Asahi Takumar 500mm f:4.5

A How and Why Series

By George E. Norkus

When I was looking for a long telephoto lens, at first I checked out the newer models. Most were zoom lenses. These were from automatic to manual and refraction to mirror lenses. They had all of the “latest and greatest” functions which are nice to have but they came with a steep price! Most were at least two thousand dollars with a several being higher. Way beyond my reach.

Looking at used lenses on line, I came across many older units listed for sale on the market. Most were specialized for certain brand cameras only. Then I found some older M-42 mount lenses. These would be easily adaptable to many cameras and the prices were much more to my liking.

The M-42 mount would allow me to obtain an adapter to fit just about any camera on the market which included my Pentax K1 full frame camera. I found a lens that happened to be an old Pentax lens. So it seemed like a

natural match. The lens was a nice Asahi Pentax 500mm, f:4.5. For me having a 500mm lens with f:4.5 light gathering and a 110 mm front objective glass, (just shy of four inches), is very impressive to say the least and the best part was that it only cost me a couple hundred dollars.

(A few accessory stored on a tray within the box)

The lens is a fixed 500mm, totally manual, all steel and glass, I'm guessing about 60 years old at the time of this writing, and it weighs about six pounds. It came to me without any kind of case or wrapping so the of the first thing I did was to find a case for it. Looking all over the place for anything usable, I finally came across a hardware store tool box that it would fit inside of.

(The sponge padding)

Then I went to another store that sold all types of padding and sponge. When I ordered the sponge I also handed over the toolbox and lens so the store could make all the necessary cutaways to fit the lens within the toolbox. Everything ended up fitting perfectly. I also added a couple metal handles on the toolbox ends, which made a very good protection case.

The lens itself had excellence reports from other users but does have a slight bit of purple fringing. This was a common problem for many lens from that era. All I needed to do was to obtain a proper M42 adapter to mount my Pentax camera.

In an attempt to save money, I went for the cheapest adapter there was, after all how much difference can there be? That turned out to be a big mistake! The difference I found was, the cheaper adapter almost didn't let me mount it. Once mounted I had a very difficult time unmounting it. When it was mounted I fount that I could not focus on infinity. A second purchase of a higher quality adapter corrected all my former problems.

(The objective lens showing very good glass)

The big objective end glass had no nicks or scratches visible. A slight looseness could be felt with the focusing ring which confirmed what some other owners have reported. Most likely that came from the past user's

operation. The slight wobble is still there but so far I have not experienced any other noticeable slight hassles.

Checking out other 500mm f:4.5 lenses, I learned the factory started applying a super–multi coating on the glass and the aperture range covered from f:4.5 to f:45, my first older lens range only covered from f:4.5 to f:22. Looked around, I found a slightly newer 500mm lens that did have the coated glass and an aperture range going up to f:45. All that plus it was very inexpensive.

Being that any possible parts would be next to impossible to find, I decided to purchase it as a spare. The second lens had more good things so I used it instead and have my first lens to be my spare parts lens.

(The apertures range showing f::4.5 to f:45)

At first I felt the higher f-stops were going to be a big bonus. After using the lens for a couple months, I realized I never really use the higher aperture setting. Additionally, others have reported that more diffraction occurred beyond f:22. Maybe if I photographed the sun a lot I might need it but I don't. If I ever wanted to, that's why the make filters.

Another thing about the sun. **Never** point the lens directly at it without a sun filter or you just may find your camera becoming messed up as well as your eyeball.

Built into the rear portion of the lens is a location to place an internal 49mm filter ring mount. This is because the front objective glass mount is around 110 mm, making filters near impossible to come across. It's unlikely anything but a colored or a neutral density filter will ever be used in that location.

(Photo of the mid three prong lens fixture)

You can find the 49 mm mount by unscrewing the third ring from the camera mounting end. All of my other lenses at home have a 52mm or larger diameter mounting. I don't really have any 49mm filters except two that were used for black and white film. Upon closer examination I was able to mount a 49 to 52mm step up ring in that location. Now I can use any of my more common 52mm filters.

There should be only one proper way to assemble the smaller rear portion of the lens. When you carefully fit them together, notice where the three male slots are and the three female slots are. Make extra sure that after tightening, none of the male and female slots are not close to each other. If something

should accidentally twist and come apart you may find your camera falling on the ground. It will take some trial and error to get the connection right. Hopefully, as with everything else, this will only be a seldom made adjustment. Be advised and take the time and do it correctly.

On top of the lens barrel, about in the middle, you can see the “V” notch used for simple aiming of the lens. Having looked at a few other Asahi 500mm lenses, I noticed that many did not have one. Somewhere in the past it either broke off, fell off, or just got lost. They are small and held by a couple tiny screws. If you're not careful, the sight can also bend is very easy to break off should you bend it back.

(Both of the target aiming sights plus the M42 adapter)

If you still have one be very careful. DO NOT bend it! They are not meant to be adjusted that way. Loosen the tiny screws to adjust it. I'm pretty sure many people did not have the proper screw driver and bent them in an attempt to line things up only to have them break off. Get the correct tool! They are found in most hardware stores and are pretty inexpensive.

A raised focusing “dot” just like you see on most guns, is further forward on top of the barrel. This is NOT to be bent either. Loosen the three tiny screws on the ring and twist the ring. The “V” and dot are meant to initially aim the lens to approximately what your going to be looking at with the camera.

Once properly lined up, they should not ever need further alignment.

While having the lens mounted on a tripod, I did the initial aiming at an object a couple hundred feet away. After that I mounted my camera body. The camera's prism assembly blocks the aiming sights view. That made it nearly impossible to properly aim the lens with the sights.

If you want to aim the lens after the camera is mounted, you can twist the camera body 90 degrees to a portrait position. (Careful! If you assembled everything properly so far, nothing should fall apart.) The aiming sights will only be slightly obstructed. When using a different brand of camera, your results may be different.

Should the aiming not align with your camera's view, an additional adjustment is needed. This means loosening but not removing, the tiny screws to carefully move the sight just like performed earlier.

You'll notice three tiny set screws on the same ring going around the lens as the “dot' is mounted on. All three of the tiny set screws should be loosened a turn which will allow you to turn the ring and make both the dot and the V notch line up to whatever the camera and lens is pointing at.

Unless you are intending to replace any of the screws, DO NOT remove any of them. First find a source of replacement as many stores do not have them. Once the proper sighting is set, all three can be snugged again. Mine fit a small 1.5mm slotted screw driver.

I noticed some lenses that had tiny metric Allen type screws. Either slotted or Allen type screws, both will work fine. I suggest they all be the same type so the proper tool can be obtained.

The lens-to-tripod mount has a standard 1/4” x 20tpi mounting hole to attach to a tripod. I chose to use a 60mm long Arca Swiss type plate just in case I needed to balance the rig.

My lens and camera will now quickly balance on a tripod. I also decided to use a gimbal on my tripod for ease of lens movement.

*One final thing. It's nice to obtain a good range finder. These things are commonly used by hunters and by golfers. When I told other photographers the Bald Eagle they were interested in was 150 yards away, they all seemed amazed. Additionally it helped me focus the lens.