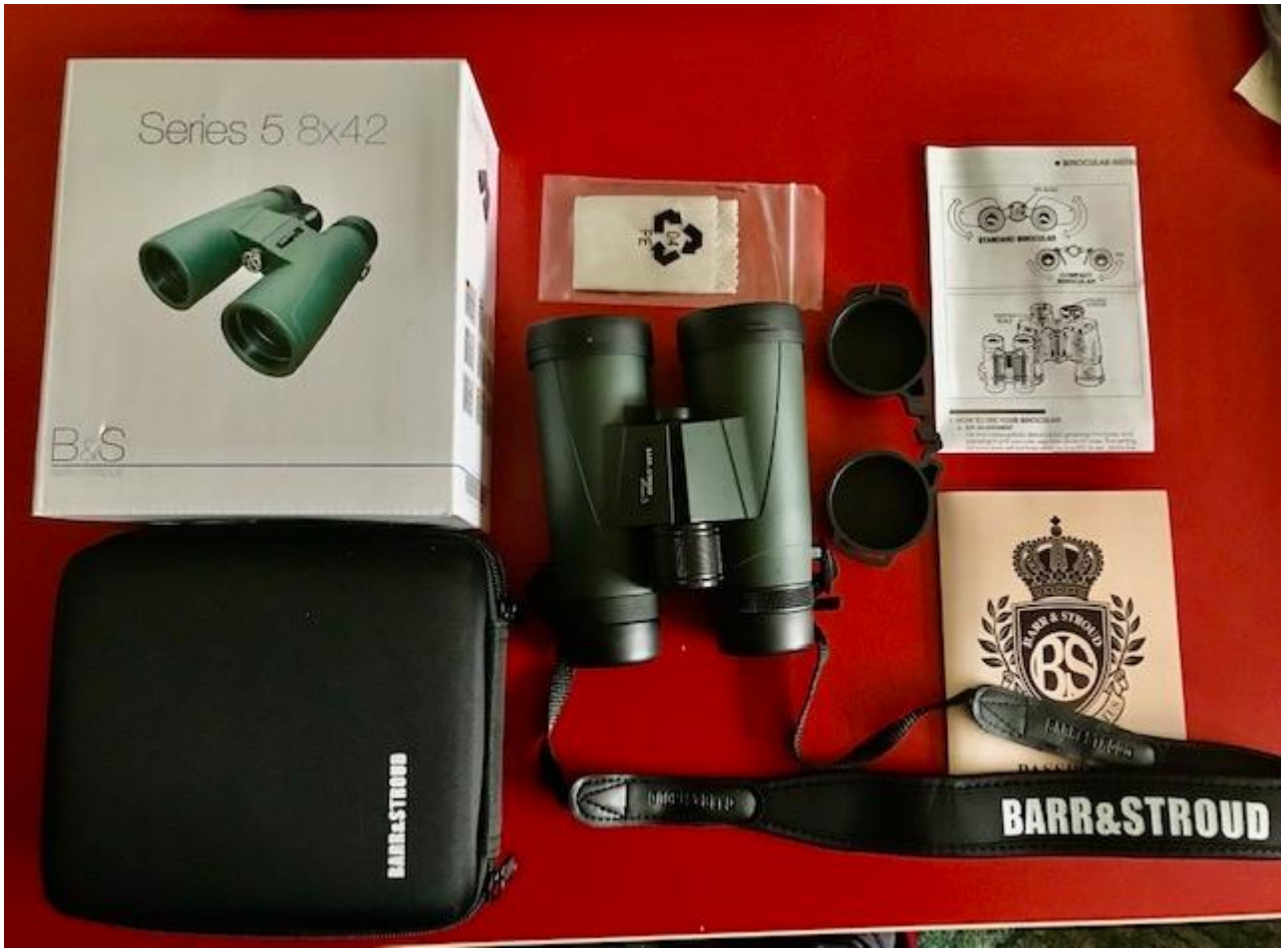


The Barr& Stroud Series 5 8 x 42 package.

Product Review: Barr & Stroud Series 5, 8 x 42 Binocular.

The Barr& Stroud Series 5 8 x 42 package.

A work commenced March 2 2021

Product Name: Barr & Stroud Series 5, 8 x 42

Country of Manufacture: China

Field of View: 142m@ 1000m (8.14 angular degrees)

Eye Relief: 17.2mm

Close focus: 2m advertised(1.78m measured)

Exit Pupil: 5.25mm

Chassis: rubber armoured magnesium

Coatings: fully multi-coated, BaK 4 phase corrected roof prisms, water repelling coatings on outer lenses.

Dioptre range: +/- 4

Waterproof: Yes (1.5m for 3 minutes)

ED Glass: No

Nitrogen Purged: Yes

Weight: 716g

Dimensions H/W: 15.4/12.6cm

Warranty: 10 years

Accessories: Hard clamshell case, lens cleaning cloth, rain guard and objective lens covers, quality padded neck strap, generic instruction sheet, warranty card.

Retail Price: £160-£200 UK

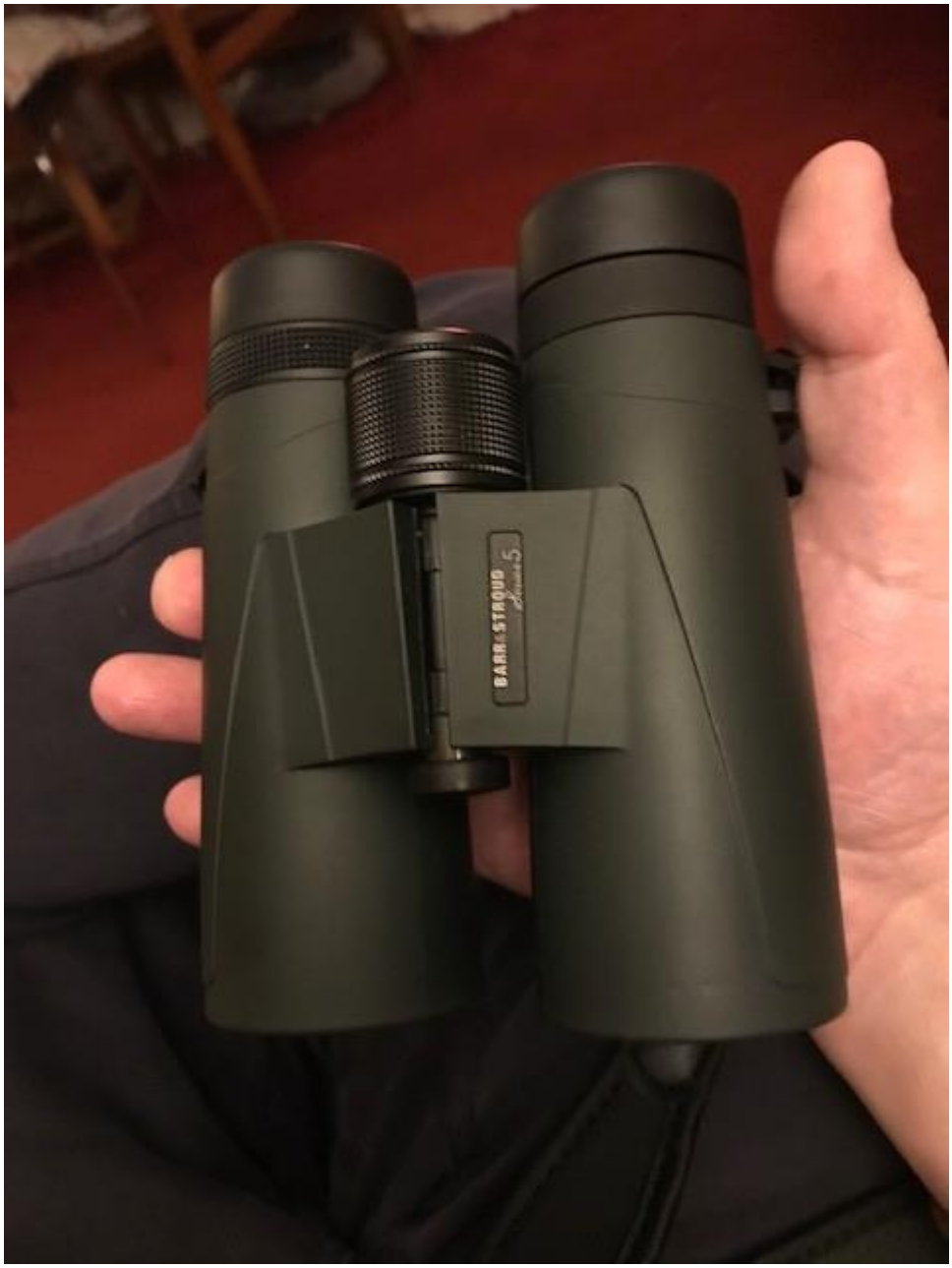
Ever since I was first introduced to Barr & Stroud by a village acquaintance, I've been singularly impressed with their line of roof prism binoculars. The Sahara range is one of the best options you can buy for under £80 and even these give you perhaps 60 per cent of what any premium binocular of similar specifications can offer up. Why can I assert that with confidence? Because technology has advanced so much now that even budget binoculars today vastly outperform premium instruments produced just a few decades ago. Advances in mechanical and optical engineering are now providing the budget consumer with instruments that are fully multi-coated, with phase corrected roof prisms, full waterproofing and purged with dry nitrogen to prevent internal fogging. Coupled to all of that are advances in material science, which enable the binocular manufacturer to create solidly constructed chassis fashioned from light weight metallic alloys like magnesium, titanium and aluminium, as well as synthetic polymers. Taken together, these advances mean that there has never been a better time to purchase a quality binocular at a price that won't break the bank.

Having sampled various binoculars from Barr & Stroud, including the Sahara, Sierra and the Savannah range, I am more convinced than ever that this company employ staff that have advanced or even specialised knowledge in optical design. As I've explained in a few previous blogs, Barr & Stroud once enjoyed an illustrious reputation for delivering fine optical products to the British Navy during two world wars. With the advent of increased globalism in the post-war era, the company ceased trading independently in the late 1970s, but in 2008 the company was re-registered Barr & Stroud under its new parent company, Optical Vision Limited.

I surmised that any firm that created state-of-the-art optics for the British Navy would also know a thing or two about making rugged and long-lasting instruments that worked in the harshest environments and under very severe lighting conditions. They would therefore know how to suppress glare and internal reflections, how to hermetically seal off optics from the elements and how to build instruments that would stand the test of time, even if they are manufactured and assembled in China. All of these considerations came flooding back to me as I began testing one of their most advanced models; the Series 5, 8 x 42.

I purchased the binocular from a reputable dealer, the Birder's Store in Worcester, England. I paid £159.95, which included a free two-day delivery to my home. That was a very good price, as other outlets were selling the same binocular for £200 +. I have learned the hard way about buying more pricey binoculars from mass market outlets like Amazon, which seem to have inventories that often have mechanical and/or optical deficiencies which ultimately leave you cold. Reputable dealers, in contrast, get stocked with the best gear from any given range so you can be much more confident of obtaining a properly functioning instrument if purchased via these routes.

First Impressions



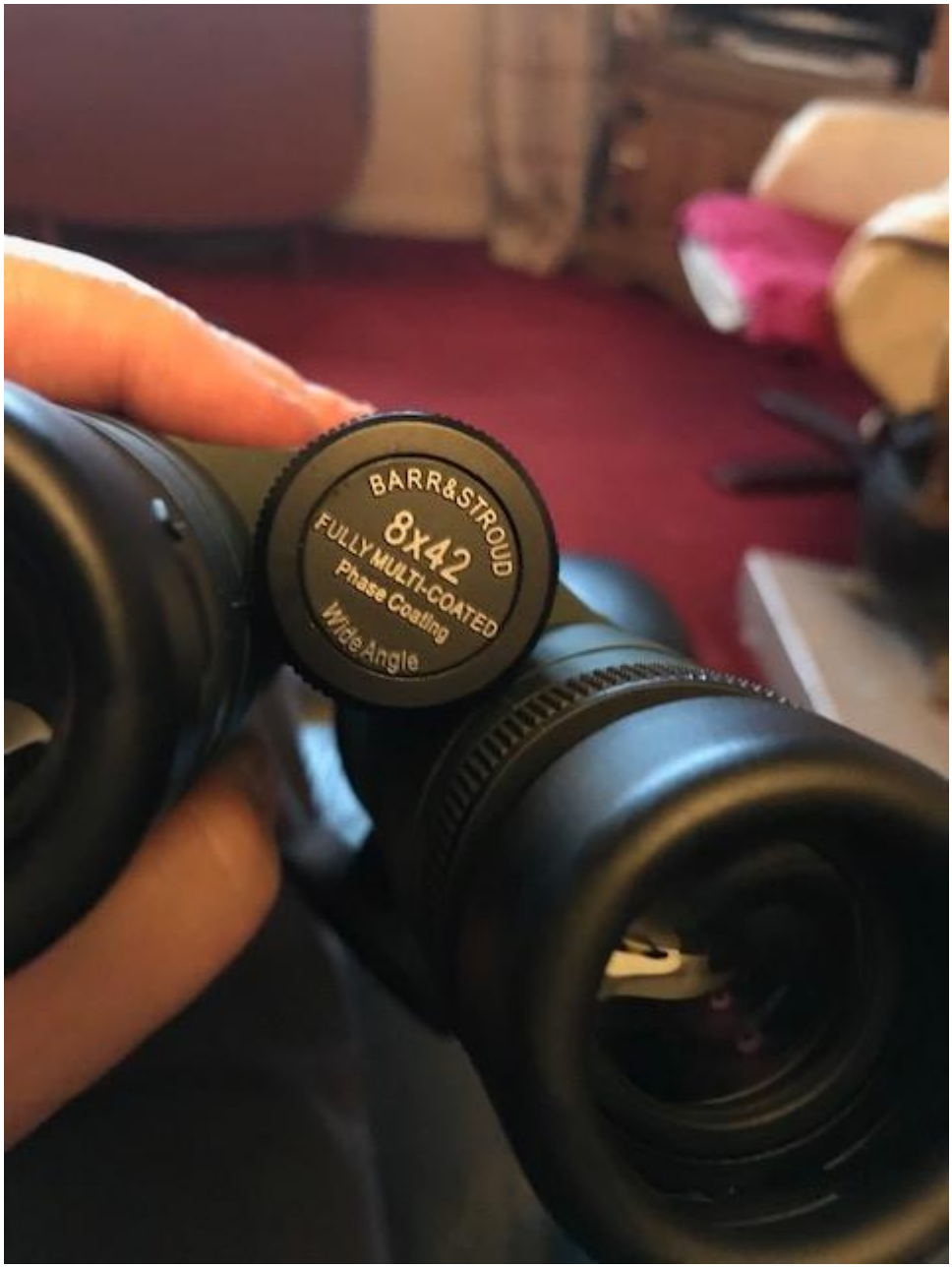
The Barr & Stroud Series 5 8 x 42 is a handsome instrument that feels good and solid in the hand.

The Barr & Stroud Series 5 8 x 42 is a handsome instrument that feels good and solid in the hand.

The instrument arrived double boxed, with everything packed away safe and securely. Unzipping the hard clamshell case revealed the binocular packaged inside a plastic bag. From the moment I held it in my hand, I could see it was a well-designed instrument, quite conventionally styled, and at 715g, weighing in more than 100g lighter than the Savannah 8 x 42 binocular I showcased very favourably in another review. The chassis is constructed from a magnesium alloy overlaid with a thick rubber substrate for extra grip.

Though it sports much of the same optical specifications as the Savannah 8 x 42, the ergonomics of the Series 5 are a good step up from the Savannah. For one thing, the dioptre ring is situated back under the right eyepiece, which is more sensibly placed than that of the Savannah series, which placed the dioptre setting just ahead of the central focusing knob. The dioptre ring is quite rigid and difficult to turn and so is not likely to get out of place easily.

The focuser on the Series 5 is remarkable, easily the best I've encountered in models costing as much as three times its modest retail price. It is buttery smooth, completely backlash free and very easy to grip owing to the textured rubber covering its all-metal construction. Unlike a few other models I've tested which possessed an outwardly similar appearing focus wheel, you don't hear the sound of cheap glue unhinging from the internal focusing mechanism as you hone in on your object of study. I've noted several times before that Barr & Stroud (B & S) produce binoculars with excellent focusing knobs and this one is no exception. Indeed, I would rate it of higher quality than its counterpart on the Savannah series and just a notch below my state-of-the-art Leica Trinovid 8 x 32 HD. In addition, I would describe the focuser speed as slow to progressive, moving through just over two full rotations going from one end of its focus travel to the other. It also focuses beyond infinity- a useful attribute that helps tweak edge-of-field images as and when required.



The focus wheel on the Series 5 8 x 42 is a work of art. Exceptionally smooth, backlash-free and a joy to turn.

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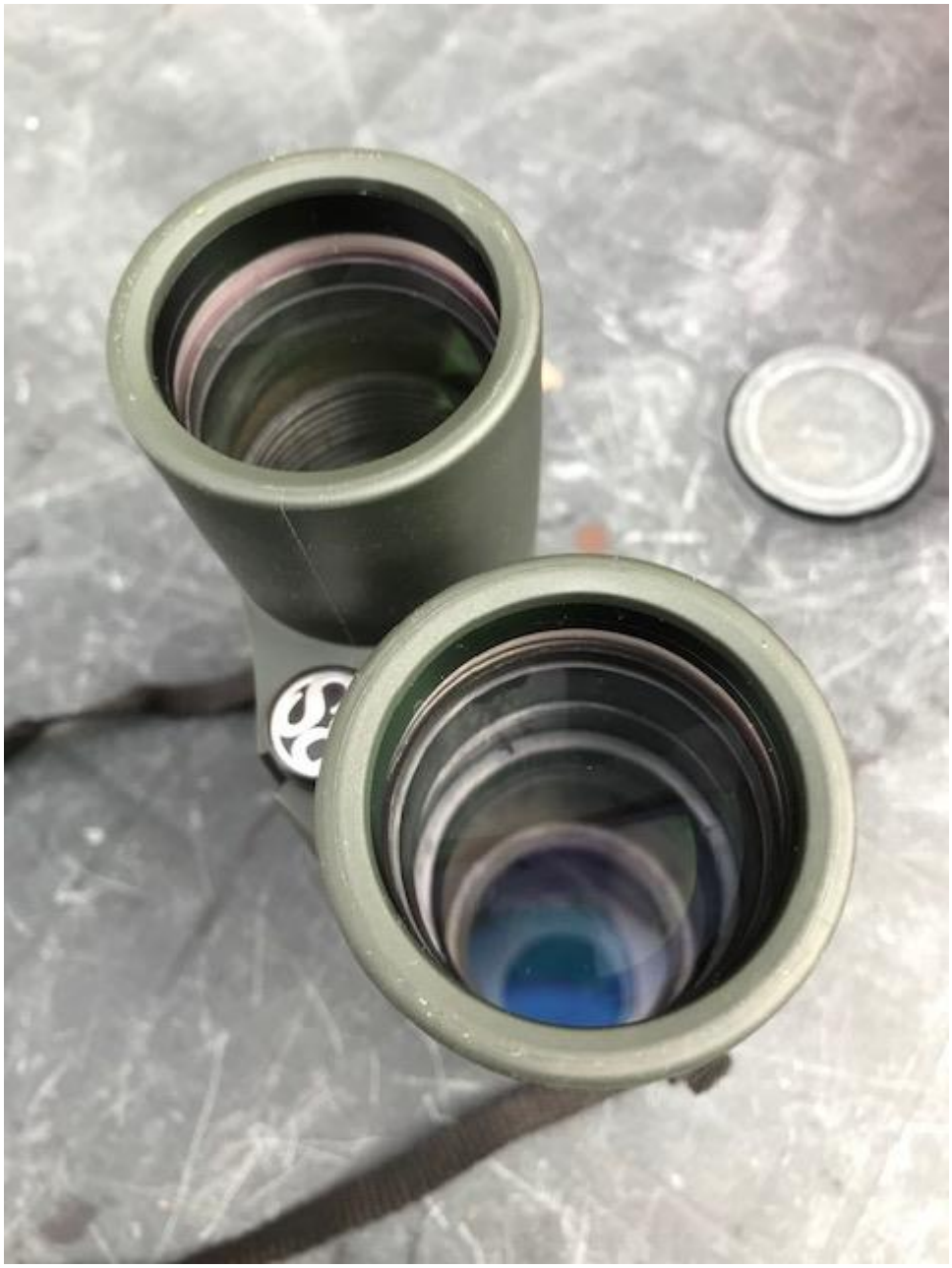
The eyecups are made from metal overlaid with soft rubber and twist up in three stages. The eye relief on this instrument is a very generous 17.2mm, ample enough for eye-glass wearers to engage with the vast majority of the field. They are quite firm once locked in place, though I have noticed that the left eye cup is not quite as rigid as its right eye counterpart. They are less rigid, for example, than those found on the Celestron Trailseeker and Nikon Prostaff 7s series. As a reasonably experienced binocular user, I felt a bit of anxiety over this issue, as I like my eyecups to be absolutely rigid and don't

want to wake up one day soon to find it fails to lock at all. I would have liked if B & S took some time in designing the eyecups so that they would hold their positions as rigidly as possible.



The objectives are deeply recessed, as all good mid-sized binoculars ought to be.

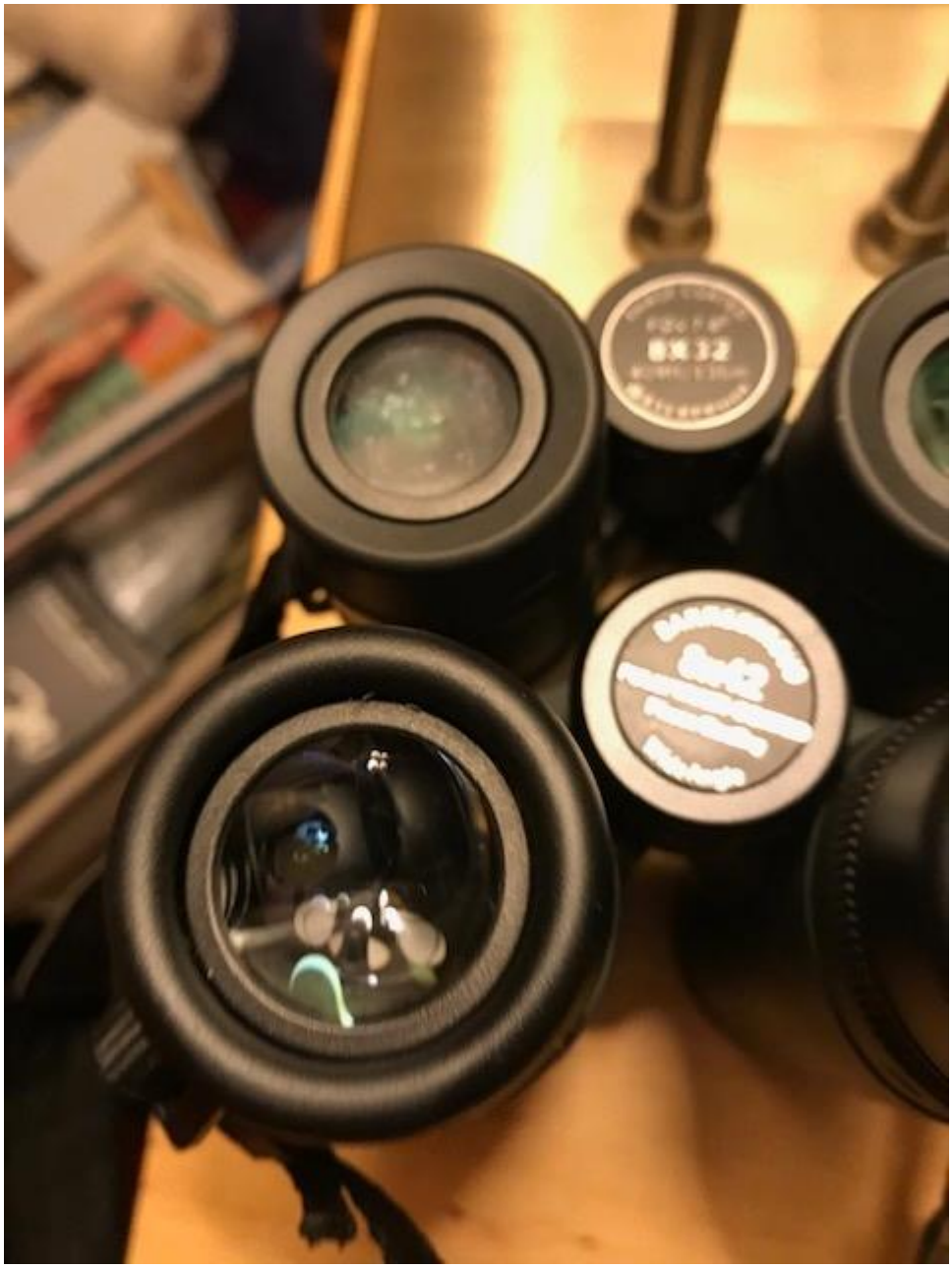
The fully multi-coated objective lenses are deeply recessed, conferring extra protection from rain, dust and stray light.

The objectives are deeply recessed, as all good mid-sized binoculars ought to be.

The accessories that attend this Series 5 binocular are also of good quality. You get a nicely padded neck strap adorned with the B & S logo, snugly fitting rubber rain guards and tethered objective covers that protect the instrument from the elements as well as from accidental scratching.

The B & S Series 5 also boasts a hydrophobic coating applied to the outer lenses which causes any accumulated moisture to pool and run off / evaporate quickly. I tested to see if this was the case by performing a simple breath test on the ocular lens and comparing it to an untreated lens surface. In the picture shown below, I can reveal that the ocular lens on the Series 5 binocular dispersed the fog about twice as quickly as my control binocular, a Celestron Trailseeker 8 x 32. Even though the latter has a smaller ocular lens surface area, the fog dispersed faster on the Series 5. Impressive stuff!

The fog test shows the Series 5 (bottom) does have a hydrophobic coating that disperses moisture faster than a non-coated ocular lens(top). Both ocular lenses were fogged up at the same time.

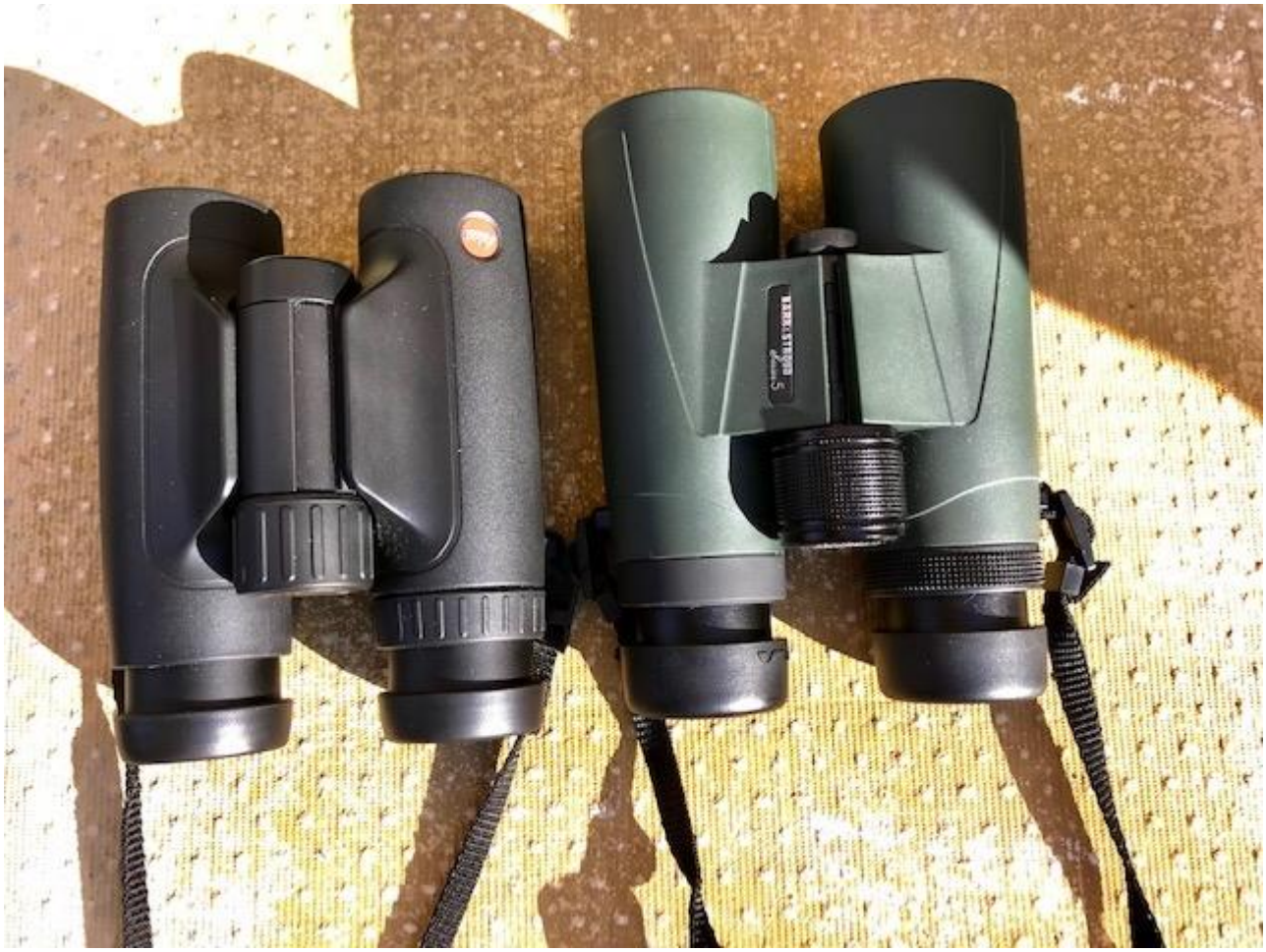


The fog test shows the Series 5 (bottom) does have a hydrophobic coating that disperses moisture faster than a non-coated ocular lens(top). Both ocular lenses were fogged up at the same time.

Optical Evaluation

In order to be objective as possible, I decided to carry out tests of the Series 5 binocular alongside my control instrument; a Leica Trinovid HD 8 x 32. My first impression of the Series 5 8 x 42 showed a lovely bright, sharp, high-contrast image with a huge field of view and a very large sweet spot. Depth of focus is excellent, with anything beyond about 60 yards remaining in sharp focus and only requiring the merest tweak to obtain optimal results. Handling is superb. The focus wheel is beautifully responsive and focuses down to about 1.78m – that's significantly closer than advertised (2m), but not as good as the class-leading 0.95m the Leica Trinovid is capable of. Contrast and colour saturation

in both binoculars was excellent with the nod going to the Leica, which has a more neutral colour tone compared to the slightly warmer tone of the Series 5. The Leica had better off-axis performance than the Series 5 however, with less pronounced pincushion distortion, lateral colour and field curvature. That said, it must be noted that the Leica has a considerably smaller field of view than the Series 5 – 7.12 vs 8.14 angular degrees, respectively.



The Leica Trinovid HD 8 x 32 (left) compared with the Barr & Stroud Series 5 8 x 42 (right).

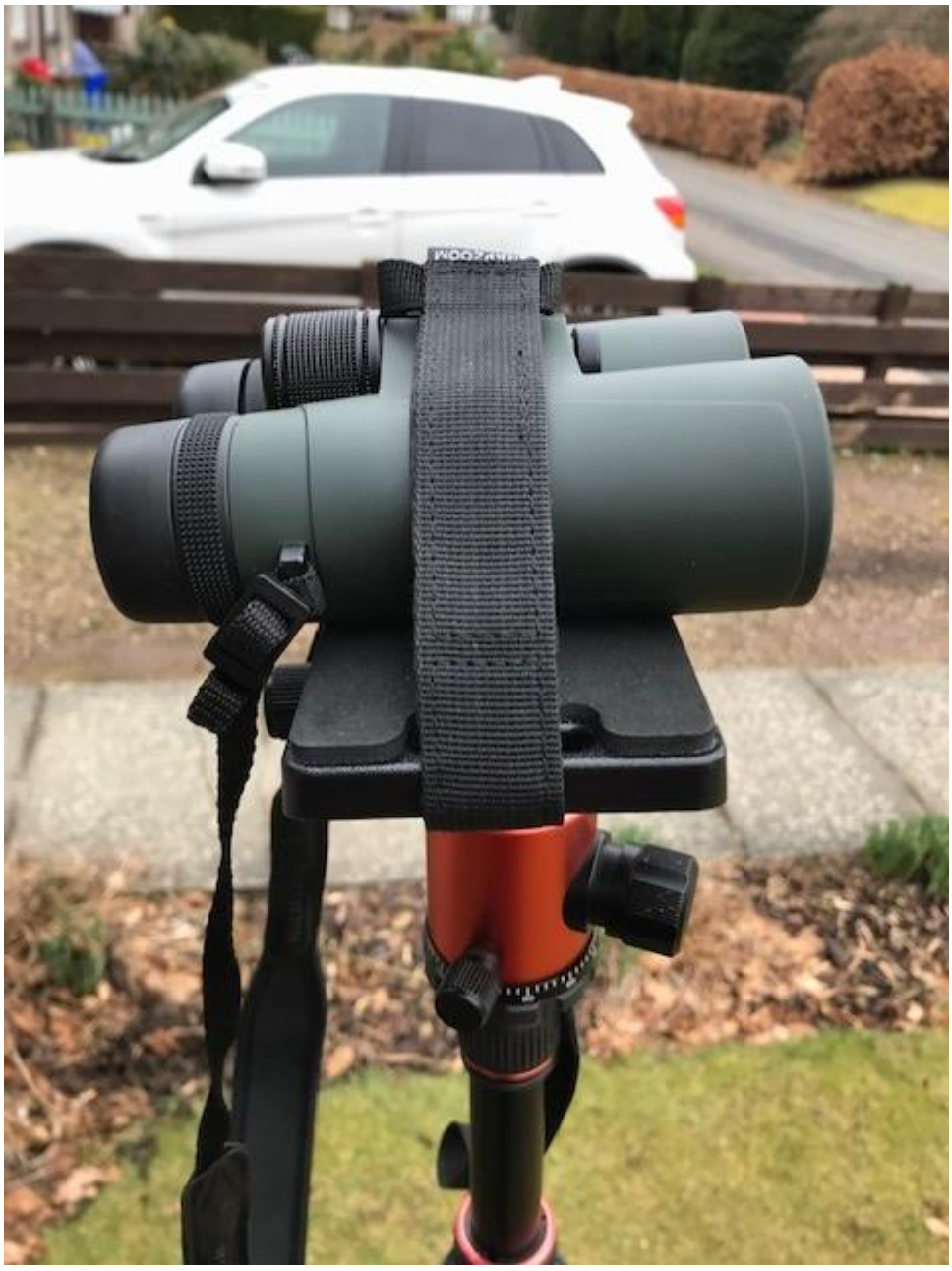
Performing my iPhone bright light torch test revealed superb results for both instruments. The image was clean, with no significant internal reflections in either instrument, no diffused light and the merest trace of a weak diffraction spike. The same was true when I pointed both binoculars at a bright sodium light after dark. The image was crystal clear with no diffused light, internal reflections and diffraction spikes. To be honest, I was actually expecting such a result for the Series 5, as several other tests I carried out on their less expensive Savannah series also yielded excellent results. These tests affirmed what I observed in my preliminary comparison of the two binoculars during a quick daylight evaluation.

But there was still more excellent results when I tested the Series 5 alongside the Leica glass for veiling glare. This is easily evaluated by pointing the instrument upwards at some tree tops against a bright, overcast sky. I am delighted to report that the Series 5 was every bit as good as the superlative Leica Trinovid in this regard. Taken together, these are excellent results that set the Series 5 well ahead of

other binoculars costing significantly more, including the Viking ED Kestrel and Merlin, the Zeiss Terra 8 x 25 pocket, and way ahead of the otherwise beautifully designed Leica Trinovid BCA 10 x 25. Barr & Stroud have really delivered wonderful performance in the suppression of internal reflections, glare and lens flare; an amazing result when you also factor in its modest retail pricing!

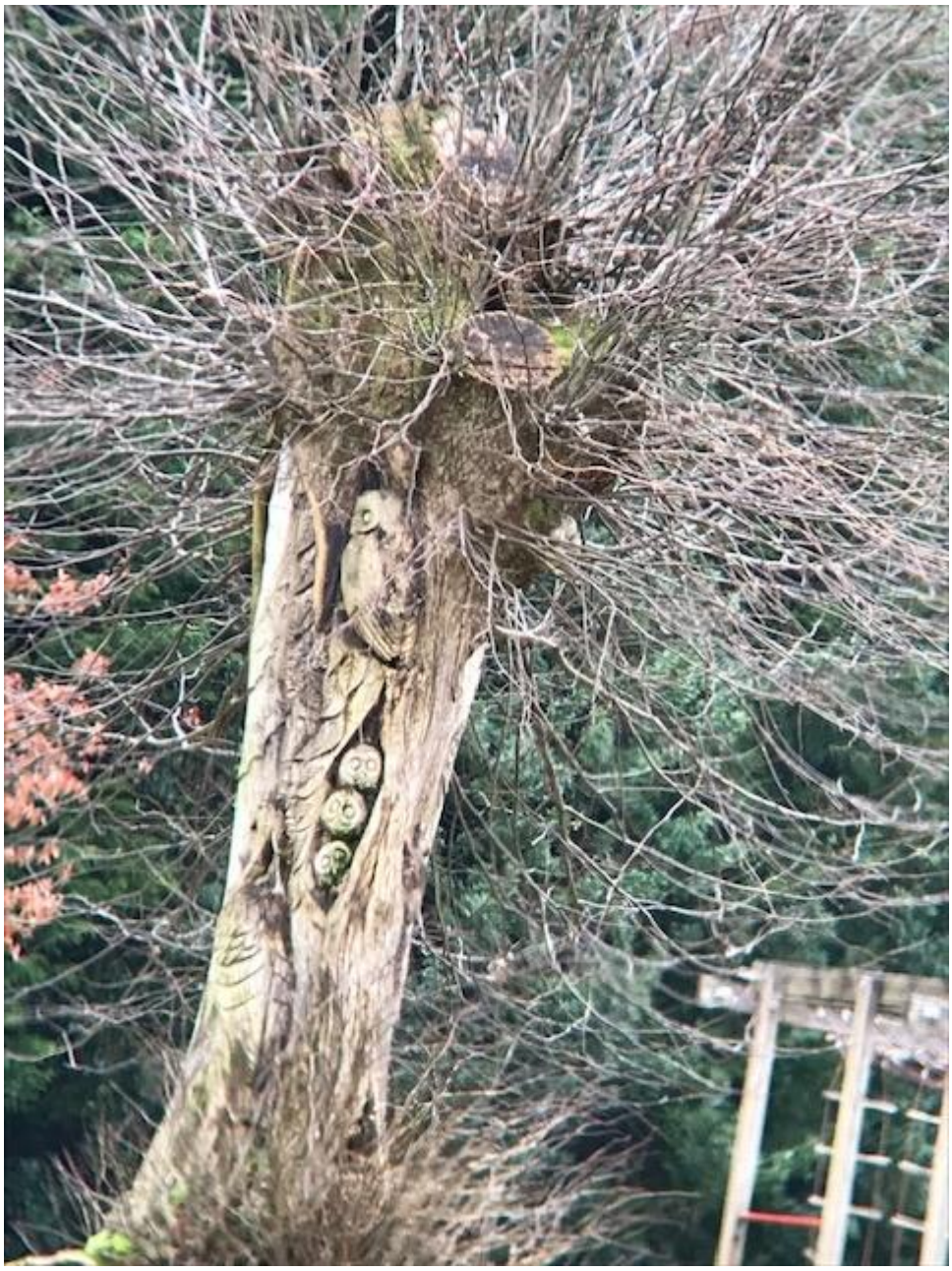
The Camera Never Lies

After acquiring a neat new binocular mounting platform and digi-binning gadget I was able to capture images through the Series 5 and Leica Trinovid, enabling me to more objectively assess the optics of both instruments. And here again, the Series 5 stepped up to the mark!



The binocular mounting platform used to take images with my iPhone.

Below is an image taken of the wood carving in a tree located some 60 yards away as seen through the Series 5 8 x 42. The images are completely unprocessed; just the raw images as they were shot through my iPhone mated to the digi-binning adapter.



iPhone image of wood carving through the Series 5 8x 42 binocular.

The next image is shot though the Leica Trinovid HD 8 x 32 under the same conditions.

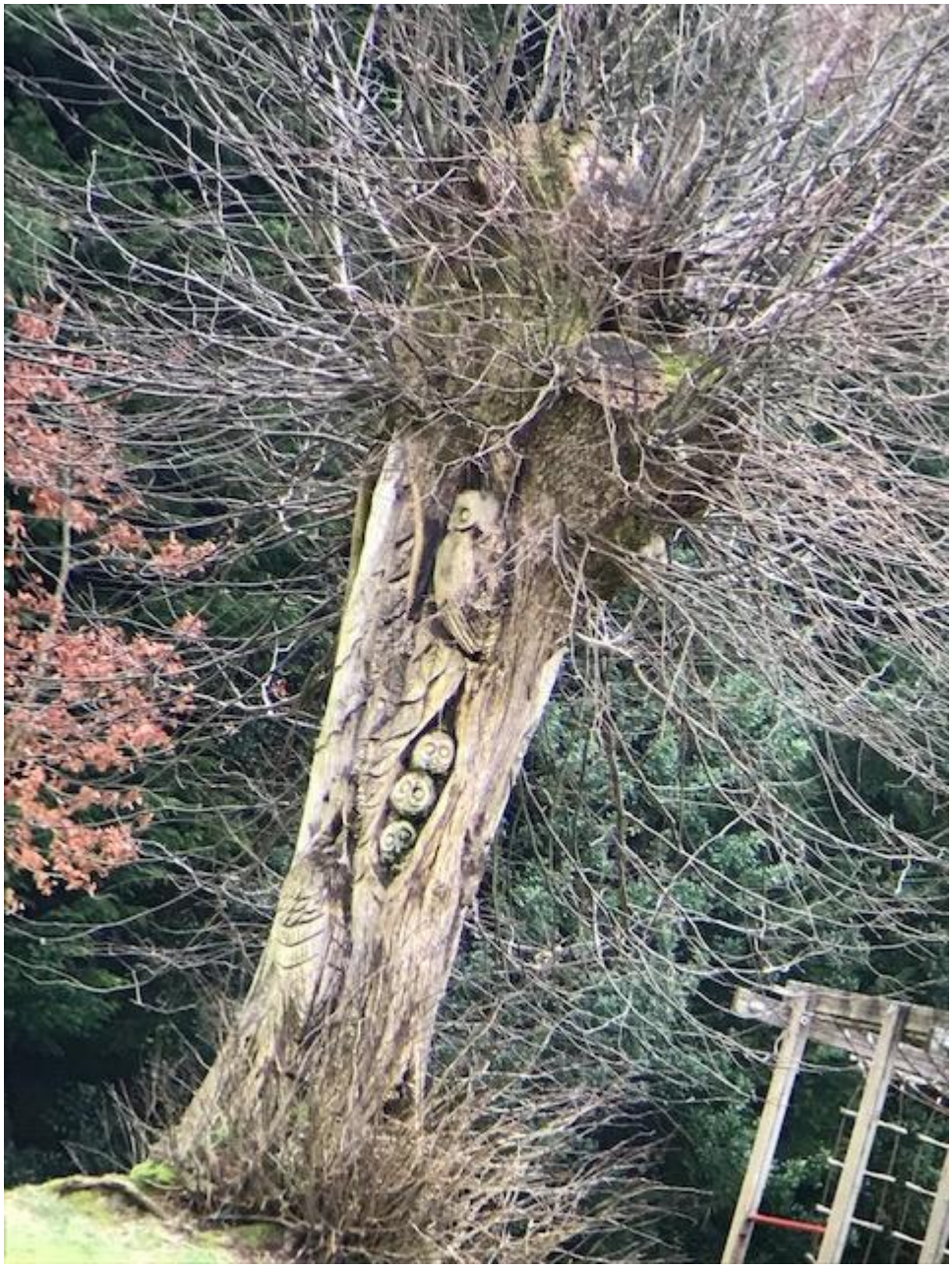
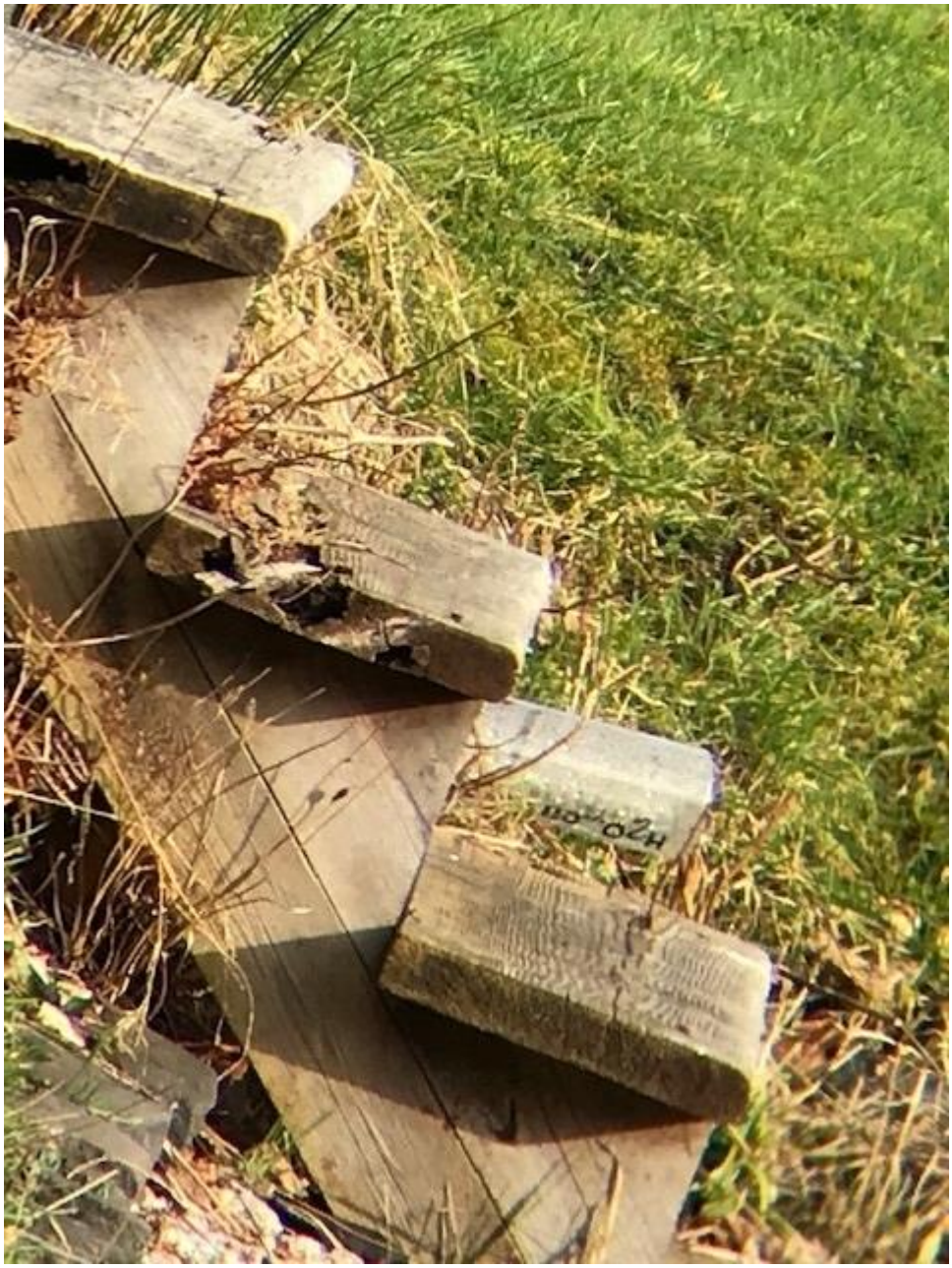


Image taken through Leica Trinovid HD 8x 32.

You can see that the Leica has the edge in terms of image sharpness, colour saturation and edge of field correction, but what's remarkable to me is how good the Series 5 binocular has turned out!

I took another set of images of some wooden steps located about 20 yards away. The first image was taken through the Series 5 8 x 42.



Close up of some wooden steps taken with the Series 5 8 x 42.

And here is the same target at the same scale taken at the same time with the Leica Trinovid HD 8x 32.

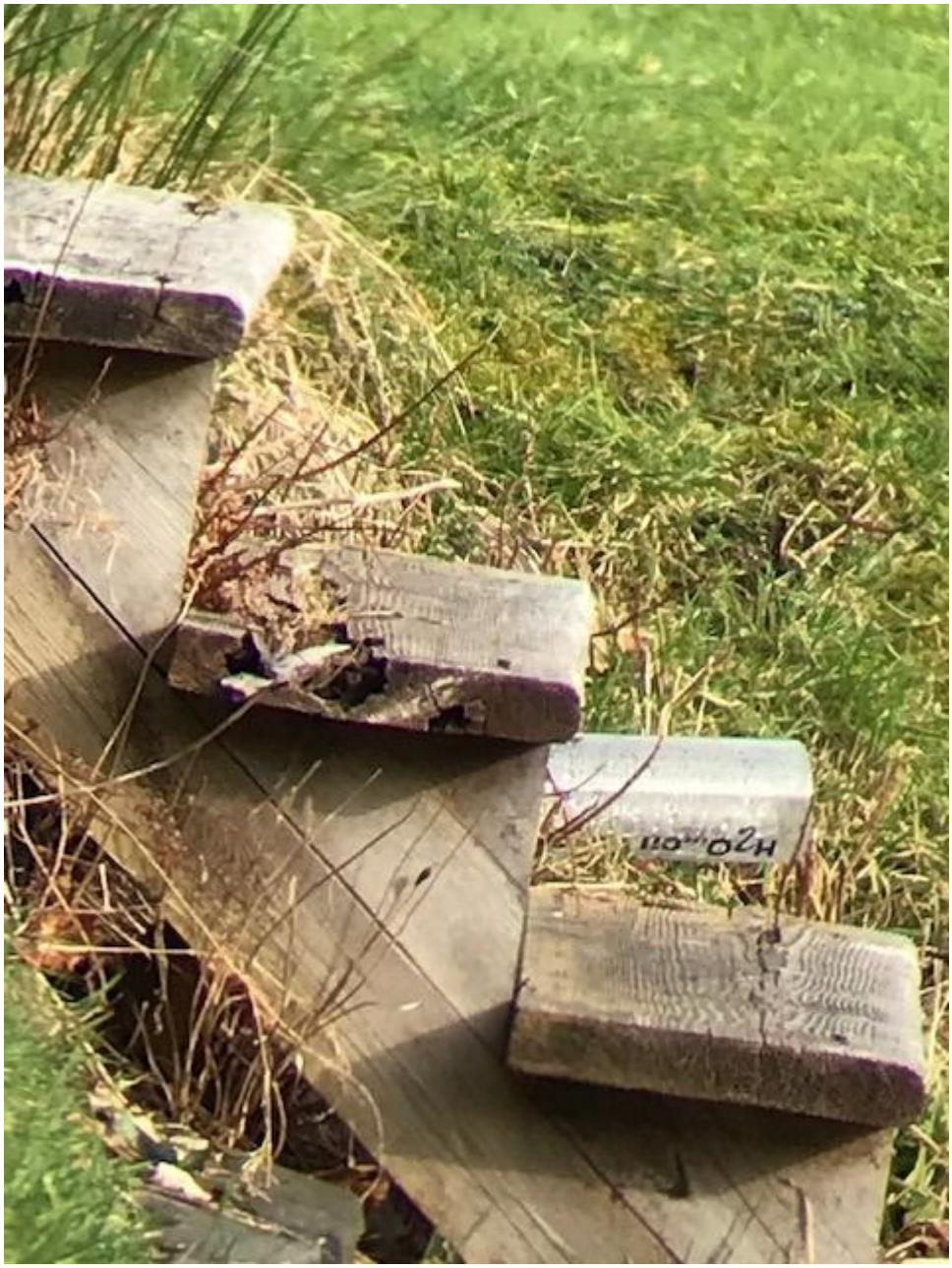
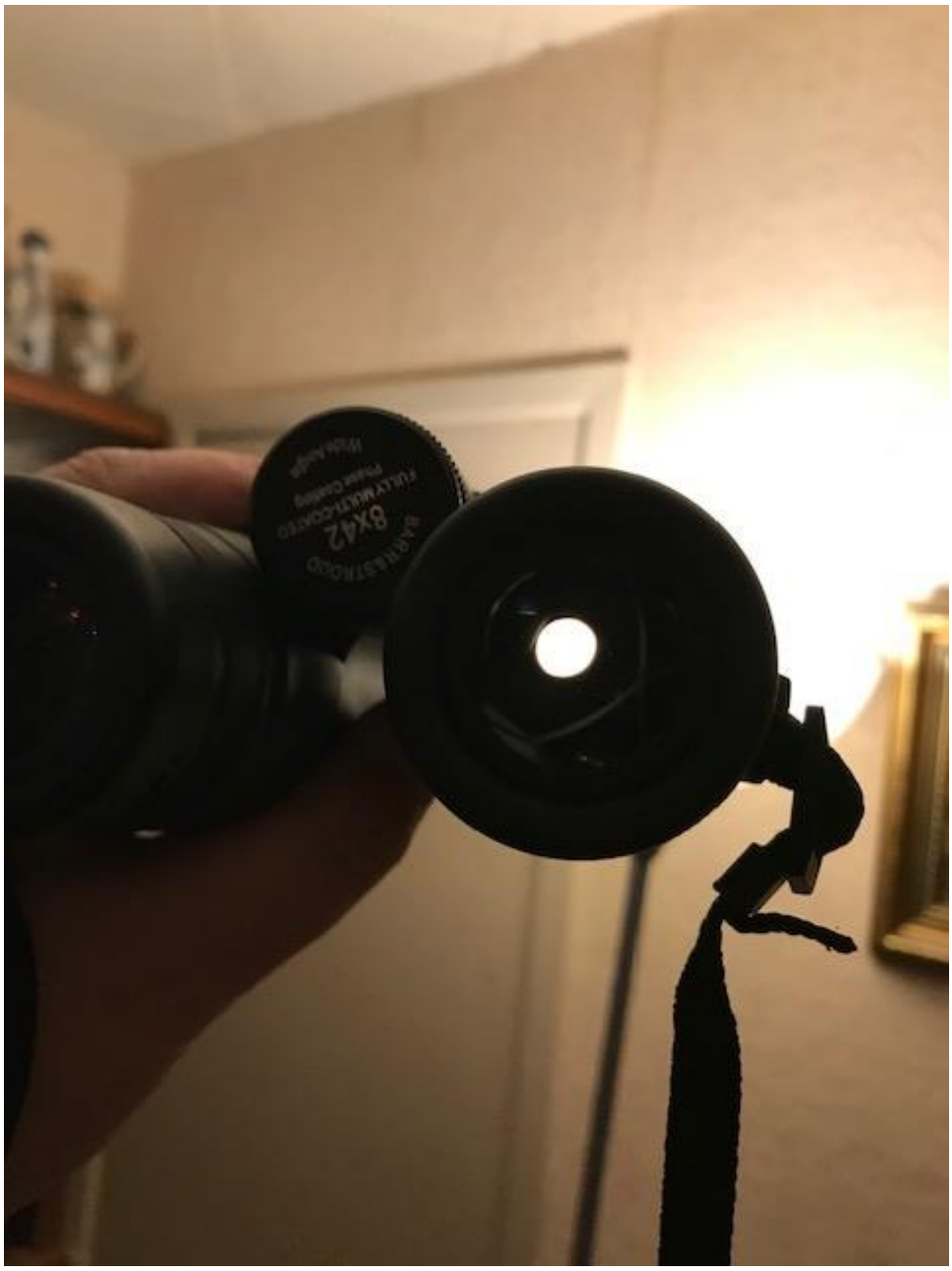


Image of the same steps taken through the Leica Trinovid HD 8 x 32.

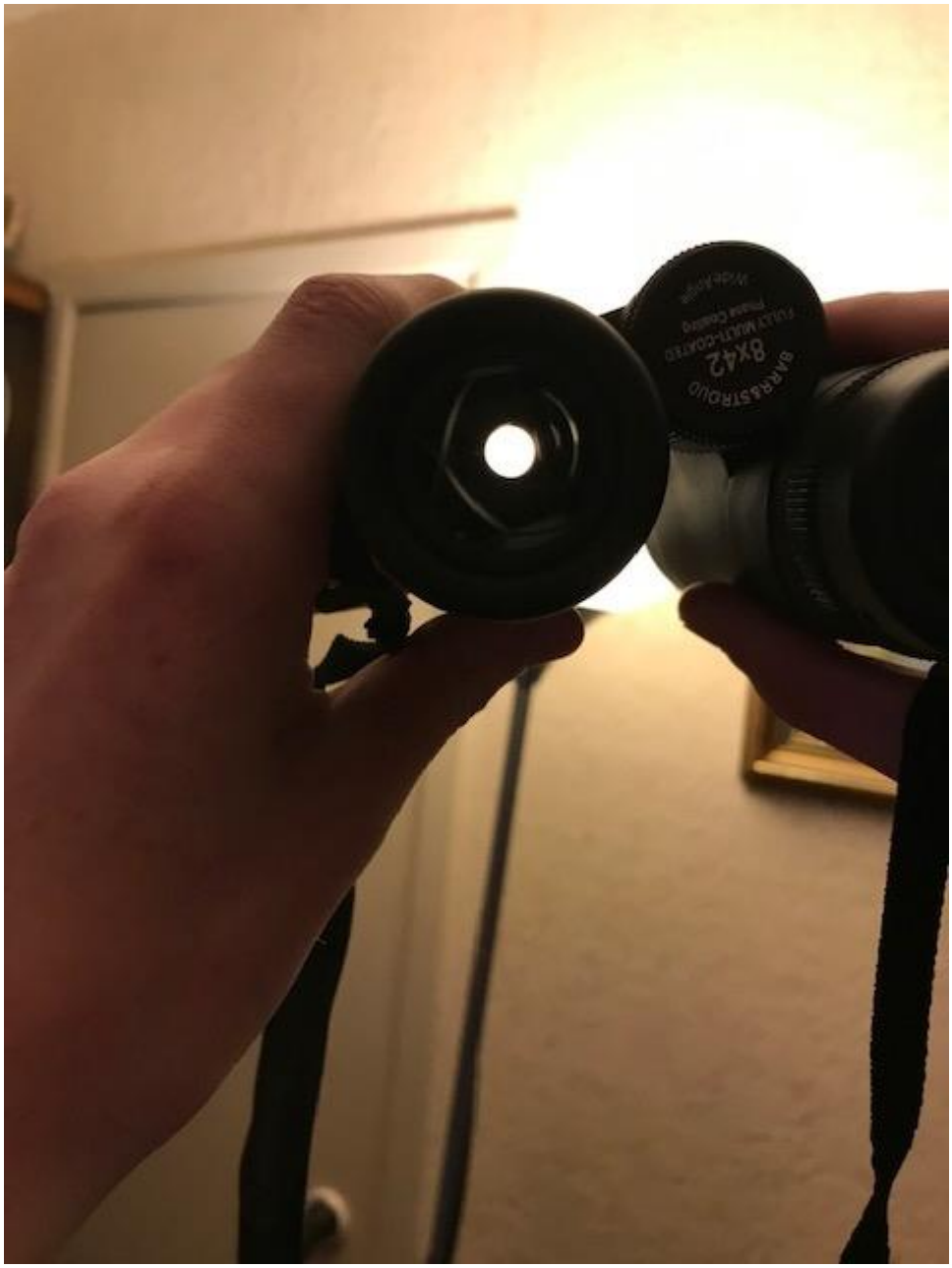
The Series 5 image has a warmer tone than the Leica, but I think that there is little to differentiate them in terms of sharpness. The Series 5 shows a little more chromatic aberration in high contrast areas than the Leica but if you look carefully at the images, you'll find some secondary spectrum in both glasses. All that having been said, the view through the binoculars using your eyes is far better than what the camera picks up. Bear in mind that your eyes were created to accommodate things like field curvature, chromatic aberration, and other optical defects far more effectively than an Iphone camera.

Now let's compare prices: the Leica costs nearly 5 times the retail price of the Series 5 Barr & Stroud!

The exit pupils in both barrels of the Series 5 Barr & Stroud are nice bright circles, indicative that the optics have not been truncated. Also check out the nice dark areas immediately around them! Very nice indeed!



Right eye exit pupil.



Left eye pupil.

Further Notes from the Field

The Series 5 feels really good and sturdy in my middle-sized hands. It is supremely comfortable and immersive to look through, a consequence of the large exit pupil of the instrument. I'm also quite fond of the colour tone the Series 5 throws up. Once again I was reminded of why this particular configuration of binocular is close to being the ideal all-round instrument used by the naturalist. Even though it has a very large field of view, the level of correction it achieves is very impressive. While a

lot of binoculars presenting this size of field have very blurry edges, the Series 5 field is pretty much useable from centre to edge. The focus wheel rotates at a speed roughly mid-way between a good hunting bino(slow) and a birding bino(fast), making it ideal for both activities. I measured the size of the true field under the stars. I was just able to fit the two stars in the Big Dipper – Phecda and Merak – into the same field. These are separated by 7 degrees 54 arc minutes(7.9 degrees), thus a little under the advertised field size of 8.1 angular degrees.

The reduced mass compared to the Savannah series is also very noticeable, enabling it to be worn for longer in the field before neck strain sets in. The padded neck strap also increases the level of comfort afforded to this binocular.

The instrument begins to pull ahead of my 8 x 32 Leica Trinovid shortly before sunset, where its larger aperture and greater exit pupil size transmit more light to the eye as dusk progresses. It's also considerably better as an astronomical instrument than the 8 x 32, pulling in more starlight across a noticeably wider field of view. I enjoyed some spellbinding views of the Beehive cluster, the Belt stars and Sword Handle of Orion, the magnificent Pleaides and Hyades and many other celestial sights. It's also an excellent moon-gazing binocular, throwing up the most gorgeous pastels as clouds approach and recede from it on a windy night.

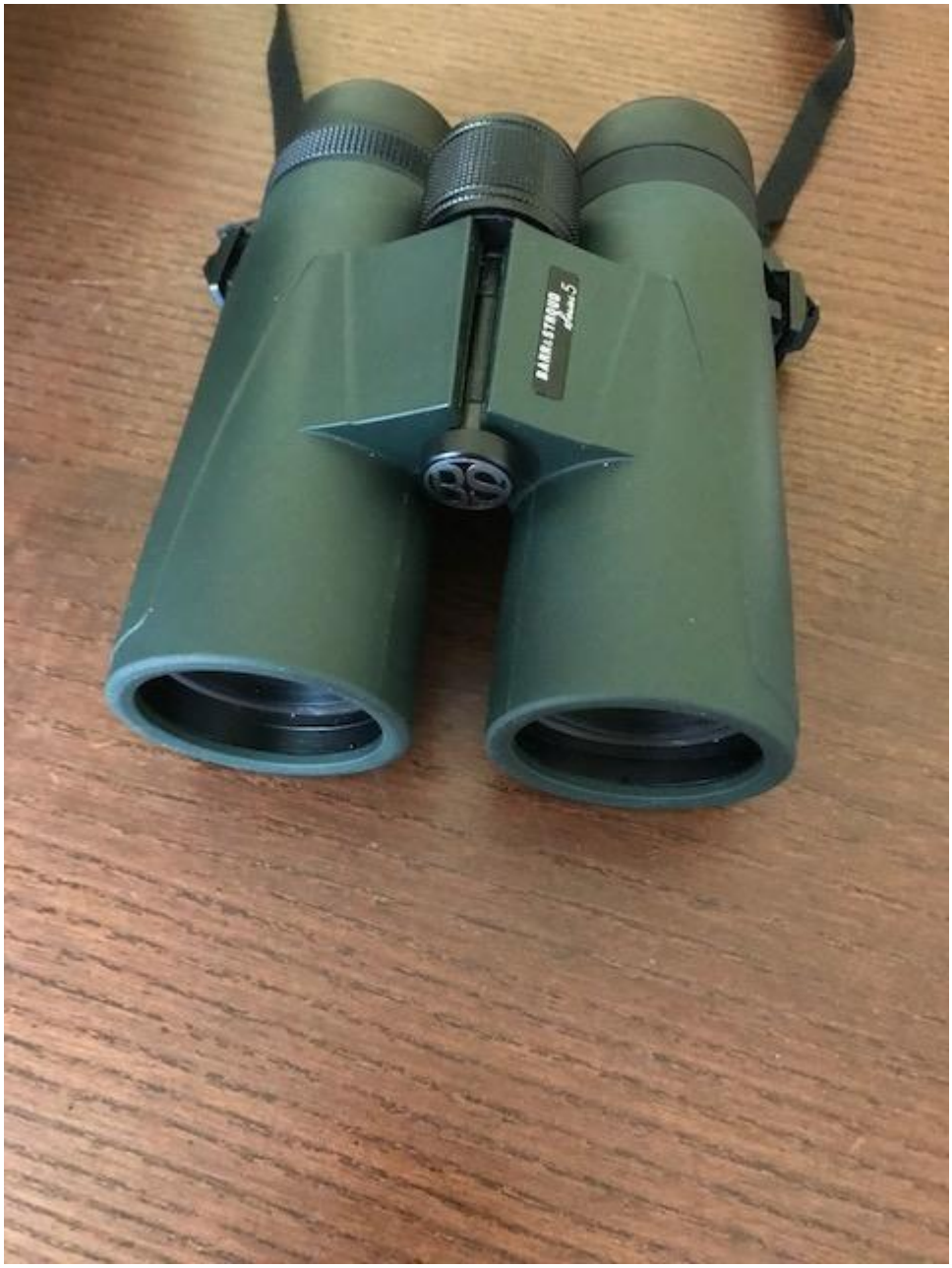
Conclusions & Recommendations

The Barr & Stroud Series 5 8 x 42 is a remarkable instrument in a number of respects. The images it serves up are very sharp, bright and show very high contrast with impressive depth of field. The field of view is very large and well corrected, with only a little peripheral softness. The binocular also shows exceptional control of glare and internal reflections. Ergonomically, the Series 5 is a joy to use, with an exceptionally smooth and precise focus wheel and a very tight right eye dioptre which rigidly stays in place. The instrument feels solidly made, with high quality twist-up eye cups and with its large exit pupil, easy to align with one's eyes. And on the night sky, the 8 x 42 is vastly superior to any 8 x 32.

My experience with this Series 5 has led me to re-evaluate my current inventory of mid-size binoculars. Indeed, with a heavy heart, I must concede that it is a better general-purpose instrument than the Leica Trinovid HD 8 x 32. Indeed, the only real advantages the Trinovid has going for it pertain to its lower mass and slightly smaller frame, but if I'm being honest, these differences are not enough to justify staying with the 8 x 32 format.

I would highly recommend this binocular to birders, hunters and other nature enthusiasts who want maximum bang for the buck. If you're thinking of getting a more expensive brand, I would encourage others to test-drive the Series 5 first before parting with their hard-earned cash. Incidentally, Barr & Stroud also market an ED version of the same instrument; that is, you get the same ergonomics with

an extra-low dispersion objective element for about £70-100 more. Would I be interested in the ED version? No, for reasons that I have explained in a number of previous blogs. My eyes are perfectly sated with the achromatic version of this binocular, but your mileage may vary!



A very valuable addition to my binocular collection!

Thanks for reading!

Dr Neil English is the author of seven books in amateur and professional astronomy, who currently is enjoying a new lease of life exploring the fascinating world of binoculars. If you like his work, why not consider buying one of his books or by making a small donation to the upkeep of his website so that he can keep bringing you more of what you like.