

An interview with Edward Lai

by Peter Rowlands

Edward, thanks for taking time out at this busy DEMA show to let me interview you on this the 7th DEMA since you first exhibited.

At that show in 2008 you had a single product on display - a manual white balance port for various housings. What was the response at the show and did you envisage or have plans on how far you and your Company would come in just 6 years?

Amazingly the response was better than we anticipated. We met many knowledgeable people from the industry who were willing to share their insights. We were excited to be interviewed by Eric Cheng and got reported on Wetpixel - quite encouraged as a newcomer. In those 4 days we were able to receive valuable opinion and suggestions.

To be honest, by that time we didn't have a concrete plan of our future yet. I gained a lot of information and inspiration being able to communicate with so many people in one place. On the way travelling back to Hong Kong I felt I already had some nice ideas. At the next DEMA we were able to showcase our D90, D300, D700 housings, a totally

redesigned and workable version of the white balance port, and an 180 degrees viewfinder.

Timing couldn't have been worse when we started Nauticam. 2008/2009 were perhaps the worst years in history being hit severely by the Financial Tsunami. We had to close down another mold making business unit to stop losing money, and consolidated the factory for sole development of Nauticam products. We frankly didn't know how far we could go other than working hard to remain surviving. We exhausted all means of financial resources while developing new products and patiently waited for the brand to mature.

Looking back, it was perhaps this pressure that kept us alert and concentrated at all times and saved us from making terrible mistakes along our growth path. Jacqueline told many people that she had never seen her father worked so hard and under such stress.

I am assuming that you were already a keen underwater photographer and presumably like all entrepreneurs you looked at existing products and thought you could improve them?



Founder of Nauticam, Edward Lai, at DEMA 2014

Nauticam's first product in 2008 - the innovative manual white balance port which went on to win the coveted reddot design award in 2012





I was actually not that keen on diving before Nauticam was founded. I only went for 1 or 2 diving trips per year, and started photography with an Olympus 4040 in 2002 taking quite normal quality pictures with a torch. After seeing some very nice pictures of my dive buddy using a film SLR, I decided to be more serious and bought a Nikon D2X camera and housing in 2005, and was very frustrated by the problems I encountered for the money I spent. First of all, not all controls of the housing worked, and it was such a pain to install the camera, lens and gears into the housing having to align all these simultaneously. And secondly, to my surprise, TTL was not available for underwater photography even for such an advanced camera.

As a mechanic, I had been constantly changing things and improving here and there in my system. I bought two Nikon SB-800 flashes and made them work in TTL mode underwater. Later on I changed to Nikon D300 and bought a housing with optical bulkheads, and used two Nikon SB-200 flashes via commander mode from the camera. And then I changed to Inon Z-240 utilizing the S-TTL function



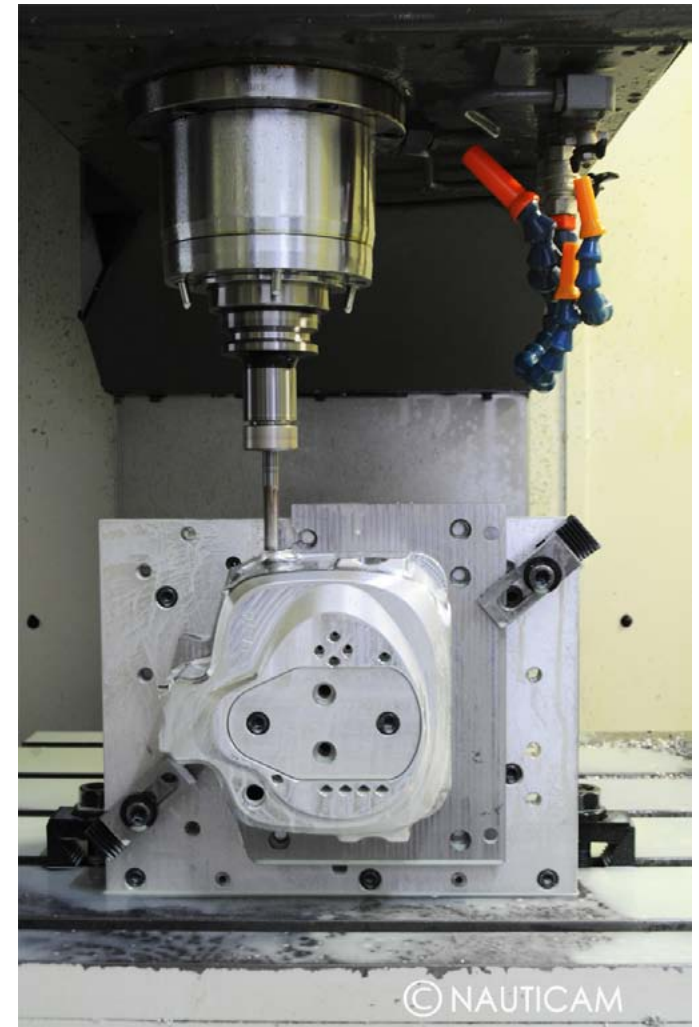
of the strobes. My buddy always commented I was just 'playing' with my set up rather than concentrating on real photography.

I slowly picked up more interest in u/w photography seeing small improvements that I achieved through my own modifications. Taking pictures became easier to me with TTL and gradually I got pictures that I was not ashamed to show, and all of a sudden I found joy in diving.

I had personally purchased equipment from 4-5 different manufacturers hopefully to find one that was built to my taste and expectation. Obviously this was very subjective and at times I thought I might have to build something myself in order to get what I wanted.

Prior to Nauticam what was your primary line of business and skill set?

Between 1991 and 2005 I was involved in high precision mold making utilizing the most advanced cad-cam software and computerized machinery. We built molds for many multi-national mobile phone,



health care and electronic product manufacturers. An interesting aspect of being in this business is that we got to see many new products before they were launched, and chances to interact with product designers.

In 2000 we helped Nokia refine the design of the 5210 submersible phone and was awarded the order to build all the molds they needed for this product. Our team of 5 technicians stationed



2 weeks in Finland to ensure a smooth start up there. Some other significant projects included a rugged splash proof casing for Compaq ipaq, and rubberized shaver parts for Gillette. Interestingly all these involved waterproofing functions.

At what point did you decide to ‘go for it’ and how did you come up with such a great business name in an already saturated market?

Around 10 years ago a Finnish company who was then the biggest worldwide mobile phone plastic parts manufacturer offered to acquire my mold shop at a very attractive price. Prior to mold making I ran a custom molding business and its similarity to mold making was that they both built things to our customers’ product design. With these financial recourses we could finally chose to build something we design, enjoy to build, and with our own brand name.

These days it is so difficult to own a “.com” company. In the previous businesses we failed a few times registering our own .com domain name with our company name. Having these experiences



I did it the other way around. We spent some time on internet to try to find a ready registered company with a .com domain name, and bought it.

In the early days I imagine you were doing a lot of the work yourself but that as the demand for your products increased you had to employ staff to step up production. Was it easy to find suitably qualified employees to work with such specialised products?

I must say that I have been very fortunate having changed to building underwater photographic products. Shortly after we departed from mold making business the mobile phone industry underwent a major revolution in functionality and form. From not-so-long ago it changed from a phone with plastic casing and a lot of buttons to a mini computer in a metal frame with no button. Hence an extreme substantial drop in the use of plastic parts. The Finnish company who acquired us couldn’t survive this impact and had to be sold to a Taiwanese company which was much smaller.

We were able to get back a small team of

experienced mold designers from this change, and slowly trained them for designing our new range of products. They became an important seed team into which we could gradually add new members. It is important that we share our experience of diving and underwater photo taking with them so that they know what our customers are expecting from our products.

Your choice of housing materials has followed the traditional route of machining solid blocks of aluminium with plastic and stainless steel controls. Did you consider alternative materials such as composites or polycarbonates? Also do you see 3d printing becoming the future?

We did research other alternative materials, but so far none of these can be put into mass production in a way as economical and efficient as machining from solid blocks of aluminum. Certainly we will keep researching in this area.

On the other hand, we can see that 3D printing can be used for producing certain small parts such as a zoom gear or an internal part. But mechanical strength and dimension stability has yet to be improved until it can be applied to waterproof and constructional parts. We will keep watching the development in this field.

What criteria makes you decide to make a housing for a new camera? Presumably the Nikon and Canon SLRs are priority but do you ever get so impressed with a camera that you want your own housing for it or is it always a business based decision?

I do consider to be successful in this business you need to love photography, and the technologies



Large format Phase One 645 housing

around it. I can readily name several projects that we spent time and resources working on them regardless of the rather small user base. For example we have two housings built for the medium format cameras, quite likely a third one. I believe there is a significance for a larger format camera to be remain in the market because of their stunning file quality. We also have a housing for the Fujifilm X-T1. Again, I have great respect for Fuji and their sensor is so superior in design philosophy.

I think it's fair to say that you embraced the potential of the 4/3rds market well before most other independent manufacturers. What was it about this format that so impressed you?

Almost as a hobby I read a lot about camera/lens rumors/announcements/forums/reviews/reports. There was a lot of discussion about 4/3 sensor quality in the early days of the format, and people were waiting to see if the sensor technology would advance to a certain point of time that the



Olympus EM10 4/3rds housing

file quality from this smaller format could become acceptable. I remember in 2012 I visited the CP+ show in Tokyo and Olympus showed several very large prints from then the new OM-D EM-5 that answered this query. They were so good that you could easily believe the prints were produced by full frame cameras. Since then I very firmly believe that the m4/3 format will become an important sector of the camera industry. The much smaller sized yet optically uncompromised lenses for this format are another key success factor for the format as the ports can also be smaller and travel friendly.

Ergonomics are a strong feature on your housings. What are your thoughts and main priorities for good ergonomics?

When we are driving a car we never have to look for the shift stick, the clutch, the brake and gas pedals etc. I want to design housings that people can use them without having to find or think about the controls. They should be right there when you



need it, at the right places, within easy reach, and provide you with the tactile feel that resembles the most well built German cameras.

We want to build the culture within our company that the team thinks of good ergonomics as a must for our products, and keep identifying areas for further improvement.

Following on from that do you personally field test each prototype housing?

I still try as much as I can to field test every new housing and major products. I actually enjoy doing that a lot. But for the last year I have spent a lot of time in optical design and have had to skip a few. Luckily Jacqueline, Phoebe and Thomas can do some tests for me, and sometimes our distributor in USA and UK also help in testing new products.

Last year saw the very successful launch of your SMC close up lenses. Without giving away any secrets do you have plans to increase your optics range?

Optics is a very essential part of photography



Nauticam SMC close up lens

and I believe there is still a lot to be developed for underwater solutions. For almost two years I have been rather obsessed with the historical development of optics in order to understand what it takes to design good lenses. It is like a black art even though today we have the help of modern computerized optimization software. It still takes a lot of knowledge of the designer to decide whether to add a lens, or replace it, or remove it, or combine two lenses to a doublet etc. An acceptable end product is always a fine compromise of cost, size, weight, manufacturability and optical performance.

I do hope that our optics range will one day become a significant business sector of the company.



Nauticam's latest flagship housing - the NA-7DMK11 for the Canon EOS 7DMk11

You have been consistently ahead of the competition when it comes to getting your product to the market so soon. Would you be willing to shed some light on how you achieve this?

Back in the days when we were in the mold making business our multi-national customers had such ever unfulfillable demands that we should build highly-complex multi-cavity fully hardened molds in unbelievably short lead times. As such, we have developed a team with

the flexibility and efficiency to cater for multi-part products with short product life cycles. We are very fortunate that these manufacturing processes proved to be easily adaptable for housing manufacturing.

Finally do you have a vision of where the underwater photographic market will be in 5 years from now and what part do you hope that Nauticam will be playing?

Judging from the rapid changes

we saw in the last 5 years it is so difficult to predict the next 5. The rather young and immature digital camera industry is carrying out all kinds of experimental design concepts in order to find out which format/size/form factor/viewfinder will eventually attract the most customers, and so is Nauticam. I hope we can produce the right equipment to work well with whatever the future cameras are going to be. They should be so well made that customers can easily take good pictures/videos without hassle.

The upcoming popularity of 4K/5K TV/monitor may gradually push the boundary of quality pictures/videos. With these new high resolution displays probably even just showing a picture on the internet demands higher quality. And with the fast growing bandwidth it isn't a dream anymore that one day we will be streaming high quality 4K video at home. I think the market needs better underwater optical solutions, and hopefully Nauticam can fulfill part of this.

Thank you, Edward, for such detailed and inciteful responses.

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