Easy on the eyes — pick binoculars with care

Tips from the Posse

By Mark Rackay

According to my personal and nonscientific calculations, an outdoor person will own an average of eight different pairs of binoculars over the course of his or her lifetime. Further research has indicated that each successive pair will be of higher quality, and thusly, more expensive.

Binoculars have a place in just about every outdoor activity. Everyone from birders, animal watchers, first responders, hunters, hikers, backpackers — and the list goes on — has a use for a good set of binos to enhance their enjoyment of the outdoors.

My wife of many years takes exception to my collection of binoculars, claiming we could pay off student loans for the kids with what I spent. Of course, I just laugh out loud and mumble a few incoherent phrases as I leave the room. She is correct in the assumption that I have spent a small fortune in quality glass over the years but in the interest of marital bliss, I shall keep those figures to myself. When it comes to family finances, my wife has the sense of humor equal to that of an IRS auditor.

A gentleman by the name of Hans Lippershey invented the first telescope in 1609, but it was 200 years later before someone thought about sticking two together creating a device

path while keeping the device shorter. This is the premise that binoculars work on.

Roof prisms came along in the early 1900s. Roof prisms allow light to be stretched around several more times in a tube than the Porro system. This does create more magnification over the Porro system, but most people prefer the depth and brightness of the Porro system, yours faithfully included.

You have two objective lenses that you point at the animal you are viewing. The light passes through the lens to a roof or Porro prism, gets reflected in its determined path, and culminates in its focal point, where it is picked up by the eyepiece lenses.

The costs come from the quality of the lens you chose to purchase. There is good crystal and cheap crystal. The next consideration would be the lens coatings. Optical coatings

for both eyes. French inventor J. P. Lemiere patented the first binocular in 1825.

In 1854 Ignacio Porro patented the Porro prism system that is still in use today. Like everything else, technology has really developed with optics, bringing us roof prism technology, digital capacity, night vision and scores of other advancements.

In choosing a set of binoculars, we need to understand a little bit about how they work and what questions you need to ask the salesclerk when you go shopping for a pair. Entire books have been written about outdoor optics, so this column will only serve to give you a basic introduction.

Binoculars are all about magnification, but first concern is light. Without light, there is no magnification. This is where the lens comes into play. When light strikes a lens, it actually slows down and bends. This process is known as refraction. With refraction, you then have the ability to control the direction and quality of the light, depending on the shape of the lens.

When light is gathered in the lens, it makes a trip to a focal point where another lens, called an eyepiece, captures it and magnifies it. The trip the light makes to the focal point can be long, as in a telescope, or very short, such as a pair of compact binoculars. The longer the distance of this focal path means the higher the magnification.

The development of the Porro prism is based on reflective prisms that could send light bouncing around inside of a device, thereby lengthening the light wave

lens coatings. Optical coatings reduce internal light loss and glare, while ensuring even light transmission.

Coated lenses appear less shiny and may have a greenish, bluish or brownish tint due to the magnesium fluoride or calcium fluoride they are made from. The coating destructively interferes with certain colors or wavelengths of light, eliminating their reflection. This means more light passes through the optic and therefore passes through to your eyes.

Look for terms like fully coated and fully broadband multi-coated. These mean that all the glass is coated. Terms like coated lens, may mean that just one lens is coated. You get what you pay for.

When shopping for a pair of binoculars, ask to use them outside and not just inside the store. Look for the darkest places to view, such as the shady, dark inner part of a heavily leafed tree. The better the glass, the better you will see in the darker times. Good glass will allow you to see at dawn and dusk, while cheaper glass will not.

The better made binos will have a wide range of focus and have lots of room for you to adjust without running out of focus. Good optics also has a diopter adjustment for each eye, so individual settings for your eye can be made and set.

There is a wide range of power settings to choose from. Generally, the higher the magnification, the smaller field of view you will have. Also, the higher the power, the heavier they are to lug around all day and the harder it is to hold them steady.

Your eyes can become fatigued very quickly if you do not have the correct pair of binoculars. A hunting guide, like Tanner Creel, spends many hours a day glassing and good binoculars are important to him. (Photo/Mark Rackay)

Pretty much anything over 10 or 12 power is going to be too shaky to look through without a support. If you are hiking around all day, a pair of 10 powers with 42 mm objective is just about right. My hunting pair is that size and I carry it around everywhere.

My wife has a pair of 10-by-30 mm that she prefers because they are much lighter to lug around. She does not have the large field of view, but it is easier around her neck. And speaking of necks and their associated pains from lugging glass all day, look into one of the harnesses available today. A good harness keeps the glass protected in front of you and takes the weight off your neck and redistributes it to your shoulders.

A high-end binocular will transmit better than 95% of available light, while an inexpensive pair may only pass 85% of available light. If you want to see how much difference that it, try wearing an old pair of prescription glasses, several scripts old.

Good glass allows you to look through them for many hours a day without eye fatigue and the sure to follow, headache. Spend some time looking through as many sizes and makes as you can. When you bite the bullet, and buy a pair of quality binoculars, you will wonder why you waited so long.

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