

Through the Vintage Lens:

Carl Zeiss Jena Pancolar 50mm f/1.8

By Arnau Argemi

We have become accustomed at the perfectly engineered look of the pictures taken with our modern lenses. The Through the Vintage Lens Series is a project with the goal of capturing underwater fauna and sceneries using the unique perspective of vintage lenses.

With this project, my intention is to explore the new creative possibilities that imperfect vintage lenses can have on our image-making. From extreme, bubbly bokeh to razor sharpness, these lenses can help capture the underwater world from a different point of view. In this series, I will show images taken underwater with vintage lenses. Additionally, I will explain a bit of the history behind the lens as well as walk you through adapting the lens to your modern camera and your housing system. I will also give tips on how to shoot these lenses in terms of camera settings, lighting type, composition, and post-processing modifications.

The first lens that I acquired for this series is the Carl Zeiss Jena Pancolar 50mm f/1.8, a classic East German prime lens known for its excellent sharpness and pleasing

bokeh.

Carl Zeiss first opened an optics workshop in Jena in 1846. After World War II, Jena was incorporated into the Soviet occupation zone, or East Germany. The Pancolar lens was produced in East Germany.

There are two versions of the lens: 1) Zebra version, which is single-coated and recognized by its distinctive black and silver stripes, and 2) Electric version, which is multi-coated (marked as "MC") and all black with red, green or white markings.

The lens is structured in 6 elements of 4 groups. It has a 49mm filter mount and a minimum focus distance of 35 cm. This minimum focus distance is very close compared to many other 50mm prime lens (a short minimum focus distance is great for underwater use as you can get closer to your subject and get a larger magnification to fill the frame and avoid any backscatter).

The lens was produced in M42, EXA, and Praktica B mounts. While more expensive, the M42 mount versions are easier to adapt to modern DSLRs or mirrorless cameras. With an



The Carl Zeiss Jena Pancolar 50mm f/1.8 lens Zebra model copy next to my Fotodiox M42 to Nikon F mount adapter. Ringneck blenny coming into frame on top of an underwater pipe. Nikon D90 & Carl Zeiss Jena Pancolar 50mm f/1.8. Camera settings: f/1.8, ISO 100, 1/200.





Comber staring down at the camera after feeling its territory was being invaded. Nikon D90 & Carl Zeiss Jena Pancolar 50mm f/1.8. Camera settings: f/1.8, ISO 100, 1/200.



Seahorse looking sad as it camouflages hanging from a seagrass branch over the sand. Nikon D500 & Carl Zeiss Jena Pancolar 50mm f/1.8. Camera settings: f/1.8, ISO 50, 1/250.

M42 to your camera's mount adapter (in my case, M42 to Nikon F adapter), you can adapt the lens to your modern camera. It is important to mention that the Zebra version tends to have a yellow tint on the glass. This yellow tint can actually come in handy when photographing underwater as it brings out a more pleasing blue color for the water. However, this also means that to shoot with this lens, it is best to set manual white balance before shooting.

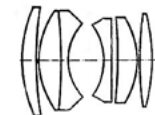
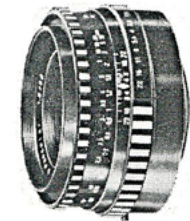
The main challenge of using the Pancolar underwater is adapting

the lens to your housing and port system. The lens measures 60 mm in length which is very similar to the Nikon 10.5mm fisheye lens when set at infinity focus distance or the Nikon 40mm micro lens when set at minimum focus distance.

However, the lens is not capable of focusing when put behind a 4" dome port. Therefore, the best port option is a flat port. For Nauticam users, you will need to use the Nauticam 60 macro port or the Nauticam 45 macro port for this lens.

In order to fit it better within the 60 macro port and to get higher magnification of your subject, I have found that using a 1.4x teleconverter comes in handy. With a Kenko Teleplus HD teleconverter, the lens fits the 60 macro port well and allows you to fill the frame with smaller subjects.

Since you are shooting at f/1.8, the loss of one stop of light due to the teleconverter is not significant.



ZEISS PANCOLAR 1.8/50
Six lenticular lens. Large aperture.

*Original Carl Zeiss Jena®
advertisement of the Pancolar lens.*



The lens mounted on my Nikon D500 with the M42 to Nikon F mount adapter and a Kenko Teleplus HD teleconverter.

The Nikon D500 with the lens inside my Nauticam NA-D500 housing with the 60 Macro Port and dual Inon Z240 strobes.



Felimare picta nudibranch crawling along a patch of sand. Nikon D90 & Carl Zeiss Jena Pancolar 50mm f/1.8. Camera settings: f/1.8, ISO 100, 1/200.

An important thing to consider is that once the lens is in the housing, you will not be able to modify the lens' aperture or focus distance. Thus, I recommend shooting with the lens wide open (at an aperture of f/1.8) and

set to the minimum focus distance (35 cm). While not at the aperture at which the lens is the sharpest in the corners, at f/1.8 and at the minimum focus distance the lens will render the most interesting bokeh and a great center sharpness for fascinating and

unique shots. Given that aperture is fixed at f/1.8, you need to play with ISO and shutter speed in order to achieve the correct exposure of your shot.

Generally, good jump-in settings are 1/125s and ISO 100, but these will



Yellow ringneck blenny popping out of a hole surrounded by colorful algae. Nikon D500 & Carl Zeiss Jena Pancolar 50mm f/1.8. Camera settings: f/1.8, ISO 100, 1/125.

depend on the depth, visibility and weather conditions of your dive site.

To nail the focus, the best way I have found to shoot with this lens in a housing is to shoot in continuous low mode and rock forward and backward while taking pictures. While rocking, make sure to check for the focus indicator shown in the viewfinder. Pro Tip: Take a lot of shots! Nailing the focus underwater while hovering and holding a heavy housing is hard and will require a bit of “spray and pray”.

I have found that the best set-up in terms of lighting is to use

dual strobes in low power (1/10th full power) on long strobe arms. At low power, the strobes are powerful enough to correctly expose your shot (due to the f/1.8 aperture) but also fast enough to fire several times in a row if you are shooting in continuous low mode. Additionally, long strobe arms allow you to move the strobes freely to achieve the lighting angles and the bokeh effects you want for your shot. However, at such a large aperture of the lens, most strobes tend to be too powerful (and end up overexposing all shots). If your strobes are too

powerful, an alternative is to use a powerful flood torch for your lighting. The additional benefit of using a torch instead of a strobe is being able to more easily identify when the subject is in focus due to the increased amount of light coming through the viewfinder. Moreover, you can instantaneously see through the viewfinder the effects of moving the light source to achieve certain lighting styles or bokeh effects. Finally, ambient light shooting is also possible due to the large aperture. However, I recommend staying relatively shallow (<5 meters) in order to take advantage of warmer colors and avoid getting “all-blue” shots of critters.

When it comes to sharpness, at f/1.8, the lens is very sharp at the center of the frame. However, the corners do appear smooth with many aberrations and some slight vignetting. Thus, I suggest keeping the composition simple with mostly bullseye-type shots of critters in front of colorful or open-water backgrounds.

Additionally, this lens does have some flaring issues, so avoid shooting directly into the sun or using direct backlighting. There is very little need for post-processing the images due to the high quality of the photos that come out of the camera using this lens. However, I do recommend bringing up the contrast of the image

a little and decrease the vignetting as most vintage lenses suffer from low contrast and vignetting. Personally, I also like to increase the texture and the sharpness of the image for tack-sharp shots.

Overall, this lens renders images comparable to those of modern lenses with the beautiful Zeiss colors, smooth bokeh and tack sharpness.

For a Carl Zeiss Jena Pancolar 50mm f/1.8 in excellent condition, you will have to pay 90 euro, which makes this lens also a bargain.

Despite the initial struggle of adapting a vintage lens to your underwater system and using manual focus, this lens delivers excellent results and gives a unique perspective of the underwater world. Consider giving a different look to your portfolio!

Arnau Argemi

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Have, Have not or Had

by Richard Yorke

Your recent editorial concerning the cost of equipment and how it splits us into the 'haves and have nots' drew my attention for several reasons.

Firstly it missed out 'hads'! This is the group of people who have had the expensive setup but either got trapped in the past due to the cost of keeping up with developments, or have lost their investment in an unfortunate flood and been unable to afford the replacement costs.

Although some, who only see me diving, might think I am in the first of these groups, stuck in the past, with a camera first available in 2008 13 years ago!! I feel I am more of a person that questions what I need, and what I require to provide it. My underwater camera satisfies those needs so I see no reason to replace it with a more modern one.

My photography started many years ago with a Brownie 127 and has gone through many generations of equipment each upgrade being made to obtain a new function or an increase in quality when I felt it was of use to me. I was often a little behind the cutting edge as I only traded up when I thought I would really use the improvements that

arrived with each new generation.

I came quite late to diving, but of course I just had to take a camera down with me. However the cost of the equipment was quite a shock and there was no way I could take the camera I was using at the time (a Konica Minolta A2) down as no housing was ever made for it. So I worked on the same basis of getting a camera that did only what I knew I would use, and the result was that I went in at the bargain basement end as in effect it was all so new to me that I had no real idea what 'extras' I would use, so I returned to that times equivalent of my original Brownie, with a Nikon E3100 in a CP3 Fantasea housing just to see if I was going to take to it, and if so, to discover what I felt I would actually use, before investing in more expensive gear.

When you look at the specs today you would laugh in just the same way that the Brownie now seems little more than a child's toy! Just 3.2 MP and no manual controls. However I took advantage of a visit to relations in Australia to have a PADI underwater photography course, more to give me time underwater to learn,



The Nikon Coolpix 3100 was produced in 2003.



The Fantasea housing allowed full control down to 40 metres.



Monocle Bream, Scolopsis bilineata, Coolpix 3100 1/115 f2.8 ISO 100. Available light



rather than continually being chivvied to keep up! However it proved well worth doing, and their attitude that the person behind the camera was more important than the camera was very refreshing and the result was that even with that very basic setup I got pictures I'm not ashamed of today!

I progressed with underwater photography from that very basic model to a better compact which gave me more pixels, RAW files and a single strobe. The result was probably not so much better pictures, but of being able to take pictures in a greater range of situations, for example at lower light levels.

When I finally felt the need to upgrade my A2 and move on to a DSLR on land, I chose an Olympus E520, chosen because in my film days I had used an Olympus OM1 for many years and wanted to get back to the sort of flexibility of interchangeable lenses that that had given to me.

While I was making the move I

realised that the different lenses would be useful underwater as well and as I discovered that Olympus had a housing for the camera that was more reasonably priced than the more usual metal ones that were sold for DSLR cameras I also moved underwater with that at the same time. The delay to make the move also meant that by that time, I had become a little more aware of my requirements for underwater photography and what sort of things I wanted to be able to do with my camera so I was able to make more informed choices over things such as ports and I ended up buying Athena mini dome ports for my standard lens but I liked the Olympus macro port and over time I have been very happy with those choices which gave me easier access to confined spaces.

At the same time I become hooked on UK diving, much of it with Seasearch (more of that later), so further improvements were made with better strobes and a focus light as light

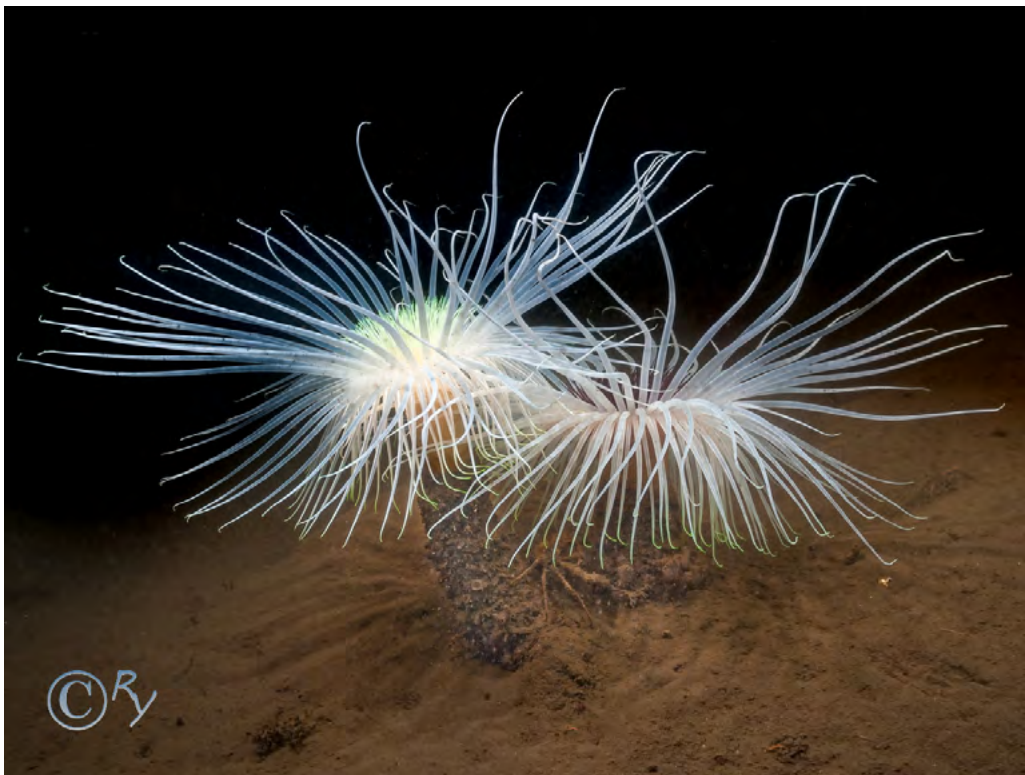
Spiny squat lobster, Galathea strigosa 1/80 f11 ISO 100 50mm Macro

levels were usually very low. It was a moderately big step but worth it.

However, although my progress on land continued and I more recently moved to a mirrorless camera, this move was due to my desire to have the benefit of improvements relevant to use on land where I really appreciate things such as pre-capture, image stabilised long lenses and many other improvements that increased my enjoyment when on land, but these were not things of use to me underwater.

I had also become aware that not only were housings very expensive, they only fitted one camera model. So having spent a large sum on the new equipment I was not tempted to spend several more on housings and ports to use the new system underwater, as I realised starting out on that path would prove very expensive every time I felt the need for an upgrade, yet of no real benefit to be underwater.

So my photography is now split into two distinct sections, above and below water. I carried on with my



Fireworks anemone, *Pachycerianthus multiplicatus* 1/60 f8 ISO 100 Olympus 14-54 f2.8-3.5 MkII

E520 underwater, a wise decision as it turns out for several reasons. I might otherwise have become one of the 'hads'! That is someone who HAD an 'all bells and whistles' underwater setup, but flooded it! It was my own fault that I flooded mine as I felt I had better things to do that become totally anal about daily maintenance, stripping, cleaning and re-greasing seals and so on, and one day I made a mistake.

However, because I had not

moved with the times underwater I had benefited from comparatively low second hand values. Not only had this allowed me to move up to Pro lenses (after modifying existing ports to take them), but I had bought a cheap spare body, so although I was in the wilds of Scotland when I forgot to seal the housing properly, I only missed that day's pictures. I was back in action the following day with the spare body, just taking wide angle shots rather than macro. On my return I was lucky



Mysid shrimp 1/80 f9 ISO 200 50mm Macro

enough to pick up a replacement spare body and a macro lens for just £150 (though even second hand that was still a bargain)

As a result of this policy I can relax when I dive without the dread of a flood happening, as although I think it unlikely to happen again given the number of dives I have done compared to problems, and I also having learnt a lesson and take a bit more care with final checks, I know I won't loose a fortune if I it does.

I also have the advantage of knowing my camera inside out through long use, so no trying to get a more complex model 'under control' while on the bottom with time constraints. It also leaves me free to update my 'land camera' without the problem of having to buy a new housing for every new body so I am no longer a 'had' in that respect either and I have already upgraded the OM-D E-M1 to the MkII which only required the change of the body.



Stalked jellyfish, Haliclystus stejnegeri 1/100 f9 ISO200 Olympus 14-54 f2.8-3.5 MkII

My pictures might not match those taken by some semi-professional and professional photographers, but that is probably due more to the person behind the camera than the camera. In any case, they are good enough to be included in several ID books and can produce prints big enough to put on my walls, and that is fine by me.

The ID potential takes me back to Seasearch; a very worthwhile organisation of citizen scientists

who can fill in survey forms to help produce a map of bottom types and life in our seas which has proved valuable in studying the effects of climate change and the sighting of areas for conservation. It has in turn given me a purpose to my diving and my underwater photography.

How many casual underwater photographers know what they take pictures for (or even of!). Like so many of the pictures we take these days they may get posted on social



Yarrell's blenny, Chirolophis ascanii 1/100 f13 ISO 200 Olympus 14-54 f2.8-3.5 MkII

media and maybe shown to friends, but could you even find them in a year or two! I have old black and white pictures taken by relatives back as far as about 1890 and hundreds of pictures since then but not so many more recently as they are probably on phones or disks that were thrown away or can no longer be read on modern computers.

Is it worth spending thousands of pounds on equipment to produce pictures that rarely see the light of

day, and the pictures they do take are not as good as they could (or should) be as the camera is too complicated and used too little to get the best out of it.

I don't think there is a need for a split into "haves and have nots" within photography above or below water. Everyone who dives should be able to afford to take pictures provided they first work out what they were going to do with the pictures and what equipment is needed to produce



John dory, Zeus faber 1/80 f9 ISO 100 Olympus 14-54 f2.8-3.5 MkII

the pictures of the standard required for that purpose.

It is probably something much simpler than they imagine, and not necessarily new! Don't forget the second hand market, though look for your housing first as there are fewer of those for sale and it is easier to buy a camera to fit a housing than vice versa!

Start from the basis of what will be done with the pictures. A post on facebook does not need massive numbers of pixels, nor does a picture

sufficiently detailed to make an identification of what you saw when you get back on land with your ID books, and there is no doubt that the value of Seasearch records has increased greatly with the advent of simple photography to enable accurate identification.

Having this purpose to your dive also greatly increases the satisfaction you get from it. It certainly has for me, and it can be done, probably better, on a much smaller budget than you might think.



Astacilla longicornis on a Tall sea pen, Funiculina quadrangularis 1/80 f5.6 ISO 100 Olympus 14-54 f2.8-3.5 MkII



Seasearch is a national project for volunteer divers who have an interest in what they are seeing under water, who want to learn more and who want to help protect the marine environment. The aim of Seasearch is to record marine habitats and species found around our coast, and to use the information to identify sites of specific conservation concern. The data collected helps us with our conservation work and raises public awareness of the value of our marine environment. Once you are qualified as a Seasearch Observer any dive can be a Seasearch dive, you just fill in a simple form and send it in to us!

Many Seasearchers are keen underwater photographers and seasearch is a fantastic way to improve your marine species identification and knowledge while making new friends and having fun!

www.seasearch.org.uk

Richard Yorke
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