

FREE THE DIVER

FEATURE **PATRICK VAN HOESERLANDE**



Photos on pages 35-37 by Eddy Torfs

0m: After a few minutes of belly breathing to calm down, I swim serenely to the orange buoy. There, my breathing evolves to a slow belly-chest-shoulder sequence whilst I visualise my dive. I run through all the phases of the dive in my mind. Then, one more before my final deep breath. A pause, preventive equilibrating my ears, and the final, deep, full breath. In one smooth movement, I cross my right arm over my left shoulder to slip effortlessly underwater. A keyhole stroke with my arms gives me a quick but efficient initial velocity.

3m: I anticipate the pressure buildup in my ears by clearing them for a second time while I pay attention to my fin movement to make sure that they are slow and well executed.

10m: Time to equalise my mask with the bit of air in my chubby cheeks. I benefit from that small pocket of air to execute a Valsalva manoeuvre. I know that due to the rapid buildup of pressure, this is the last time I will be able to do this. I realise that my heart is beating slower.

13m: Because I have neutral buoyancy at 6m, gravity now takes over. I am in the free fall zone. No more leg movements. I save energy by letting myself go. Nice.

18m: I feel the differential pressure in my ears increasing. I have not yet mastered the Frenzel manoeuvre, but I manage to equalise my ears. I clearly need more work to perfect this technique if I want to go deeper.

20m: I've reached the tennis ball and know that I have reached the agreed depth. Time to flip around and begin the ascent. With my right hand, I take the rope. I glance at my depth gauge, it indicates just short of 20m. While I turn, I stay a few moments at depth and it seems like time has stopped. I feel more aware of my body. The pressure on it is palpable. I slowly pull twice on the rope indicating to my safety diver that I am starting my return. It also gives me a small initial rate of ascent.

12m: The diminishing pressure makes me feel as if I'm blowing up. I know there is no danger, because I started with air at atmospheric pressure. I hold my breath. No bubbles!

10m: As I look ahead of me, I do not see my safety diver. I feel and know that she is there. I can fully concentrate myself on the last phase of my dive. She will take care of the rest.

8m: The first bubbles escape from under my mask. I should recuperate this excess air, but I need more practice to do it safely.

5m: The rapidly decreasing partial oxygen pressure kicks in, but I thoroughly enjoy the last part. The best phase of the dive starts at this depth, the 'glide'. I stop swimming to feel the invisible hand carefully pushing me up. Great, but far too short. Time to think about my recovery breathing.

0m: I break through to the surface. The moment I do, I start with the recovery breathing. After five cycles, I tell my safety diver 'I am OK'. She'll watch over me for a while because a syncope remains possible minutes after the dive.

WHY FREE DIVE?

A few months before this dive, I was proud of my personal record of 2 mins 15 secs underwater and on plunging to a depth of 6m to admire a sea turtle while on holiday. The plus 2 mins had come at the investment of some weeks of pool training. When I interviewed Belgian Apnea Athlete, Patrick Musimu back in 2008, he claimed that in one day he could teach every SCUBA diver to freedive to 30m. I had put that chunk of information away under the label 'enthusiastic exaggeration'. A few months ago, during an introductory evening to freediving, the depth of 18m was raised as the target to get certified. Even for that number I kept an appropriate level of scepticism.

Although I'm not willing to give up my addiction to the bottle, I decide to commence

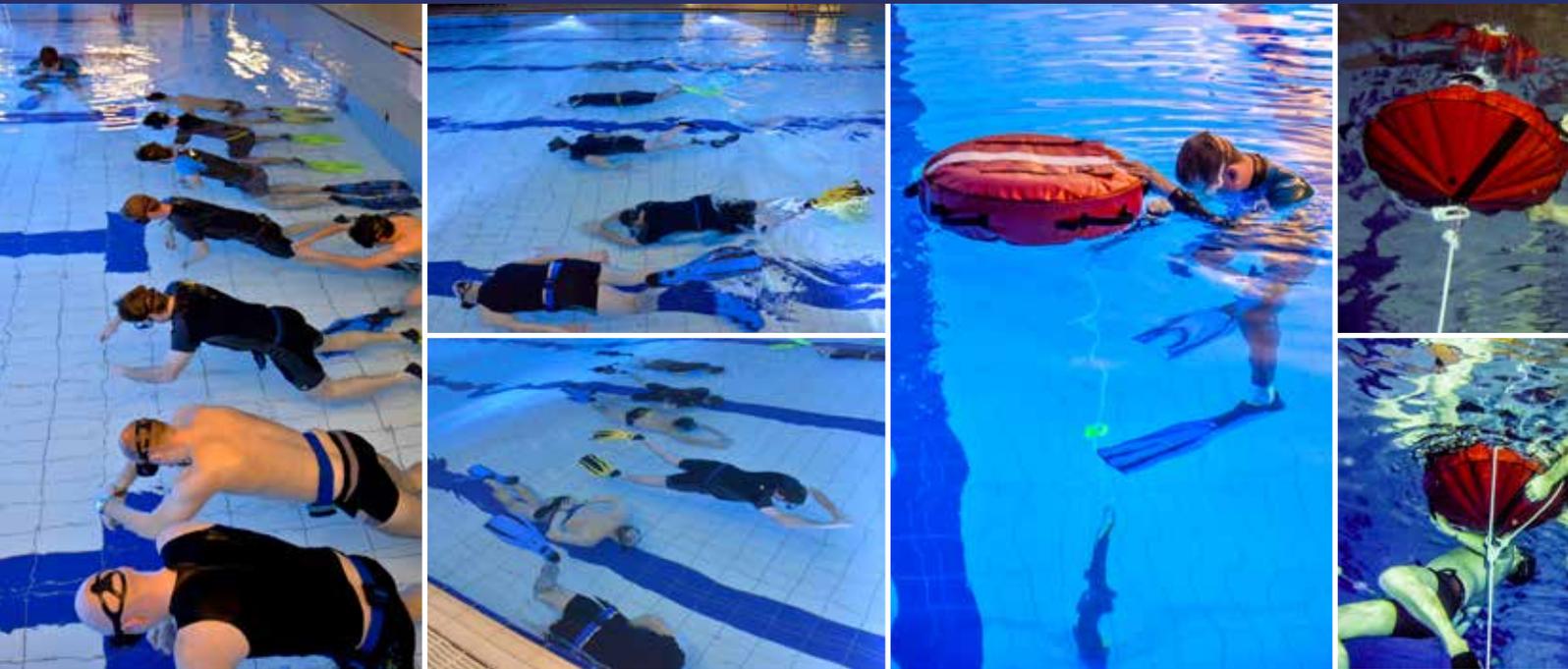
the course 'Adventure Freediver' organised by the diving school, Lagoondivers. I stepped in with an open mind, because if I want to triple my record depth, I must be ready for a different approach. Surprisingly the course is very practical. Almost all the theory is given at the side of the pool, not in a class room.

The course material reads easily and lends itself to self-study. As a diver, you will have already seen most of the theory, even if you think some of the topics are taught differently. Indeed, freediving sometimes differs from SCUBA diving, with good reason.

Pool training. 7 DIY lessons on the how and why. 7 sessions in which you push your limits. On the first day, we stood with six other candidates along the border of the pool. Some of us see this course as a preparation for the physical tests of assistant-instructor within a few weeks because getting used to holding your breath for a long time is a big advantage for these tests. In hindsight, I'm not sure if this is a good approach. Attending a freediving course before you start preparing yourself for the assistant-instructor exam, might be a better strategy.

TRAINING

Our instructor decides to deviate from the standard training schedule to take into account the dimensions of the pool and the experience of his students. We start with physical training and a few sessions of snorkeling. After these exercises, we must try to relax. This is harder than it seems. Once calmed down, he explains the basics of freediving and gives us some time to experiment. I directly stumble on the first difference in technique compared to diving with an air tank: the execution of the duck dive. With freediving you don't have a forward speed and raising your legs is considered too energy-consuming. A duck dive serves to slip efficiently underwater from a still position. Or, you start one while lying on your back holding the buoy. You make a turn-over motion and



disappear underwater. We are advised to clear our ears before and immediately after the start. Indeed, when the duck dive is well executed, you are very quick into the deep and you may be too late to preventively equalise your ears.

The first lesson was over in a flash and that was the same for all the other sessions. The next step was to learn to control our breathing. An apnea dive starts several minutes before the duck dive. There is no hyperventilation allowed as it is counterproductive and, by its effect in delaying the ventilation impulse, it is very dangerous. You must start with good belly breathing. Slowly inhale and exhale twice as slow. The intention is to get well ventilated and to let out all the stress. I cannot really achieve the latter. I have the impression that concentrating on my breathing results in more stress. But with the motto, 'practice makes perfect' I tried to prepare myself as well as possible. Later I discover that when I focused on a visual mark, I would start to calm down.

In preparing the last minute for the dive, you move over to a belly-chest-shoulder breathing technique, performing the three types of breathing one after the other. All three are done simultaneously in one slow, smooth movement. Just before the plunge, you ventilate deeply three times. And then you dive.

After the dive, you start the recovery breathing by exhaling and inhaling shallow and quick. After each inhalation you stop and take care of the extra pressure on your chest so that the oxygen is rapidly absorbed. You do this 5 times. Then pull your mask off, show the OK sign and tell your buddy "I'm OK". This procedure differs from the one you learn during your compressed air course, but this deviation in technique does make a big difference in results.

The strict rule that you always blow air while ascending is replaced with, 'you surface with all

the air you started your dive with'. No blowing out. Also, you do not pay attention to other divers. As a freediver, you have priority over everything. Even obstacles! You have the right on a 100% focus on your dive. In reality, proper planning and your safety diver ensures that you don't bump into somebody or something.

During the pool training it strikes me that the ambiance is very serene. I do not look at what the others are doing and try to focus on relaxation and recuperation. I suppose the others do the same. There is barely any talking. Breath-hold diving is clearly something between you and the water. It's every diver for him/herself. Most close their eyes and try to concentrate on what is and will come. The instructor rhetorically asks, "What makes you nervous?".

It is almost unbelievable what can be achieved with this kind of preparation. At the start of most exercises, I think this one is nearly impossible. When the next exercise, a series at 25m starting with a static apnea of 10 seconds, increasing to 60 seconds is announced, I think I cannot complete this one. I bite through the first leg, and on hitting the 30 seconds, things suddenly get better. Nevertheless, the final exercise, a 15 seconds recuperation followed by a 50m dynamic, is a bit too much. Or I did I give up before reaching my real limit?

And that was just lesson 2. Along the pool, Kevin shows the specialised equipment for freediving. For the current course, 'Adventure Diving' we do not need to buy supplementary equipment. Our regular diving items are sufficient: pool fins, with or without neoprene socks, wetsuit, weight belt and mask. If you want to evolve further in this discipline, you should first consider buying longer fins. Later an open cell neoprene wetsuit, an elastic weight belt or marseillaise, a special mask and possibly a nose clip may find a place on your wish list. A lanyard or lifeline and certainly a buoy are considered

collective materials and thus do not need to find a home in your dive bag.

Although apnea diving is something between you and the water, you never dive alone. You always have a buddy, or better, a safety diver. This buddy follows you and intervenes if something goes wrong. And that can happen, because you try to push your limits and while doing that sometimes things do not always go as planned. Therefore, the pre-dive briefing is extremely important so that your buddy knows exactly what to expect and when and how to intervene. The task of the safety diver is a little easier during static apneas because you can concentrate better on the diver, while during dynamic disciplines, you have to move too. During deep dives you must also dive in apnea. Although you do not have to follow the diver the whole way down, accompanying the athlete halfway is enough because the last few metres are the most critical ones.

The rescue posture is very different from what we're used to. The hand goes over the mouth of the victim and you bend the head forward. These actions ensure that the victim does not lose any air; while in SCUBA diving you want to keep the airways open to let the excess pressure out. In some strange way you push the victim with the head upwards. You do not have to lock the body under the armpit, clamping the chest between the arms suffice because a freediver is positively buoyant in shallow water. As an instructor with the 'head backwards' technique drilled in, every time I play the victim I throw my head back the moment I feel it being moved forward. Well, habits die hard.

We learn to start with a duck dive from a buoy. This device, similar to a tyre dressed in a dive flag, allows you to focus on your breathing while floating in open water. It is also a distinct starting point of the descent line where you can hook your lanyard on. It is therefore important that



you learn how to slip underwater smoothly while remaining next to the line. This line is also your focus during the dive and the return to the surface, because it allows you to look straight ahead while observing your speed. We are taught the official techniques, but are allowed to experiment with alternative methods. The latter may not be used in official dives or championships, but may be more fun to do.

The next sessions serve to enhance our dynamic apnea. The swimming style should be as optimal as possible. It is a personal search for balance between speed and energy efficiency. The stroke is slightly larger than we are used to, and slower. Also, you never look forward, always down. The lines with two T-stops for swimmers also have their uses for freedivers. And, as it is the case with swimmers, the turning points play an important role in the final result of the performance. A poorly executed turn requires a lot of energy and reduces your potential maximum distance. The art consists of a calm, certainly not explosive, push off and a good use of the driving phase before you start swimming again.

Equalisation is very, very important for a freediver. With a good start, you go down quickly. A 'touch and go' dive profile, rarely performed as a SCUBA diver, is executed more than 20 times in one open water session by an apnea diver. Moreover, due to the ever-shrinking volume of the lungs, the Valsalva manoeuvre is no longer possible from a depth of 15 metres. So, you need to master other techniques such as the Frenzel if you want to reach greater depths without earache. It's not a difficult technique, and you should not overthink it, but you must master it to perfection. As with almost everything in freediving, being in a state of focused relaxation is key.

The last training is to improve our static apnea. Because the purpose is to this time

determine our maximum time, we devote special attention on safety and preparation. In short, this means that your buddy intervenes on the first bubble that escapes, when you show signs of a samba (uncontrolled muscle movements), or when you do not respond to the agreed time signal. Before we explore our limits, we warm up with a series of 1 minute 30 second static apneas with decreasing breathing intervals starting from 1 minute 30 to 15 seconds. Again, I think this is an almost impossible exercise and I am surprised that we all succeed. It seems the best preparation for a long stay underwater is to stay underwater. And of course, to relax.

We finished with an attempt to set a personal record. 2 minutes 40 seconds after the countdown, I decide to resurface because I began to have doubts about my safety. Would my buddy be able to react when I overstep the line? Would he be on time? Unjustified concerns that have cost me many seconds because the moment I stopped my apnea, I noticed that both my buddy, the lifeguard as well as the instructor, are standing around me. Well, it's good to know that one third of the oxygen is consumed between the ears.

With a theoretical and practical exam, we conclude the course with 30 multiple choice questions. A good overview on what you as an apneist needs to know at the start of this new hobby. Nothing that cannot be answered after reading the course material, using common sense with the readily available knowledge of every diver. The practice is not heavy: 2 minutes stationary and a 40m dynamic apnea. The tests are taken after a good warm-up. At the start of my static apnea I noticed that the nerves are omnipresent. After the first contact with the water, I feel and hear my heart beating in my throat. As I focus on a point at the bottom of the shallow pool, my heart rate slows down. The effect of the water starts my bradycardia and reassures me that the two

minutes will soon be over: All the participants pass the tests!

THE OPEN WATER SESSIONS

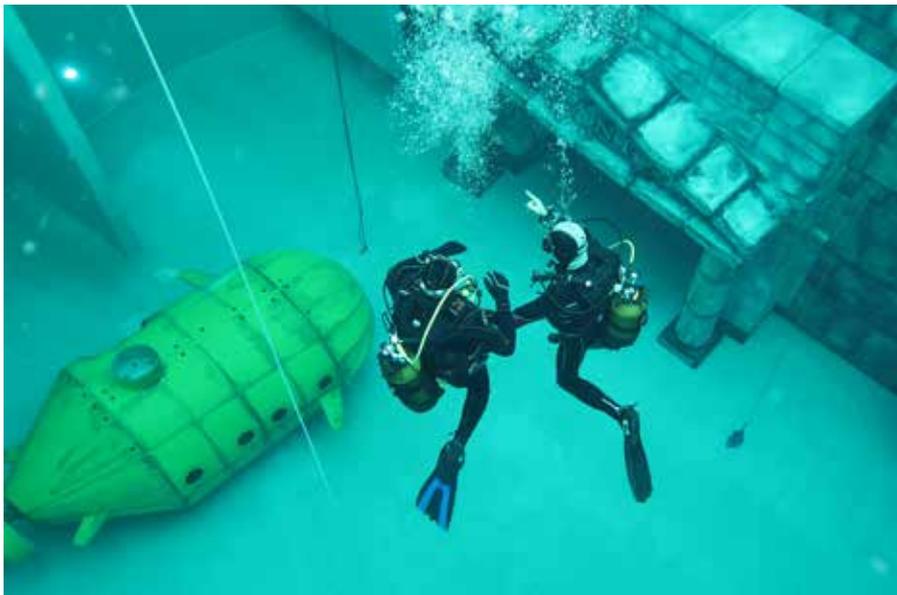
Unlike SCUBA diving you can execute most apnea dives within the constrained space of a pool, but the disciplines of deep diving speaks the most to one's imagination. After the sessions in the pool, the open water part of the course starts. Succeeding the exams means you are ready to go, even though you do not know what to expect.

Our first open water session was held in the water tank, Transfo. I hear you thinking, 'That's not open water? Right, but it is deep. Of course, you can plunge in a natural lake, but a closed tank with clear visibility is a better place for the first metres into the deep. The water is quite cold so we need to put on our wetsuits. When I look over the edge of the pool and discover what a bottom of 15 metres means, I think I will never dive that deep. Not today.

Still in doubt, I nevertheless participate in the warm up with short dives to 3 metres. Slowly we move on to practice rescue interventions. This is a standard operating procedure in the preparation for diving in open water. This routine improves your skills as a safety diver and gives mutual confidence in each other's ability to provide a rescue.

Next step is to adjust our weight to get neutral buoyancy at 6m. We dive to 6m to feel whether we float or not. That depth suddenly appears rather deep. Still, I try to relax and get down with a duck dive. I'm, neutral.

Soon after that, it's down to 10m. Equalising ears and dive mask is now the challenge. 10 quickly becomes 12. An amazing performance when you think that I have never been deeper than 7m on one breath. Then we practice diving with a lanyard. The connection with the descent line is so that even in poor visibility



Photos by Frederic Lasters

you're never far from the only safe way up. It also makes it easier for your safety diver to find you when visibility is bad.

Because we practice following the rules of the constant weight discipline, I ask if I may try a 'free immersion' dive. Following this discipline, you dive by pulling the line, without fin propulsion. This way has the advantage of a very good control of the descent speed. My intention is to go to 12m. All goes well and I manage to equalise once more at 12. Therefore I decide, as briefed, to pull a few more times causing my lanyard to be stopped by the tennis ball hanging at 14m. The ball serves as a prevention against diving too deep and against entanglement. A nice performance to end a successful, first day.

Open water session 2 takes place in the warm deep water pool Nemo 33. The instructors promise us that we can go deeper this time, not just because it is twice as deep, but because the higher temperature of the water facilitates equalisation. The comfort of warm water relaxes the muscles, and those around the Eustachian tube. I'm curious.

Due to the high number of participants, we only had one hour in the deep part of the pool. As it is custom, we started with the rescue exercises to quickly move on to the tests. We were keen to take advantage of the depths offered to fulfil the 18m requirements. Not that it was an obligation to do it on that day, each could do it at their own pace, but it

was a good opportunity and we could try it often as we wanted. The moment we decided to go for the mandatory 18m dives, we had to warn the instructor before the duck dive.

During the preliminary dives, I noticed much to my disappointment that the glide phase was very limited. I wore a shorty and due to its small variable volume, the lifting force started at around 2m, even without any extra weight. Next time I would wear my 7mm wetsuit, even if the water is warm. After I was convinced of my abilities, I went for the 18m in 'constant weight', 'variable weight' and 'free immersion'. In the end, I felt that equalising was becoming more difficult.

After an hour at the deep end, we transferred to the 10m pool for the last test: a rescue dive from 10m to the surface. After the 18m dives, we were well warmed up so the exercise was executed flawlessly. Next it was time to try out some techniques and improve others and the ideal opportunity to try out a proper free immersion. I disposed of all my ABC equipment. The only thing I kept was a borrowed nose clip. I felt naked when I started my dive. Although unnecessary, I pinched my nose to equalise. An old habit. Because my vision was blurry, I experienced this particular dive more intensively. Only the water and I. I enjoyed it and repeated it a few times.

You must dive at least four times in 'open water' to become certified. In preparation for these dives, I practiced different equalisation

WHAT DO YOU GET FROM IT?

Although you, as a SCUBA diver, need not buy specialised equipment to finish the first level of freediving, some of it may improve your performance. The most obvious are the long fins and the monofin. Other items are the mask, the lanyard, the marseillaise and the open cell neoprene. Compared to SCUBA equipment, material for freediving is not expensive.

Unless you completely go for SCUBA diving, you may wonder why bother taking this kind of training. You may start the course out of pure interest, curiosity, or because you like collecting diving certificates, but there are good reasons to consider it as part of your SCUBA training.

- The training improves your apneas. This facilitates your performance during the certification part in a pool. In that case, it is recommended to complete the course before you start your preparation for an exam because you don't want to confuse yourself with two different sets of safety rules.
- The biggest advantage of the course is the newly acquired state of mind. Focused relaxation makes your other dives more serene. Your breathing rate is slower so you can dive longer. Not only will your dive time increase, but the quality will improve as you'll dive more consciously. It's hard to explain why, but it feels like you added an extra dimension to your diving.
- You learn that there are other techniques than Valsalva to equalise your ears. Having more options available is always an advantage.
- Some fellow divers explained to me that they now dive more cautiously and yet with more confidence because they have an increased knowledge of their personal limits. Although I can empathise with this observation, I have not experienced it myself.

To maintain the above-mentioned positive influences on your dives, I guess you have to continue to freedive. After all, one tends to forget things we do not repeat. So will the positive effect perish with a decline in the skill to reach the state of focused relaxation and the knowledge of your own limits?

techniques during my daily commutes between Zoersel and Brussels. Although breathing and a state of focused relaxation are important, you improve with yoga classes. My first dive convinced me of the importance of proper equalisation and regular exercise is the only way you can master a new skill.

WHAT NOW?

After the course, I wondered how I should

proceed. Freediving has definitely improved my experience of SCUBA diving (see sidebars), as well as my knowledge of my limitations, and I look forward to diving into 'real' open water. I'm still hooked on the bottle to completely switch to freediving and yet, sometimes my mind wanders off to the one breath underwater excursions, to feel the invisible hand lifting me upwards... Maybe I'm more inspired than I'm willing to admit?



**DISCIPLINES IN FREE DIVING
STATIC APNEA**

The aim of this discipline is to stay as long as possible underwater. The freediver floats on the surface with his face forward facing down into the water, holding his breath. This part usually takes place in a pool.

DYNAMIC APNEA WITH FINS

Swimming with fins or a monofin underwater. The goal is to swim the furthest distance possible. This part usually takes place in a pool.

DYNAMIC APNEA WITHOUT FINS

Swimming underwater without fins or a monofin. The goal is to swim the furthest distance possible. This part usually takes place in a pool.

FREE IMMERSION

The diver without fins descends by pulling on a rope, with head facing down or up. At the turning point, the diver turns around and pulls on the rope towards the surface.

CONSTANT WEIGHT

The freediver with fins or monofin swims down. At the desired depth the diver turns around and swims back up. The line should not be touched, except at the turning point. The aim is to get as deep as possible, and of course to do this safely and relaxed.

CONSTANT WEIGHT WITHOUT FINS

The free diver without fins or monofin swims down. At the desired depth, the diver turns around and swims back up. The aim is to get as deep as possible, and of course to do this safely and relaxed.

VARIABLE WEIGHT

The diver with fins or monofin uses a limited weight to descend. This can be a weight or a sled. After the excess weight has been left at the turning point, the diver returns to the surface by swimming or pulling at the rope.

NO LIMITS

This discipline sometimes makes the news because of the spectacular depths that are achieved. The diver uses a weight of choice. Usually, a sled is used. The diver ascends by making use of a lift bag, another propellant, a winch, or something else.

THE CUBE / JUMP BLUES

The diver descends to about 15 metres and swims the greatest possible distance along a large square circuit and then surfaces. It somewhat resembles a combination of 'constant weight' and 'dynamic with fins'.

SPEARFISHING

This is an underwater fishing competition. The fishing rod is replaced by a spear or harpoon. The aim of spearfishing, often within a predetermined period of time, is to shoot the largest or heaviest fish.

Photos by Steven Carmans