42x1 thread); some of these are: Edixa, Fuji, Mamiya, Petri, Pentacon, Pentax, Practica, Ricoh, Yashica, Zeiss, and Zenit. This does not apply to all models in each product line. Most other cameras use bayonet lens mounts and these are not interchangeable between product lines. For instance, a Nikon lens will not fit an Olympus, a Minolta will not fit a Leica, an Exakta will not fit any of the above. Most of these product lines have their own vast arrays of lenses available. Adaptors will not necessarily increase lens interchangeability between product lines because the automatic diaphragm control pin, which couples to the camera's shutter, may be in one position in one

line, and in another position in another line. Nearly all SLR cameras can be outfitted with lenses of less cost but perhaps equal quality from such lines as Soligor, Vivitar, Tamron, Sigma, etc. — companies that specialize in making lenses. The proper adaptor, if available, must be bought for your brand of camera.

The SLR most suited to diversified photography is one with the greatest lens interchangeability. I personally prefer a bayonet lens mount because it is fast and easy to change. There are many close-up lenses, some of which can also double as regular lenses. These macro-lenses can give you varying amounts of magnification. Usually, the higher the magnification, the more costly the lens. You may want 1:1 magnification (life-size) for photographing parts of birds. Similar results can be obtained by using a less expensive lens (with less magnification) in conjunction with a 2x lens converter, bellows, or extension tubes. The only problem with the latter two is that they are usually not automatic, while a converter is. An automatic lens allows you to view the subject with a wide-open lens which automatically closes down to the selected f-stop (warranted by light conditions) when the picture is taken. Extension tubes can be used with the regular lens to obtain very good close-ups and many photographers prefer to use these. I personally prefer bellows since they afford a greater range of adjustment. Bellows don't last as long as tubes and are generally heavier.



C. Accessories.

Here we will deal chiefly with lenses. Let's assume you have a SLR camera with the basic lens and now you want to take other types of pictures. There are three possibilities. You can use your Bausch and Lomb Balscope Sr., or Bushnell Spacemaster, or other scope, if you have one with an adaptor to attach your camera. If you have a 20-power viewing element, and your usual basic camera lens is 50

(or 55)mm, you now have a 1000 (or 1100)mm lens. However, don't rejoice yet — a scope, never intended as a camera lens, absorbs a tremendous amount of light, and either very fast film or excellent light conditions are required (not to mention a tripod) to take good pictures this way.

The second possibility is the use of a 2x Tele-extender (I do not recommend 3x Extenders since they seriously reduce depth-of-field and often give rise to distortion.) You can thus double the magnification of any lens: a 135mm lens becomes 270 mm, a 400 mm lens becomes 800 mm, etc. The third and perhaps most economical way is to purchase a Macro-Zoom lens. The lens may be expensive, but you save by not having to buy all those other lenses. I have a Vivitar 85-205 mm Zoom lens and use it quite often, sometimes with a 2x Tele-extender. The lens must be refocused, however, when altering focal length — a distinct disadvantage. Of course, if you feel you must have everything, you can also purchase an individual close-up lens, medium telephoto, long telephoto etc., but that runs into quite a bit of money these days.

One special type of lens system, rather costly, is the Novoflex. It is advertised in Audubon and other leading nature magazines, and you may have wondered what that rig is that some birders are carrying. The main feature of this bulky system is the ability to focus by squeezing a trigger. This allows one to keep a flying bird in constant focus and it does make for some wonderful flight shots. I bought it on a whim some years ago and must say I haven't used it often; but I did use it for a photo of two Roseate Terns that just landed on a stone wall at Great Gull Island (New York). That photo, reproduced in black and white halftone, was published in John Bull's Birds of New York State — a fact of which I am justifiably proud.

When using macro or high-powered lenses (with or without flash), it is best to use a tripod unless you have a special shoulder pod equipped with some sort of trigger shutter release (such as with Novoflex lens systems). It is best to use a shutter release cable anyway because it will absorb vibrations caused by pressing the shutter release manually. Using macro lenses, where focus is extremely critical, a shutter release cable is a must.

D. Basic Techniques.

One very important, and perhaps least understood, consideration with lenses is depth-of-field. Depth-of-field, simply, is the zone of sharpness in front and in back of the point focused on. Depth-of-field

increases as the lens aperture becomes smaller (e.g. from f2.8 to f22). The smaller the f-stop number, the greater the size of the aperture; in other words, at f2.8 (or f1.8, depending on your basic lens), the lens is wide open, and the depth-of-field is practically nil. There are special markings on your lenses adjacent to the distance (subject-to-camera) scale that help you determine depth-of-field.

In close-up photography the depth-of-field is very critical and cannot be disregarded. Let me give you an example or two. Let's say you're using your basic 55 mm lens and you are 4 feet from the bird you would like to photograph. With the lens wide open at f2.8, your depth-of-field is from 3.75 feet to 4.3 feet, but with the lens stopped down to f16, you have a range from 2.9 feet to 6.5 feet. In the first instance, foliage directly behind the bird to be photographed (let's say 6 feet from where you are standing) will come out blurred; if the lens is stopped down to f16, the foliage will be sharp.

Sometimes you may have to "freeze" motion of a struggling bird, and this would necessitate a fast speed (e.g. 1/250 second). Your meter will indicate the possible choices of f-stops available to you based on available light, the type of film you're using, etc. This is where depth-of-field becomes critical, because if you're photographing a struggling bird, not all of its parts may be sharp. If you need to shoot with the lens wide open, you can use a fast speed; but if you have a good light source (electronic or other flash) and you have a focal plane shutter, you are limited to 1/100 second or slower and then you have to adjust your f-stop accordingly. In the latter case, the flash will stop the motion.

When photographing a large bird that moves considerably and you don't have sufficient light, you'll have depth-of-field problems; an f2.8 field may not be large enough to take in the whole bird. There are depth-of-field tables supplied with all lenses you buy; additional information can be obtained directly from Kodak.

Film speed is expressed in ASA (DIN in Europe). If you dabble in close-up photography and you are using electronic flash, a low-speed film is often appropriate. In color work, Kodachrome with a speed of ASA 64 works best for me since it's extremely fine grained and produces sharp bright color slides. Fast film is needed for telephoto shots and High Speed Ektachrome (ASA 160) can be used. This film can be pushed to ASA 400 with special developing. There's also GAF's 500 ASA slide film. Using high speed film permits one to minimize subject movement and camera vibration.



Slides or prints? This depends largely on your needs. Slides are very practical when you have a projector and like to give slide-lectures, but it's generally difficult to make good prints from them. Furthermore, most magazines (including NABB) do not like to accept them in lieu of prints because of the conversion costs involved. For submission to NABB and other publications, glossy black and white prints are preferred. They must be sharp with high contrast and good composition and background. Editors can indicate where cropping is necessary. Magazines and newspapers then transform the photos into half-tones which can be printed.

I could write another ten pages on techniques but my objective is to stick to basics since I must assume that most of you are not experienced photographers. With this in mind, I'd like to say a few words about the handling, positioning and lighting of birds. When photographing a bird in the hand, you want to capture as much of the bird and as little of the hand, as possible.

Grasp the bird by the upper legs, as close to the body as possible, with your thumb and forefinger. Grasp them firmly but gently. Now you can turn the bird around easily to present it to the photographer. It will sit still unless you hold it too long. If you position the bird so that it "looks over its shoulder," or partly sideways to the camera, this will usually give the most attractive shot.

Use a suitable background; the sky is often best. You can also use a notebook (I have used colored Acco binders; but beware — light reflection can alter color film tone) or another flat colored surface. Have your back against the sun, but make sure the bird you're holding isn't in your shadow. If you're using a flash, remember that the bird itself may cast a shadow that will show up on the picture.



Figure 2. Cedar Waxwing Photo credit: F.S. Schaeffer.

Figure 1 shows the head of a male American Kestrel, photographed with a small amount of backlighting to accentuate the head coloration. Roger Foy, whose slate-gray workshirt provides an ideal backdrop, had an open-necked shirt on. Skin usually reflects just enough light in contrast with a dark garment to provide this kind of lighting effect.

Another interesting technique is to shoot certain birds head-on, as with the Cedar Waxwing in Figure 2. Note that the bird was turned to look over its wing. (Looks somewhat like a knight in armor, doesn't it?)

Lighting of birds is difficult (and the subject for another paper, perhaps) when you're in a situation where there is barely enough light. Outdoors, flash can be used in special techniques (rather complicated but lots of fun) as fill-in light. A good example is my photo in NABB 1:46, where my head and hair are effectively separated from the dark background through the use of backlighting. Mr. Fernandez (name unfortunately mis-spelled in above referenced page) is an expert at this and has taught me quite a bit about it. Shadowless light can be obtained by using a ring-light (an electronic flash that surrounds the lens) or two flashes equidistant and on either side of the camera. However, if you're handy with your equipment, you don't really need all this special gear.

Finally, I would like to begin a question-and-answer project about bird photography. I think this would be a welcome and healthy project for NABB. The most interesting of these questions and answers (which I'll answer by mail) will be submitted to the editors for periodic publication in NABB. Please direct your questions to me. I'll answer them promptly, and if I don't know the answer, I'll research your questions in my fairly extensive photo library or obtain the answers elsewhere. A self-addressed, or at least stamped, reply envelope will be very much appreciated.

Suggested Reading

Some of the following literature was used in the preparation of this paper. Texts by Mason and Warham are for beginners; all others are more advanced.

- Allen, A.A. 1963. *Stalking Birds with Color Camera*. 2nd ed. National Geographic Soc., Wash., D.C.
- Cruikshank, A.D. et al. 1957. *Hunting with the Camera*. Harper and Bros., NY.
- Eastman Kodak Company, 1974. *Advanced Camera Techniques*. (Publ. No. AC-56) Rochester, N.Y.
- _____ 1974. *Kodak Master Photoguide*. (Publ. No. AR-21) Rochester, N.Y.
- _____ 1974. *Close-up Photography*. (Publ. No. N-12A) Rochester, N.Y.
- _____ 1975. *Kodak Color Films*. (Publ. No. E-77) Rochester, N.Y.
- Fisher, R.B. 1952. *Bird Photography for Bird-Banders*. *Bird-Banding*, 23:63-72.
- Kinne, Russ. 1962. *The Complete Book of Nature Photography*. A.S. Barnes & Co., NY.
- Mason, R.H. 1974. *Photography*. Hodder and Stoughton, London (Published in USA by David McKay Co., Inc., New York)
- Owens, W.J. 1975. *Close-up Photography*. Petersen Publishing Co., Los Angeles, Ca.
- Rosen, E.M., Exec. Editor, 1973. *How to use Flash*. Petersen Publishing Co., Los Angeles, Ca. (Book No. 653)
- _____ 1973. *35 mm SLR EE Selection Guide, Shutter-Priority, Vol. I*. Petersen Publishing Co., Los Angeles, Ca. (Book No. 677)
- _____ 1973. *35 mm SLR EE Selection Guide, Aperture-Priority, Vol. II*. Petersen Publishing Co., Los Angeles, Ca. (Book No. 679)
- Warham, J., 1973. *The Technique of Bird Photography*. Amphoto, Garden City, N.Y.
- 84-55 Daniels St. (IK), Jamaica, NY 11435