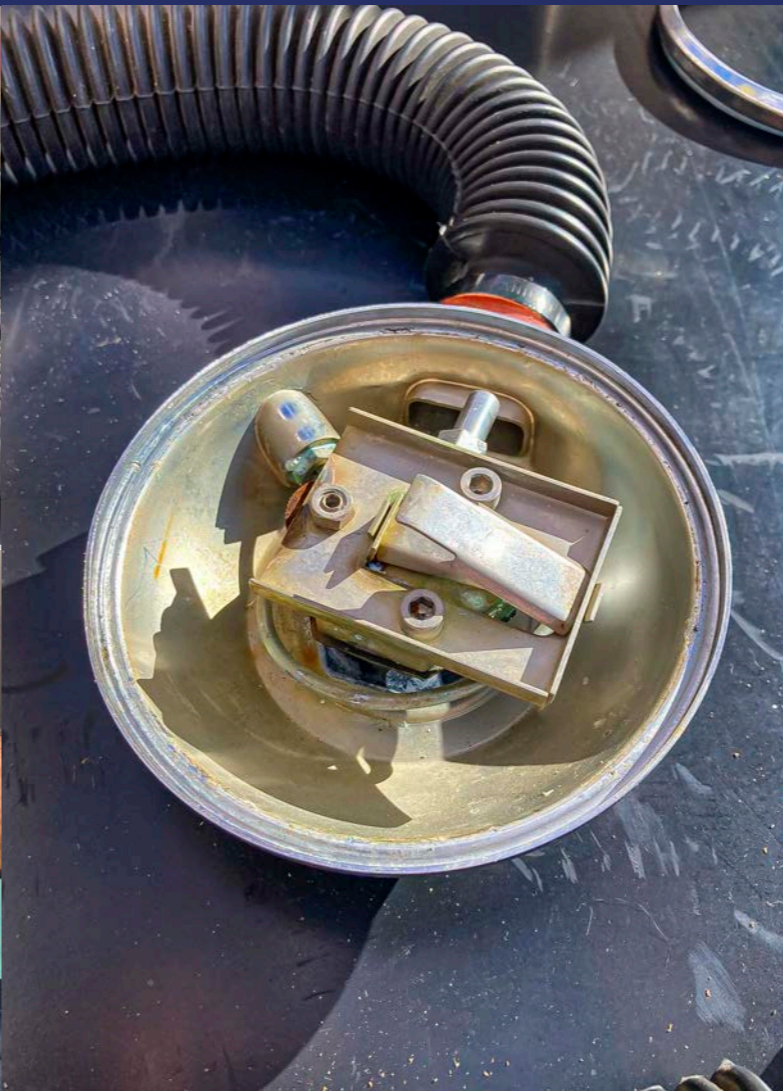




ZEN AND THE ART OF MISTRAL MAINTENANCE

FEATURE AND PHOTOGRAPHY **PATRICK VAN HOESERLANDE**

If we approach technology as something alien that can only be controlled by following instructions, then it is something intimidating and lifeless. However, if we look at technology as the result of human invention, we can more easily follow our intuition. We are better understanding how it works and feel connected to what we use.



“Serendipity”, the occurrence and development of events by chance in a happy or beneficial way, is an English word that is difficult to translate, but whose meaning is easy to grasp. In 1943, people dived for the first time with a regulator that would conquer the world. To celebrate the 75th anniversary, I wrote three articles on sport diving in 2018. The last article in the series was about a dive with this type of regulator. I searched for months for a Mistral that I could dive with, but to my surprise, the proud owners I first found thought that their Mistral deserved to stay in its display case intended as its final resting place. Dive with it? No, rather not!

It is probably a textbook example of misplaced anthropomorphism, but I find it sad when old technology is put on display and is therefore no longer allowed to fulfil its original function. An old, working breathing apparatus belongs in the water and should not be shining in a protected environment behind glass. The result of human invention feels more at home in the demanding environment it was designed for. However, this emotionality did not bring me any closer to a dive. It was only at the last moment and after I had given up, that I lay my hands on a probable working model.

Of course, I was not going to jump into water without someone’s knowledgeable assurance that it was in full working order. With a bit

of convincing, I managed to persuade Ronny Desmet of Scuba Service to disassemble the borrowed Mistral and give it a thorough check. Although he had no experience with single stage regulators, he was my best choice and at that time the only one I trusted for the job. You can read the resulting dive experience in the June 2019 issue of *Divers for the Environment*.

My suit was barely dry from that vintage dive when my cousin pushed a plastic bag into my hands and said, “it’s just gathering dust in my closet”. In it, was an incomplete Mistral. “Serendipity”: the moment you stop looking, an opportunity presents itself. The article may have been written, but I was still receptive to finding a perfectly working model. The dive had not been ideal and certainly did not characterise the qualities of these solid, first regulators. The Mistral deserved a second, honest chance. Was this regulator the key to that perfect dive?

Hardware is only one element. Who had the expertise and the parts to turn a closet dweller into a diving one? Here too, a happy coincidence lent me a hand. Tim Vertongen responded to my question on social media by saying that he wanted to help me. However, it took years before “my” single-stage machine and I stood at his door and rang the bell.

THE BEGINNING

The house I was standing in front of shows the approach of ‘do-it-yourself-ers’. It is a project with vision that matches the available budget. The owners are confident in their abilities and know what they want. When Tim opened the door, he looked much younger from the mental image I had of him. My world view that someone with an interest in old technology must be an old person does not always match reality.

After a brief introduction, we made our way to the veranda where the morning sun provided a cosy warmth. The operating table had been carefully prepared with a black rubber mat for the patient, along with a stainless steel ultrasonic bath for thorough cleaning and, of course, the necessary tools. The tools covered a range from precision instruments that would not look out of place in a watchmaker’s shop, to a heavy spanner that had to be lifted with both hands. Next to the table was a box of spare parts that could probably assemble five regulators. I had clearly arrived at a passionate maintenance technician’s home.

I placed my imperfect adopted child with care onto the dissecting table. After a visual check, Tim identified it as a ‘Royal Mistral’. In 1962, the company ‘La Spirotechnique’ introduced this improved version of the Mistral. It is a single-stage regulator with greater ease of

use and some versions – such as the one we had in front of us – was equipped with a high-pressure port for the connection of a manometer. I had my doubts. For some reason, it seemed that connecting a pressure gauge to a relic diminished the romance.

However, that extra connection option opened up a dialogue about using a Fenzy. This orange “toilet seat” and predecessor of the current “jacket” is no more than a ring that you can fill with air and through which you have to stick your head. The official name is an Adjustable Buoyancy Life Jacket (ABLJ), but it is better known under the name of the inventor Maurice Fenzy who introduced it in 1961. The first versions required the diver to blow air in it, but later models used a dedicated small air cylinder or a single-use ampoule of CO₂. It was only when medium pressure became available and two-stage breathing valves took over the market that the Fenzy was no longer used as a mere life jacket, but also as a buoyancy control device.

The connecting piece between the tank and the regulator was missing. Tim had already found a solution for this issue. In preparation to our meeting, he had modified a modern A-clamp so that it would fit the Mistral. This saved me from having to look for an older model of a scuba tank fitted with a smaller

valve to dive with my Royal Mistral. With this modification, I could use my modern tank.

A striking oddity was the lack of one-way valves in the mouthpiece. He explained that these valves were removed from the regulators to be used for pool training. This made training with single-stage regulators more difficult. The underlying philosophy was that difficult training increased safety during open water dives. Because diving with valves is more pleasant, he had a set ready. Although they came from a modern diving helmet – Tim works as a part-time technician at ‘De Zeeman PRO’, a shop for professional diving equipment – they fit perfectly on the 50 year old, original mouthpiece. It was amazing how the old and new spontaneously fit together.

DISMANTLING

While he was disassembling the regulator, we started a conversation about the origins of his passion for old and ancient diving technology. Like many divers, old and young, Tim admired the underwater films of Jean-Jacques Cousteau. After watching these films, it did not take him long to look for a diving school. While I used single-stage regulators during pool training, years later Tim was standing at the edge of the pool looking at the modern descendants in amazement. Where is the second hose? They had to explain to him that people no longer

dived with double hose regulators. They were no longer readily available. The disappointment of not being able to dive like his hero did not stop him from searching for the origins of sport diving.

We took a look at my specimen, which had been partially dismantled. The parts were in good condition. The years in a closet did not do the regulator any harm. Is retiring old technology not such a bad thing after all? The two hoses showed hardly any signs of wear and were still flexible. Only the regulator showed traces of rust. Without consulting a manual, Tim removed the only two O-rings in this piece of technology. Yes, only two! He had to fish for a minuscule seal through a small hole. I wondered how he was going to get it back in there. One by one the parts disappeared into the bath. The boiling water from the kettle filled both the bath and my mug with instant coffee. Maintenance and comfort flow from the same jug.

I admired the dancing patterns on the surface of the ultrasonic bath, and my thoughts wandered to the simplicity of the Royal Mistral. This is a stroke of genius. Every part had been thought out and strictly necessary. Nothing is superfluous. Tim told me about the existence of a two-stage regulator, brought out years before the Mistral. The ‘Scaphandre



Cousteau-Gagnan' or simply the 'CG45', was patented in 1945. Breathing air was reduced to two stages from the high pressure in the tank, to the ambient pressure. A process that required a fairly complex mechanism. Both stages were located in the same housing. So the first commercial regulator was a two-stage! Without a balanced first stage, this version offered no particular advantage and so the designer and supporter of simplicity, Émile Gagnan, decided to scrap this prototype back to just one stage. The Mistral was born.

The rust stain did not appear to be oxidised metal. In fact it could not have been, but you never know of course. Dried up grease? It came off and that was the most important thing. Normally, the air hoses also need to be cleaned, but not in this instance. Fortunately, Tim had a spare pair and so we swapped dirty against clean. This allowed us to shorten the maintenance time.

It's not only movies that motivate people to dive, it's also books. 'Le Monde du Silence' made a lot of people yearn to explore the underwater world. We agreed that Cousteau and his companions were true pioneers. Some of their experiences would be a perilous adventure even with today's modern and reliable equipment. Of course back then, they

knew less about the dangers of the deep. The first sport divers in Belgium can also be called pioneers of diving. Sport diving was synonymous with technical and minimalist diving. Dry suits? Jackets? Nope, there were only a few single-stage regulators mounted onto dive tanks with a reserve handle for the whole club. The adventurous members took turns diving with a "full" set from the diving club. Such a set cost more than a month's salary. If you were unlucky, the tank was empty before it was your turn. Better luck next time?

Over the years, Tim's collection of shiny scuba gear has grown. Once people know you collect something, a kind of attraction process starts. If they don't know what to do with a single-stage regulator, they give it to Tim. He collects these things and that is better than throwing them away. And like so many collectors, his hobby got out of control.

TECHNOLOGY PHILOSOPHY

Before the reassembly, the regulator needed to be calibrated. Tim performed an initial adjustment with a homemade jig. He adjusted the breathing resistance with the help of two screws and an adjustment nut. In order to avoid bending the plate on which the lever rests, it is necessary to work iteratively. Every adjustment of the adjusting nut needed to be

accompanied by the prior loosening of the two fastening screws.

The scene I witnessed reminded me of the passages in Robert Pirsig's book 'Zen and the Art of Motorcycle Maintenance', in which the main character maintains his motorbike with great love and conviction during his road trip. The author claims that if we approach technology as something alien that can only be controlled by following instructions, then it is something intimidating and lifeless. However, if we look at technology as the result of human invention, we can more easily follow our intuition. We are better understanding how it works and feel connected to what we use.

You don't have to read the bulky book to get that insight. You acquire it when you see your life's essential regulator maintained by a passionate technician, and when you "experiment" with your configurations and material within the limits of safety. The material you use then becomes part of you, as it were, and not something you take with you to dive.

After a few hours of philosophy, I stepped outside with a polished and fully functioning Mistral Royal. There was only one thing left to do: to dive with it. I no longer had to search for an original Mistral...