

how to be good on air

> WHAT ACCOUNTS FOR HUGE DIFFERENCES IN AIR CONSUMPTION? EVEN DIVERS WITH FAIRLY SIMILAR SIZE AND EXPERIENCE HAVE DIFFERENT CONSUMPTION RATES, WHICH COULDN'T BE ATTRIBUTED ONLY TO DIFFERENCES IN FATIGUE OR STRESS LEVELS.

Since different people have different lung volumes, different metabolisms and different genes, the point here is that there's no ideal air consumption rate. In other words, you shouldn't be ashamed of using more air than your buddy.

So let's forget all about gauge competitions. Large air reserves are useful only when they translate into longer, safer or more enjoyable dives. But if all you're after is bragging rights to having more air left over at the end of the dive, maybe you're missing the point behind diving in the first place.

Having a lot of air by the end of the dive is not the ultimate proof of diving excellence that we sometimes make it. However, improving your air consumption often leads to longer (and maybe deeper) dives. Here are some tips to help lower your consumption rate:

Master buoyancy control

Stop moving underwater; just freeze. If you start to sink, then you're not neutrally buoyant. This is because your BCD is not adequately inflated. Believe it or not, adjusting your buoyancy by using the BCD is far less air-consuming than adjusting your depth level in the water column by finning and/or hand movements.

Adjust weighting & achieve horizontal trim

Normally a diver using a bit more-than-needed weight in a conventional BCD won't be able to achieve a perfect trim. The weight around the waist pulls down, while the air cells in the BCD pulls up at

the chest area. Compensation for poor trim takes effort, which translates into more air consumption.

Minimize the 'hole in the water' made by your body. The less water you have to shove aside, the less energy and air you have to consume. One way is to reduce the amount of weight you carry because extra weight needs extra BCD inflation to lift it. A more inflated BCD pushes aside more water.

Another way to shove aside less water is to trim your body in a horizontal position so that your legs are following through the hole made by your shoulders and not enlarging it. Many divers do, in fact, swim with their heads up and fins down. Wings and integrated weight pockets help achieve a good trim, but you can still get the right trim and weight while using a conventional BCD.

On the other hand, underweighting is as bad as overweighting. Too little weight

means that as your tank empties and becomes more buoyant, you will increasingly have to struggle to stay down, resulting in more work and harder breathing.

Get fitter

The fitter you are, the quicker your heart returns to the normal rate after exercise. If you have to swim a long distance to reach a dive site, or carry your kit a long way, you'll start the dive at elevated breathing and heart rates. Actually, some virgin dive sites like Ras Abu Galoum north of Dahab, Red Sea, Egypt, require a 90 minute camel ride! After a period of exercise, a fitter person returns to the normal breathing pattern faster than a less fit one.

Practice finning

Do lots of slow lengths instead of few rapid ones. This will help the right muscles develop. Try and do as many lengths underwater as you can, and take into consideration that underwater finning is not the same as surface finning. There are

: TEXT ASSER SALAMA, IMAGES T. TIMOTHY SMITH

plenty of underwater kicks to choose from. However, the majority of divers use either the frog kick or the flutter kick. An excellent piece of advice is to use the 'modified' flutter and/or frog kicks. The modified version involves bending the knees 90 degrees and doing smaller, slower lengths.

Finning is a lot like driving a car; speeding up increases fuel consumption. Finding a moderate finning pace helps you maintain a relaxed rhythm and keeps your muscles and heart rate working at maximum efficiency. Finning faster will get you there quicker, but will cause you to use your air much more quickly. And at the end of the day, we're not in a hurry.

Diving is meant to be a relaxing activity. It's not a race.

Breathe deeply

It's somewhat against basic logic. Why does breathing deeply make a limited air supply last longer?

Some divers think that breathing from the top half of their lungs is a means of saving air. They take short, shallow breaths but unfortunately they end up wasting air instead of saving it. Actually what they're doing is influencing more carbon dioxide build-up. And believe it or not, it's the need to blow out excess carbon dioxide not the lack of oxygen that urges you take the next breath.

Short, shallow breaths leave your lungs filled with excess carbon dioxide. As this carbon dioxide urgently needs to get out, you're obliged to take another breath although you don't need the oxygen yet.

Do not skip breathe

On the other hand, don't exaggerate the slow, deep breaths to the point of hyperventilation, which can lead to fainting due to suppressing the urge to

breathe. The best breathing pattern is to take slow, deep inhales followed by slow, complete exhales. Do not play with your breathing pattern. Breathe normally and don't hold your breath. It is worth noting that in some circumstances when perfectly-neutral buoyancy is ultimately important, for instance when you're hovering over some fragile corals for a photo, this best breathing pattern may disturb your buoyancy. You'll have to change it for a short while and take shorter, quicker breaths.

Check your gear

Check your equipment for air leaks. Often, you can't see the leaks yourself. A little bubbling from your tank's O-ring or your BCD inflator can sum up to several bars/PSIs over an hour's dive. A free-flowing octopus occasionally dumps air a lot faster. Detune it if you can, and mount it with the mouthpiece facing down. Don't detune your primary regulator though. Detuning your primary regulator leads to increasing your breathing work. This increase leads to an elevated carbon dioxide production rate, which leads to accelerating your breathing rate and eventually translates into wasting more air.



Left: Mastering buoyancy control and horizontal trim enhances your gas consumption rate.

Above & right: Some virgin dive sites, like Ras Abu Galoum north of Dahab, Red Sea, Egypt, require a 90 minute camel ride! After a period of exercise, a fitter person returns to the normal breathing pattern faster than a less fit one.



About the author Asser Salama is a mechanical power engineer, an MBA degree holder, and a TDI/SDI/CMAS instructor. He teaches both recreational and technical diving courses and organizes trips all over the Egyptian Red Sea. Asser is the current president of Red Sea Shadow, the largest online scuba diving community in Egypt. He enjoys writing and software development. Email Asser at asser@red-sea-shadow.com or call him on 0020-11-255-4533.