

Mid-price Binoculars

PART 1

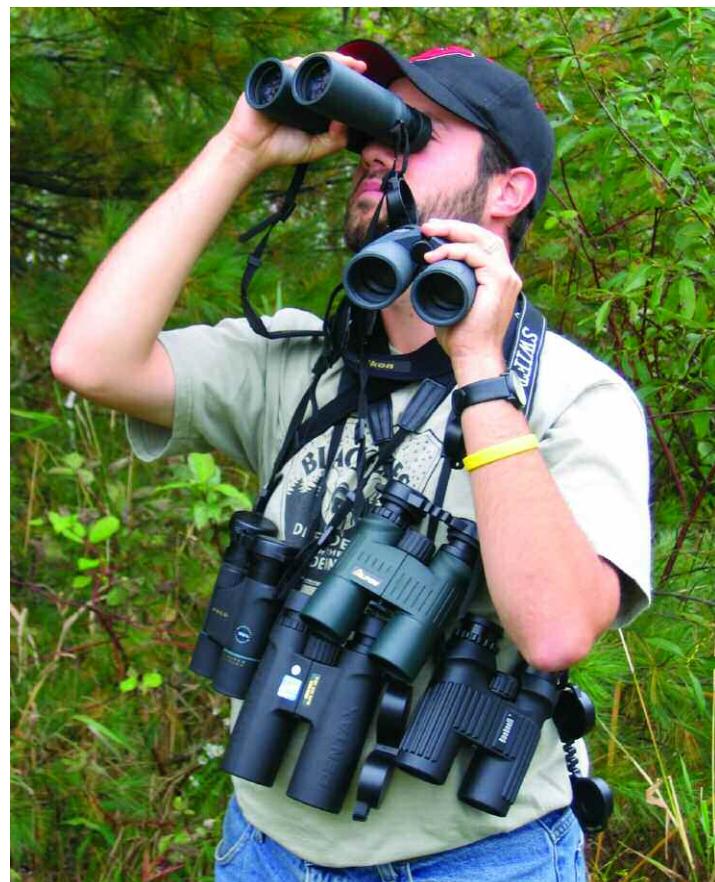
Over the past few years our selection of optics has greatly increased and improved. I believe that no single category has improved by such leaps and bounds as the mid-priced roof prism binoculars. It wasn't too long ago that you couldn't find a roof prism for less than \$400, let alone one in that price range that didn't give you a headache to look through. Now, we have a plethora of high-quality options from a number of companies. Each of these companies deserves to be commended for making such high-quality glass at a very reasonable price.

We love the benefits of roof prism binoculars. They are easier to waterproof than porro prisms. They have better close-focusing capabilities. And probably most important, they're more durable. You bonk your porros, and they're likely headed back to the company for re-alignment. Furthermore, many people find that fatigue in the arms after a long day of birding is reduced by how one tends to position the arms while holding the better-balanced roof prisms. That's because most porro users hold their elbows straight out, while users of roofs seem more likely to relax their elbows pointing downward.

The biggest drawback to roof prisms is that they contain more glass. The glass needs to be coated to reduce the loss of light and image quality caused by having to pass through more glass than in a porro prism. That costs money. But since they are more durable, we tend to get our money's worth. Also, since roofs have more glass, they are heavier, so they then require more-expensive construction ma-

terials to keep the total weight down. Luckily, the technology continues to improve and to become less expensive. Now we can own darn good, durable binoculars without having to take out a second mortgage.

Are these binoculars, which cost \$275–500, as good, as bright, as sharp, and as durable as the high-end, top-of-the-line offerings from the likes of Leica, Zeiss, and Swarovski? No, of course not. But we get what we pay for, and when we pay for any of these offerings, we get a fantastic return on our investment. Dollar for dollar, some of the best values in today's market can be found in this price range.



This is *not* how the reviewer field-tested the binoculars. © Jeanette Lovitch.

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I chose to take a look at seven offerings from six manufacturers. I did not intend to come up with an overall ranking. Simply put, one person (me) can rank binoculars only for oneself and not for everyone else. The useful comparison-articles that I have read have employed many observers looking at multiple criteria, especially while out in true field conditions, with the final rankings being averages among all the reviewers. I am not going to try to repeat these rankings, but will instead compare specific qualities of each offering. I will, however, attempt to come up with a loose ranking for some specific qualities. As always, I strongly recommend looking through multiple binoculars that meet your criteria to see which one fits you best. There is no way a reviewer, whether one or 20 of them, can decide which binocular is best for you—which binocular fits your face and hands, and whose image looks best to your eyes. That's what I like to call the "jiffy" of the binocular: its General Impression of Feel and Image. That's for you to decide; I'll just try to give you some information to help you narrow your choices.

I decided to stick with comparing apples to apples, and therefore have stuck with only full-size, 8-power binoculars. As many of the consumers of this price range are beginning to intermediate birders—and I urge such persons to consider the brightness and especially field of view as more important than power—I thought that this would be the most appropriate category to cover.

Many binoculars are tested and compared in a lab under controlled conditions. But I don't *bird* under controlled conditions. Some manufacturers have claimed that their product was superior based on some lab analysis. However, at times I have wondered if they have ever taken them out birding. Sometimes binoculars function differently in the real world. Jiffy is not something that can be tested in a lab. Therefore, I took each product, well, birding. I also asked participants on my store's bird walks to try various binoculars, trade them back and forth, and offer feedback.

Results

Each binocular discussed here is waterproof—a very important feature for any active birder. Many customers have asked me just how waterproof these binoculars are, given their reasonable price. So I decided to find out. While I ended up getting caught in the rain a number of times when out in the field, I wanted to make sure each binocular had an adequate waterproofness test. Therefore, after one evening spending time reviewing the binoculars under low-light conditions at dusk, I "accidentally" left them lined up on the back porch as a strong cold front approached. After over two



Binocular offerings in the mid-price range have improved tremendously over the past few years. The seven binoculars covered by this review are (left to right, top to bottom): Alpen Apex, Bushnell Legend, Leupold Olympics, Leupold Pinnacles, Nikon Monarchs, Pentax DCF HR II, and Swift Ultra-lites. © Derek Lovitch.

inches of rain fell steadily through the night, each binocular came out unimpaired.

I did not, however, purposefully perform the "drop test" of durability—although I did end up giving the Alpens a thorough durability test while volunteering on a project to capture, band, and take blood samples from Nelson's and Salt-marsh Sharp-tailed Sparrows in Maine's Scarborough Marsh. On one particular net check, I noticed a Merlin land on top of a mist net pole. Never a good sign. I took off sprinting in rubber boots through a saltmarsh full of tussocks and holes. As my left leg fell into a deep hole, I tumbled down with a hearty thump, binocular first into the *Spartina* and mud. Getting up, wiping the muck off of my body and binocular, I hopped down into a muddy creek, scrambled up the embankment on the other side, binocular swinging, splashing more mud everywhere. (Of course, this ruckus was more than enough to scare the Merlin away.) After a little rinse or two, the binocular was as good as new. My knee however, needed a bit of ice when I got home.

Overall, I compared and contrasted each binocular for the following seven categories:

- Image Quality
- Field of View
- Focusing
- Eye Relief
- Shape, Size, and Weight
- Bells and Whistles
- Other Factors

In Part One of this article, below, I will discuss Categories 1 through 3. In the next issue of *Birding* (July/August 2006), I will discuss Categories 4 through 7, and then attempt to draw some conclusions.

Image Quality: Brightness, Clarity, Sharpness, Color, Depth of Field

This is a very difficult category to test, yet it is the most important feature when deciding which binocular you are going to purchase. On a bright sunny afternoon, the binocular has more than enough incoming light to work with, so the subtle differences between models are less apparent. Therefore, I conducted most of my comparisons around dawn and dusk, or on very cloudy days. Also, I should add the disclaimer that my tests were meant to be subjective. I was not testing these in a lab, and since everyone's eyes differ, some people will see different aspects of the image quality differently.

What I did see was surprising: They were *all so good!* Maybe my eye is simply not discerning enough, but I found surprisingly little difference in most aspects of this category. The overall images offered by all of these binoculars are exceptional for their price range. While some binoculars ex-



Most of the models reviewed were quite similar in size. From left to right, the seven models discussed are the Alpen Apex, Bushnell Legend, Leupold Olympics, Leupold Pinnacles, Nikon Monarchs, Pentax DCF HR II, and Swift Ultra-lites. Each binocular can be purchased for between \$270 and \$500. © Derek Lovitch.

celled in one category, or fell short in another, no one binocular was either greatly superior or inferior to the others.

Brightness is an important category, so I did make the effort to rank the binoculars in this particular regard. The Leupold Pinnacles marginally edged out the Swift Ultra-lites and Bushnell Legends. The Nikon Monarchs and Alpen Apex were neck-and-neck for fourth and fifth place, but I give the Monarchs a slight edge. The Leupold Olympics and Pentax DCF HR II were the least bright of the lot, but still far superior to many earlier offerings in this price range.

But image quality is more than just brightness. All of the binoculars were very sharp and crisp, but the Pinnacles and the Ultra-lites had the sharpest, crispest edges within the

field of view, with the Legends close behind. The color was great in all of them, except the Legends, which seemed to cast a somewhat yellowish image. By the way, two other people on my bird walk independently described the color as "yellowish", while other folks didn't see a difference.

A significant division in this category does occur, however, when we compare depth of field. (Depth of field refers to how much field of view, in terms of distance from the observer, is in sharp focus at a given time.) Depth of field is an important feature of image quality, and one that goes a long way toward providing an enjoyable experience in the field. Good depth of field makes it easier to find a bird in a dense tangle of branches, easier to follow a speedy bird in flight, and easier to be the first to pick up a distant kettle of Broad-winged Hawks at your local hawkwatch. In contrast, an inferior depth of field results in a flatter image, poorer definition, and a need to constantly be focusing.

I found the depth of field in the Leupold Olympics to be sub-par, and I found the depth of field of the Leupold Pinnacles to be simply terrible. While using the Pinnacles to look through a mixed warbler flock in a forest canopy, I felt as if I never stopped focusing. Even when looking just at birds at my feeders, I constantly had to refocus to keep the image sharp. Don't try hawkwatching with these—it will be a very dizzying experience. It's unfortunate, as their excellent brightness and sharp edges are superb. The depth of field on the Legends and Ultra-lites is not bad, but not nearly as good as the Pentax, Alpens, and especially the Monarchs.

Trying to rank the color, sharpness, depth of field, and brightness of each of these offerings would be nearly impossible for one reviewer, but if I rank my overall impression of the image—the second part of my "jiffy" theory—the Nikon Monarchs just edge out the Swift Ultra-lites for my favorites in this category (with the superior depth of field of the Monarchs being the deciding factor here).

Field of View

With a range of only 26 feet at 1,000 yards separating these models, I believe that this feature is of no real value in separating these offerings. When specifically testing for field of view, one can see the difference between the Leupold Olympics versus Pinnacles, or the Alpens versus the Monarchs, for example (see Table 1). However, at no time in the field did I find any of these models to have either a superior or inferior field of view. I think that this is one category in which we can safely say one is as good as another. Don't get me wrong, I'll take every inch of extra field of view that I can

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get—especially for such activities as hawk and sea watching—but I was more than satisfied with the field of view provided by all of these models.

Focus: Speed, Right-eye Diopter, Close Focus

The Leupold Pinnacles require only one full revolution of the focus wheel to go from close focus to infinity. While the Alpens take the longest, at 1½ revolutions, the rest of the models are between 1¼ to 1½ revolutions. Overall, I was impressed by the quality of the focus, the speed of focusing, and the smoothness of the focus of each binocular—except one. The Bushnell Legend's focusing is simply too slow, due to a very stiff focus wheel. Although focusing from close focus to infinity requires only 1¼ revolutions, it seems to take forever. My index fingers felt like they were given a full workout as I tried to push the wheel along. Of course, by the time I did focus them, the bird was long gone. (This complaint was commonplace from folks on my bird walks.) On the opposite side of the spectrum, the focus wheel on the Ultra-lites seems just a little too fast; I feel like I continuously spin beyond the optimal focus, and once in focus it seems to slip out of focus too easily. (However, multiple users on my birdwalks said that the speed of the focus wheel was their favorite characteristic of the Ultra-lites.)

Each binocular has the focus wheel for the right-eye diopter on the right barrel adjacent to the eyecup. For binoculars with twist-up eye cups, it is easy to accidentally turn the diopter. The Alpens have a threaded diopter that you can feel as you turn, letting you know if you are moving the diopter instead of the eyecup. However, credit goes to Leupold for the diopter in their Pinnacles. The focus wheel has the feel of some sort of threading, like the Alpens, but with

deeper grooves, providing a click-stop mechanism that you can even hear. Now, we just need to see one of these manufacturers follow the lead of the high-end binoculars and get this right-eye diopter setting to lock in place.

What leaps and bounds these manufacturers have gained on improving close focus! Close-focus capabilities are becoming increasingly important to folks who have caught the butterflying bug. Plus, it is frustrating when a warbler is too close to focus on and the movement of taking a step back causes the bird to flee. If you are interested in butterflies, then the close-focusing capability is a very important consideration. According to the manufacturers' specs (see Table 1), the Alpen Apex has the best close focus at a very impressive 5 feet, while the Pentax has a sub-par close focus of just over 13 feet. In my own test, however, the measurements resulted in better close-focusing calculations than most of the manufacturers' own specs.

My wife and I both made two trials using two different tests of close focus for each binocular. Our average for the trials was consistently better than what was stated by the manufacturer. (Only the Bushnells and Alpens were essentially the same as stated by the manufacturer. The others were better—especially the Nikon Monarchs and Pentax DCF HR II.) Our results are as follows: Ultra-lites, 4.90 feet; Leupold Pinnacles, 5.00 feet; Apex, 5.05 feet; Leupold Olympics, 6.03 feet; Monarchs, 6.08 feet; Legends, 6.13 feet; Pentax, 9.80 feet.

In Part II of this article, to appear in the July/August 2006 issue of *Birding*, I will discuss more aspects of each model, including the following: eye relief; shape, size, and weight; bells and whistles; and some additional factors that will enable you to choose which binocular is best for you.

Table 1. To facilitate a quick comparison of some of the important features of each model, I have summarized them here.

The specifications provided below are those given by the manufacturer.

	Size ¹	MAP/MSP ²	MSRP ³	Exit Pupil (mm)	Weight (oz.)	Eye Relief (mm)	Close Focus (feet)	FOV ⁴ (feet)
Alpen Apex	8×42	\$340.00	\$480.00	5.25	24.0	20.0	5.0	341
Bushnell Legend	8×42	—n. a.—	\$399.95	5.25	30.1	18.0	6.0	330
Leupold Olympics	8×42	—n. a.—	\$384.95	5.25	21.8	18.0	7.5	325
Leupold Pinnacles	8×42	—n. a.—	\$494.95	5.25	23.0	17.8	6.6	341
Nikon Monarchs	8×42	\$289.95	\$430.95	5.25	21.5	19.6	8.2	330
Pentax DC HR II	8×42	\$279.95	\$342.00	5.25	27.5	22.0	13.1	330
Swift Ultra-lites	8×42	\$399.95	\$399.95	5.25	24.0	19.5	6.0	341

¹Magnification power × objective lens diameter in mm

²Minimum advertised/sale price (if applicable) as set by the manufacturer

³Manufacturer's suggested retail price

⁴Field of view at 1,000 yards