

4 KEYS TO **MASTERING YOUR DIVING** WHICH YOUR INSTRUCTOR PROBABLY NEVER TAUGHT YOU



Jose
Cernuda



4 Keys to Mastering Your Diving

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4 Keys to Mastering Your Diving

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4 Keys to Mastering Your Diving



THANK
YOU!

Thank you for Downloading this book! I am really excited to share with you the lessons in here. I have a huge passion for the sport of scuba diving and want to share what I know with other divers. If you know someone who dives please take a moment to share this book with them.

My goal is to build a community of divers online who understand that diving is a sport which requires skill. This book, my web site, and the social media sites I'm on are all an effort to grow a community of likeminded divers. Please take a moment to share by clicking the buttons below.



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4 Keys to Mastering Your Diving

Who am I and why you should read this book



Thank you for downloading my book and expressing interest in becoming a better scuba diver! My name is Jose Cernuda and I am a Scuba Instructor. My passion and love for scuba diving started when I first got certified back in 1993. I became a Scuba instructor in 2001, and have been teaching since then both privately and at the university level. Through the years I have continued with my love of diving by becoming a certified Cave and Technical diver as well as an Instructor Trainer. Let just say, I live and breathe all things scuba, and I kind of know this stuff :).

The reason why I wrote this book is because I have see a trend developing over the years. I suspect this trend exists not just in Scuba diving. The trend is towards making getting certified to scuba dive easier, faster, and cheaper than it has ever been before. As much as I love Scuba diving, and as much as I love the idea of the sport growing and more people than ever before experiencing Scuba diving, Unfortunately I've seen the quality of courses slowly declining over the years.

At the same time, the sport has taken huge leaps in the realm of technical diving. Today it is fairly common to see people diving in doubles (an advanced gear configuration where two tanks are carried on your back) or even rebreathers (an advanced specialized piece of gear which allows you to re-breathe your own air) on dive boats. At this level, the training is often thorough and very methodical, but very few divers ever get to this level where mastery of the skill of diving becomes essential.

4 Keys to Mastering Your Diving

This book aims to fill in some of the gaps and begin to teach the skills which many divers never get to learn at the beginner levels. These are the skills, some of which used to be taught when courses were longer, some are skills derived from the technical diving world, which "your instructor probably never taught you". In short this book focuses on fundamentals.

While no book, video, or web site can ever take the place of one on one training and coaching, it's probably the next best thing. Fortunately today putting together information or videos and sharing them has never been easier thanks to the internet. If you are reading this book, I suspect you may already have come across web videos or articles attempting to help you improve your diving.

Today we have online forums, blogs, Facebook and tons of other sources of information. There is probably nothing that I can write in this book that hasn't already been published on some forum or blog. The difference is, that as far as I can tell no one has developed a guide to helping you improve your diving. Taking you step by step through the skills and drills that really will help you to become more comfortable and skilled as a diver. That is why I wrote this book. I know that if you read this book, and apply what is in it, that you will become a better more comfortable diver, and be able to really enjoy all that this sport has to offer.

Let me tell you a little about me, and how I got to where I am today. Even though I am an experienced Instructor trainer and technical diver, by no means do I think I know everything there is to know about diving. I am always learning and improving, even at this level.

In fact, this is a little embarrassing to admit, but what comes as a surprise to some of my friends, is that even when I became an instructor in 2001 I still did not feel as though I had "mastered" Scuba diving.

It wasn't because of poor training or lack of experience either. At this point in my life I had been diving for 8 years, and had worked my way through the ranks in a university setting that didn't cut any corners. On paper I should have been totally comfortable and feeling as though I had mastered diving, or at least that's what I thought. Because I didn't feel as though I had mastered everything about diving however, I continued to seek out classes and to learn everything that I could. Maybe it's the perfectionist in me, or maybe it was just me feeling inadequate that drove me to continuously seek out training and knowledge about diving. In any case, even when I became an instructor I was still wanting to learn more about diving, but I'll tell you a little more about that later....

4 Keys to Mastering Your Diving



Here's the thing, before I ever became an instructor, I started out in diving like most people I know. I grew up watching scuba diving on television and watching in awe at the sight of beautiful reefs and marine life that existed. I fantasized about one day being able to go on an adventure underwater and experiencing these amazing dive locations for myself.

In 1993 after my first year in college I decided to take my first Scuba class at a local dive shop. When I took the class I was blown away and fascinated by the amount of information. I devoured the text book, took copious notes, and anxiously waited for my next class so that I could ask questions about the information I had read. I basically became a scuba nerd. I also looked forward to the pool sessions. Being underwater was simply AMAZING!!!! . I couldn't believe that I was actually able to breathe and swim underwater so easily.

After getting certified I dove whenever possible on the weekends. At this time I really was not aware of how I looked or performed underwater. I was simply happy to be under water, breathing, and seeing amazing sites.

4 Keys to Mastering Your Diving

Something in me was not completely comfortable with diving though. There was always a small hesitation, an anxiety, even though I was "certified" I wasn't 100 percent comfortable with my skills. I was trusting that everything would work out and that I would be able to solve issues in the water. But I was never the first one in the water, and I always tried to stay close to more experienced divers and to dive with them whenever possible. I now know why I had this hesitation, and I'll explain what it was, and how I've helped my students overcome it later in this book.

In the summer of 1995, I went on a cruise that stopped in Cozumel Mexico. This would be the first time after being certified that I got to dive outside the United States. I signed up for a dive excursion with a local dive operator to see what Cozumel had to offer.

While on this dive, I noticed for the first time a truly great diver. The divemaster leading this dive barely kicked in the water. He was completely neutral. It seemed as if he was a fish gliding through the water. For every 4 or 5 kicks I took, it seemed like he was able to kick just once and cover the same ground. When we finished the dive, I had depleted most of the air in my tank while he still had plenty for the next dive without having to switch to a new tank. How could this be? Especially considering that at that time I was a college track and field athlete in excellent shape. It couldn't just be conditioning. I was puzzled, and I knew there obviously was much more to this sport than simply going under water, breathing while swimming around, and coming back to the boat safely.

A few years later I decided to take an advanced class at the university. I figured a university level class would really get me to "master" the sport. I wanted to be like that dive master in Cozumel moving through the water effortlessly and barely breathing. My skills greatly improved during this course as did my comfort. But what I noticed was that most of the class was geared towards providing new experiences like night, wreck and deep diving. The class was not necessarily structured to improve the performance of diving and to really make you a great diver. I was still happy to be learning more about the sport and my hunger for more information and experiences in the diving world only grew.

I moved through the usual training progression eagerly reading and learning everything I could about the sport, but still not really feeling as though I was "masterful". Sure by now my buoyancy was pretty good, and my breathing rate was definitely better, and by now I was totally comfortable and confident diving in the water with just about anyone, but something was missing. Even though I knew I was really efficient in the water, I still did not feel as though I had "mastered" the skill of diving.

4 Keys to Mastering Your Diving

In 2001 I finally took the steps to become an instructor. At Florida International University, the University I had done all of my training since taking my advanced class. They held a NAUI ITC (Instructor Training Course). This was a 13 day boot camp like training on how to teach and be a good instructor.

While going my instructor training course I met some amazing instructor trainers that I looked up to. Not just for their skills in the water, but for their ability to convey the diving wisdom they had acquired over many years. A few of them were also Cave Divers, and one was a Cave instructor. They talked about how skillful you had to be in order to cave dive. How not kicking correctly, or hovering perfectly could cause a diver to silt out a cave and as a consequence lose all visibility in a matter of moments. How Cave divers were the best divers around. I wanted instantly wanted to become a cave diver. At the time I didn't think I wanted to even cave dive, but I reasoned that the skills would be worth learning, and I could always use these skills If I were to pursue diving in wrecks which are prevalent in South Florida (where I am from). More than anything else, I was pursuing becoming a great diver and mastering the skill of diving.

Remember, how I mentioned earlier that when I first became an instructor I still did not feel as though I had "mastered" the skill of diving. Well this is when things began to change for me in that regard.

Shortly after becoming an instructor I took my first Cave diving class, actually it was a Cavern class (the first class in the progression to becoming a cave diver). Shortly after that I took a decompression class and began doing a lot of technical diving. It was during these classes, and doing these more advanced dives that I really started to finally hone in on the skill of diving. I began to feel as though I was mastering diving.

All throughout this time I was also teaching diving both at the University, and at a local dive shop that specialized in technical diving. I didn't realize before becoming an instructor how much I would grow to love teaching Scuba. Being able to share a sport with others that was so much fun and had become a major part of my life was amazing. I really enjoyed having my students experience being underwater for the first time. I also loved showing students not just how to dive safely, but also all the tips and tricks that made them better divers and put them on the road to becoming great divers.

During this time I also began to realize something which was prevalent in the dive community, improper, or watered down training. This was extremely apparent when teaching advanced classes to students who had received their training elsewhere. Not every single student received poor training, but many did. I often had to do a lot of remedial work with students who enrolled in our university classes at the advanced level, and many were actually so uncomfortable in the water, and so inept in their skills

4 Keys to Mastering Your Diving

that we had no choice but to recommend that they start from scratch at the beginning open water class. While it really upset me that I knew there were divers who really wanted to learn how to dive, and be comfortable enough with their skills to dive on their own, I also felt that there wasn't much I could do about the watered down instruction that was taking place at many dive shops.

One big thing I realized around this time is that a lot of the skills being taught, the gear that is being used, and practices which many divers follow to this day, are really out dated. I dedicate more time to that on my site greatdivers.com and in my emails to subscribers of my blog. So make sure you are subscribed.

Anyways, around this time I stated to incorporate teaching more "advanced skills" such as how to master hovering and kicking techniques to my basic classes. I reasoned that having spot on buoyancy, great air consumption, and amazing propulsion techniques shouldn't be reserved for just those wanting to do technical diving. I also wanted to make every class better than the one before, and really have the divers I produced be great divers.

My students, because they felt comfortable in the water, and because they were competent with their skills continued on in the sport. This unfortunately was not always the case with many students of shorter classes. My students were going on to become great divers.

All the while I continued diving, learning as much as I could and teaching more and more classes. I even went on to become an instructor trainer myself (that's the instructor that teaches scuba instructors how to teach and be scuba instructors). While teaching my classes, students would often show me posts online or videos of other divers demonstrating scuba skills. Some of the sites also gave tips and information on how to become a better diver. The information was often scattered and sometimes confusing. Because of this I decided to create greatdivers.com and this book.

This book is a guide to some of the fundamental keys which are often overlooked. I intend to update this book and to provide ongoing content through my site greatdivers.com . Make sure you are subscribed to my list, I share exclusive content via e-mail and on my blog, all about how to improve your diving and even choose the right diving equipment.

4 Keys to Mastering Your Diving

How to use this book

When I was in the process of becoming a divemaster, one of the requirements I had was to assist in the ongoing classes, which took place in the university. Before beginning this process I believed I had a firm grasp of diving and how to perform all the required skills. What I found out was somewhat different. I learned that I had a good general idea of how to perform different skills, and I could perform many of them myself. However, when it came to actually demonstrating a skill, or knowing for example, where a needed to be during every phase of a skill such alternate air source breathing, I wasn't quite so sure.

Because I understood the general concept and had a firm grasp on it, I somehow mistakenly thought I also knew all the details. So, because it was a requirement, and because I just liked being in the water, I went to the same classes over and over again. Repeating the same classes I finally mastered the skills. Of course I also learned a lot about leadership and coaching diving as well along the way!

Once I became an instructor, I continued to go to other instructor's classes to help. At this point, I had mastered the skills and I could efficiently demonstrate all of them, but I learned different ways of explaining skills, demonstrating procedures, and how other instructors coached. Experiencing how many different instructors taught helped me develop and perfect my own teaching style. It also gave me a head start in learning skills I could teach that weren't necessarily part of the agencies official curriculum, but which helped my students to become better divers.

Why do I mention this story? Because I suspect some people reading this book feel they already know a lot of what I am going to teach, and that in itself may present an obstacle. If you don't then great! Please read on. If you do however, my concern is that it's difficult to really be open and learn something new, if you already think you know what is about to be taught. So as best as possible keep an open mind and try to approach each section as if you are seeing it for the first time. If the material isn't new to you then consider it reinforcement. Even better, if there is stuff you think I could do better, or explain better, let me know. Shoot me an e-mail at jose@greatdivers.com. I'd love to hear from you! My goal is to update this e-book and always have it up to date with the best information available.

4 Keys to Mastering Your Diving

I have outlined this book in 4 main sections (The Keys to becoming a great diver) they are:

- Being underwater and loving it! (How to be completely comfortable under water even when you are not breathing)
- Being one with the water (How to master buoyancy, so that you can hover effortlessly)
- Swimming like a fish (The art of propulsion)
- Applying the lessons in this book (How to really master this stuff)

Becoming one with the Water is all about becoming comfortable under water. One of the most important, and often overlooked aspects of diving is that you have to be comfortable under water before you can begin to think about improving any other aspect of your diving. Being comfortable helps you improve because it lets you relax and enjoy the dive and all that is happening around you. It's in this relaxed state that you can then become aware of other things that happen with your body such as body position, propulsion or breathing rate. In this section I discuss different skills and attitudes that can be learned which will help you feel comfortable under water.

Once you have become comfortable under water, we now need to get you on the path to becoming like a fish. Have you ever noticed that fish neither sink nor float when they stop moving. This is because they are neutrally buoyant. To get you on your path to becoming a great diver we need to get you both neutral and properly positioned in the water column for propulsion. That's what this section will help you achieve. Once you are perfectly neutral and properly positioned in the water, you'll conserve energy, your air consumption will improve, and you will enjoy truly feeling weightless underwater.

Now that we have you comfortable, neutral, and in a position which is beneficial for movement it's time to move! In this section I'll go through efficient propulsion techniques to get you moving in the water. Once you master the skills in this section you'll be on your way to moving like a fish in the water.

4 Keys to Mastering Your Diving

Finally, we'll wrap up all the information by showing you how you can apply the lessons in this book and move forward on your path to mastery and becoming a great diver.

My suggestion for reading this book is to begin with the section on becoming one with the water and work through the book sequentially. Keep an open mind, and hopefully even if you are a seasoned diver you will pick up a thing or two. If you choose, you can always jump to the section that interests you, but I don't believe this is the best way to learn all that is contained in this book. If you feel I missed something, or have a tip which you think would help other divers become better, let me know!! shoot me an e-mail me at jose@greatdivers.com. My goal is to help as many people as possible become great divers, so if you have a trick or a tip, let me know so I can share, don't keep it all to yourself :)

4 Keys to Mastering Your Diving

Key # 1 Being underwater, and loving it! (How to be completely comfortable under water even when you're not breathing)

One of the most fundamental traits that is needed to be competent as a Scuba Diver is comfort. Teaching someone to be comfortable however is also one of the hardest things to do. There are many factors that affect comfort in the water. Here we will begin to address some of them. The biggest enemy of a Scuba diver is fear, or even worse Panic. Fear and Panic are usually behind many of the diving accidents that occur. So to me, making a diver comfortable in the water is paramount! It's not just about being a great diver, it's about being a safe diver. In my Scuba diver courses I will usually spend at least 2 pool sessions before introducing a new diver to a Scuba unit. The reason I do this is to make sure the person feels comfortable underwater, and is competent in skin diving skills which will carry over once we introduce the Scuba unit. The characteristics of a comfortable diver are **feeling competent in your skills, feeling safe, and knowing you are in control of yourself based on your experience.**

Feeling Competent

Feeling competent in your skills is vital. It's certainly one of the things that helps in making you comfortable. Like I mentioned earlier, when I was going through my divemaster training I sat in on many, many classes that other instructors were teaching. These were classes which I had already completed and passed very successfully the first time. However by watching, demonstrating, and repeating the same skills over and over again I really mastered them. When you took your Open water course, chances are the skills you were taught were repeated several times before moving on. There is a reason for this. It is very possible for you to get a skill once, but not be able to do it the second time around. I have a rule in my classes that every skill must be completed at least 3 times before we move on. This way, I know my students know how to do a skill. They know they know how to do the skill. And most importantly having done it multiple times will hopefully start to train the "muscle memory" so that the skill can become automatic.

Three times is by no means mastery though. The more times you repeat a skill over and over again the better you become at it. The more automatic it becomes. Think

4 Keys to Mastering Your Diving

of a child learning to ride a bike. It takes a lot of effort and concentration to balance on 2 wheels for the first time, but once that balance and the "muscle memory" kicks in, it becomes automatic. They don't have to think about balancing it's just automatic. The same is true for the skills in Scuba.

When I say Scuba diving skills, **I'm not just referring to diving itself.** When was the last time you practiced an out of air scenario? or taking off your scuba unit and putting it back on underwater? Knowing that you have done these skills many times and are totally comfortable with them will help you to feel competent and comfortable. These skills of course need to be mastered in confined water under the supervision of an instructor or another dive leader, so I'm in no way implying that you should just try these on your next dive. But if it's been a while, schedule some time with a scuba instructor. Do a refresher if necessary, but make sure you practice all the basic skills to the point where you truly feel you have mastery of them.

In this book I will show you several drills you can perform to improve your diving. Don't just read about the drills and watch the videos, go out and practice them in a controlled shallow environment. Once you have done them, do them again, and again until you feel completely comfortable with the skill. Repetition breeds mastery!

The real takeaway is that to feel competent you need to practice. Practice means repetition. You need to practice the skills you have learned in your classes over and over, and you need to get as much practice as possible. The skills I will show you later in this book also need to be practiced.

Don't confuse practicing skills with actually diving. They are two separate things.

When it comes to diving itself you need to get out and dive as often as possible. Even if it is in a swimming pool or a quarry get your time in. Time spent underwater in any environment is better than no time at all. You need to practice both diving, and diving skills in order to become a better diver.

Once you think you have mastered a skill, if possible, video tape yourself. Underwater cameras that take decent video like the [GoPro HD Hero 2](#) make it easy for you to see yourself and to really see how you perform underwater. The results can be surprising sometimes.

4 Keys to Mastering Your Diving



Feeling Safe

Feeling safe underwater is incredibly important. Scuba diving is in no way supposed to be an adrenaline sport. In fact, it's quite the opposite. Scuba diving is one of the most relaxing and leisurely activities I can think of. Many people I know go Scuba diving to de-stress and forget about the rest of the world. Feeling safe comes from knowing and trusting your equipment, being competent in your training, and having confidence in knowing that you can handle most any situation that can happen underwater. It also helps when you are diving with buddies who are equally adept at diving, and knowing that should something go wrong, you can count on them.

As you probably learned in your entry level Scuba course, diving is very gear intensive. We rely on Scuba equipment to keep us alive under water. Knowing that your equipment is well kept, properly set up, and tested during a buddy check just prior to the dive will help you feel safe. It also helps to know that you can handle a situation like a free flowing regulator or a buddy who runs out of air.

One of the most important concepts to grasp is that we dive in spite of our equipment, not because of it. That is to say that there is no situation that can possibly happen underwater with regards to equipment that will become anything more than an inconvenience that may end our dive early. That is of course when you are comfortable and competent in your skills.

Feeling safe is such an important part of diving, that I have a rule with all of my students and dive buddies. The rule is: **Anybody can call any dive, for any reason whatsoever, and not be questioned about it.** This is a great rule that comes from technical diving. Calling a dive means you can simply give your dive buddy a thumbs up sign and end the dive at any point. A simple thumbs up is never questioned. The last

4 Keys to Mastering Your Diving

thing anybody wants is to not feel safe while underwater. It's ok to feel a little apprehension or even nervous about the unknown on your first dives, but this is different from feeling unsafe. Of course the rule applies not just to feeling unsafe, an upset stomach, feeling cold, tired or any reason at all is valid.

You never want to feel pressured to have to complete a dive. You also don't want to be diving with someone who does not want to be on a dive, especially if for some reason, they feel unsafe. Something else to consider, is that someone who feels unsafe for whatever reason may be embarrassed and unwilling to admit that they feel how they do. This is why it is important that anybody can give a thumbs up and end a dive at any time.

Another major factor in feeling safe underwater is choosing dives that are appropriate for your training level and experience. It's easy for a beginner to become overwhelmed in strong current, less than ideal visibility or any situation underwater that makes you feel out of control. So make sure to choose your dives and dive buddies wisely!

Being in Control

Being in control is part of what this whole book is about. When you master the skills of diving you will feel in control of both yourself and your equipment. Feeling in control as mentioned before is also a function of the environments you allow yourself to be exposed to. We can't for example control the weather and some of the conditions we have to contend with during a dive. So as an example, a novice diver who either chooses to, or naively enters a strong current without prior experience or guidance is very likely to feel out of control. That same diver however, if he has prior experience with no or little current, is briefed on how to dive in that current, and then performs a dive with a competent dive leader will certainly feel more in control. Even though he may not feel totally in control the first time, the level of comfort is certainly greater knowing he has been briefed and is diving with someone that has experience in those types of conditions. Once that same diver performs a second and third dive in similar conditions the level of control that he feels will go up, and so too will his comfort level of confidence. That is why there is no substitute for experience! Even though courses and books like this have their place and are very important, you also have to get out and dive! The more you practice skills like the ones in this book, and the ones taught in your entry level class, as well as practicing diving itself, the more in control you will feel.

4 Keys to Mastering Your Diving

The takeaway is to never do a dive where you feel you will be out of control or unsafe doing, and try to dive with more experienced divers or dive leaders whenever possible. Especially when you are just starting out.

Having FUN!!!

All this talk about being competent, safe, and in control can overshadow the main reason we all started diving in the first place: **to have fun!!!** For me, it's important to always keep this in mind. Of course safety always comes first, but if a dive I am doing isn't fun, then why am I doing it? Diving should be enjoyable and fun, so don't take the skills and drills so seriously that you lose sight of the fun and enjoyment of diving!

Comfort Skills

Below are a series of drills which I always teach my students before we start on Scuba. These drills can be done in a swimming pool without a scuba unit. The goal with these drills are to make you totally comfortable underwater. If you master all these skills, your comfort will improve and in turn so will your diving.

W.I.F.M. (What's in it for me?)

What's in it for me? Every skill outlined below has a specific purpose. I will let you know what that purpose is and then if when you click on the link you will see a demonstration of that skill on my blog. Watch the skills first, then practice them. Every skill is here for a reason. There is no fluff.

4 Keys to Mastering Your Diving

Breathing through a snorkel with no mask on

If you have never tried this, you should at least once! Not everybody is comfortable no mask on their face and not being able to cover their nose. In fact, many students I've had in the past had problems at first distinguishing between breathing through their nose and breathing through their mouth. This exercise is simply to put your face in the water with no mask on, and not covering your nose with your fingers or anything else, and then breathe through the snorkel for at least a minute.

For many people this is almost a non-skill which seems overly simple, but if you are one of the people who are not comfortable without a mask on and something covering your nose, then I suggest practicing this skill over and over until it becomes comfortable for you. There are many times in scuba diving when a mask may possibly come off. Knowing that it's not a big deal and that you can swim and easily ascend without a mask on is a good confidence builder. Click the [video below to see how to perform this skill](#).



4 Keys to Mastering Your Diving

Mastering Mask Clearing

I know, I know, you're probably thinking I already know how to clear my mask. But do you really? Here's what I mean. I've seen many students over the years tell me they can clear their mask when I first start working with them. The thing is they can, but it takes multiple breaths and often the mask is not completely clear. If you can clear your mask **completely**, meaning no water whatsoever in your mask, and do so multiple times on one breath, then you probably already know how to clear your mask. If not, watch the demo below. The reason I include this skill, even though it is taught in the entry level class is because it is the one skill I see that even though many people know how to do it, far too many have not mastered it. Also, it will be a skill you will need to have mastered for other skills which I will present later in this book. You should be able to clear your mask multiple times with one breath. The [video below shows how to clear your mask on one breath](#).



4 Keys to Mastering Your Diving

The keys to effective mask clearing are:

- 1) Have a seal against your forehead
- 2) Make sure your head is in a vertical position. You may need to look up if your body is horizontal
- 3) Break the seal against your cheeks just slightly (about as much separation as it would take for your pinky to fit)
- 4) Slowly exhale through your nose while keeping your mouth closed.
 - Placing your tongue on the roof of your mouth helps assure you are only exhaling through your nose.
 - Be aware of where the water level is as it drops so that you stop exhaling once the mask is clear
 - continue exhaling slowly as you seal your mask back against your cheek

4 Keys to Mastering Your Diving

Holding your breath under water

What do you mean hold my breath? Isn't the golden rule of scuba diving to never hold your breath? You're right you should never hold your breath while on Scuba. However, I have consistently seen that students that are comfortable holding their breath under water, and students who came to me with a previous background in skin diving are much more comfortable while on Scuba. I think it's because once you realize you can go for a pretty long time under water without breathing, the thought of not having a regulator in your mouth for a few seconds in the event that it falls out of your mouth or having to share air etc.. becomes trivial. It's really not a big deal, nor should it be, but knowing these skills take seconds and that you can go without breathing for possibly minutes is a big confidence booster. Plus, it's just reassuring to be able to hold your breath for a long [time like this guy](#).



One quick warning, do not force yourself to stay down under any circumstances. Listen to your body when you feel the need to come up. Also, do not perform this exercise at depth. This is to be done on the very surface of the water.

So here is how I like to teach basic breath holding.

4 Keys to Mastering Your Diving

First I like to establish a baseline. For this, in the pool, you will hold on to the side of the pool, submerge your face in the water, and time how long you can hold your breath for. Make a note of how long you can hold your breath for after this exercise.

Here is where the fun begins!

First realize that as you read this, chances are you are not breathing completely with your lungs. Here's what I mean. A full diaphragmic breath is one where your belly should come out as you fully inflate your lungs. Most of us are only breathing with the upper chest and hence not breathing fully.

So take a moment, if you are sitting down, then sit straight up, or better yet stand, and take a deep breath through your mouth slowly count to 8 as you take a deep breath and make sure your belly comes out as you completely inflate your lungs. When it comes time to exhale count to 8 just as you did during the inhalation and exhale as fully as possible. Repeat this process for about a minute.

This exercise helps you to get full ventilations and to purge your lungs of some of the excess carbon dioxide in your lungs. When your holding your breath, the buildup of carbon dioxide is what makes you want to take another breath so the less we have when we begin the better.

The next thing I like to focus on is movement. Every movement under water uses energy. That movement also produces carbon dioxide in our bodies which reduces the amount of time we can hold our breath for. So before attempting to do a breath held exercise always like to try to stay as still as possible. I would even go as far as to try to get into a calm meditative state, sort of how you would feel just before falling asleep. No thoughts in your head. It may help to focus on, or imagine a white piece of paper with nothing on it.

Armed with this information, now breathe deeply for about a minute, take one final full breath, and then re-try the breath held exercise. There is usually a measurable improvement in the amount of time you can hold your breath for. This drill should always be done with a buddy next to you, and you should always come up when the sensation of needing air becomes great.

Most of us played this game when we were kids in the swimming pool, it's cool to do it with a little more information to actually stay down longer. This is a fun skill to practice which will definitely improve your confidence in the water.

4 Keys to Mastering Your Diving

Skin Diving Bail Out

The skin diving bail out is perhaps the hardest skill I teach in my entry-level course. Mastering this skill really requires comfort underwater. Mastering this skill is a great confidence builder. It also helps you to know that you can handle a multitude of tasks underwater without even breathing.

So what is a Skin Bail Out? Simply put, a skin diving bail out is when you jump in the water with your mask and fins off while holding your breath. If you need to, you can wear a weight belt with just enough weight to keep you under water. You can also do this drill with a buddy holding you down. Make sure your buddy lets you come up of course once you feel the need to come to the surface.

Once under water you proceed to place your fins on, your mask on, clear your mask, and finally clear your snorkel on the surface. The key is to do this while staying in control of all of your equipment. Doing this skill masterfully means having no water whatsoever in the mask, and blasting the snorkel while keeping your head in the water.

Remember how earlier in this book I mentioned that at first I was somewhat anxious about diving. Well this one skill really helped to get me comfortable in the water. It also has helped many of my students to become much more comfortable underwater and comfortable when scuba diving.

In my experience this skill is 90 % mental. If you tell yourself you have all the air in the world and take your time to complete the skill it will be easy. If you think you don't have a lot of time and try to rush through it, it usually feels like you are in a race against time before you run out of air. Notice in my video how calm I am and in no particular rush to come back to the surface. I do not practice freediving, or breath holding in any way, the reason why I am able to do this is because I am staying calm and I know I have lots more air in my lungs than what I actually need. Check out the [video below to see how to perform the skin diving bail out](#).

4 Keys to Mastering Your Diving



4 Keys to Mastering Your Diving

Key # 2 Being one with the water (How to master buoyancy, so that you can hover effortlessly)

Once you have become comfortable in the water, we now need to become one with the water. As mentioned earlier, fish usually do not sink or float. They are usually perfectly neutral in the water. This is the state of being that we want to achieve.

The first step in mastering buoyancy is getting our weighting right. As you learned in your Scuba diver course, divers will often need to wear weight as ballast to offset the positive buoyancy of their own bodies as well as the gear they are wearing in the water.

One of the biggest problems I have seen with way too many divers, is that they are carrying around way too much lead as ballast. While today's BCD's have plenty of lift, and are capable of lifting most of this weight, why would you want to carry any extra weight into the water?

Want to see what a perfectly neutral, ultra efficient diver looks like? Check out this [video of Steve Bogaerts](#), even though he is sidemounting, a gear configuration which is commonly used for cave diving, notice how he is perfectly neutral in the water and he seems to move like a fish. His weighting is down to just what is necessary. Steve has is weighting down so precisely that he doesn't even require a BCD for lift. You read that right, in case you didn't... re-read that last sentence :) . Now [watch the video so you can see what I mean](#).



4 Keys to Mastering Your Diving

Hopefully you're starting to see that one of my goals is to get you down to the bare minimum amount of weight that you need to stay underwater. How much weight are you carrying? And Why? Is your BCD being used to offset YOUR negative buoyancy? Or the one you're creating with all the extra weight?

If you carry more weight than what is necessary it is incredibly inefficient, and potentially dangerous. If you carry more weight into the water than what you need you will:

- **Work HARDER OUT OF THE WATER** because you have to carry that weight around with all the gear you are already having to lug around
- **WORK HARDER IN THE WATER** because you have to use more gas in your BCD in order to keep yourself off of the sea floor and often end up kicking more just to stay off the bottom
- **INCREASE YOUR BREATHING RATE** because you now have increased drag in the water due to the extra gas in your BCD and the unnecessary kicking you may be doing
- **MOST LIKELY BE PLACING YOUR BODY IN AN UNFAVORABLE POSITION** in the water because of the concentration of ballast on one part of your body. Typically your feet will tend be heavy and make it difficult to stay horizontal
- **MAKE YOUR BREATHING RATE GO UP** because of the extra effort needed to adjust your body in the water
- **BE IN A DANGEROUS SITUATION IN AN EMERGENCY** if it the weight you are carrying **IS NOT** ditched properly

I hope I've convinced you to have the least amount of weight necessary to keep you underwater. So how do we find the magical number? First I want you to understand what effects buoyancy in the water. Some of the factors include:

Density of the water

- Salt water is denser than fresh water. Therefore you will require more lead in salt water than you will in fresh water.

4 Keys to Mastering Your Diving

Dive gear

- The Regulator, BCD, even some fins which you will take into the water all have weight associated to them which can affect your buoyancy.
- Cylinder: Depending on the cylinder or tank you are using you may need to add weight to offset for the cylinder being low on gas at the end of the dive. This is one of the trickiest factors to consider. The reason why is because a cylinder may be negative and sink at the beginning of the dive, but positive and float at the end of the dive when it is near empty. You have to consider that the compressed gas in the cylinder has weight too. In the video below I did a quick demo so you can see for yourself the [difference between a full cylinder and an empty one](#).



Exposure protection

- If you are wearing a neoprene wetsuit, the neoprene is positively buoyant. Depending on the thickness of the suit and your body size you will need to offset for the buoyancy of the wetsuit

4 Keys to Mastering Your Diving

- If you are wearing a drysuit, you will also need to offset for the buoyancy created by the drysuit. Depending on what undergarments you are using, and the material of the suit itself you will need to add lead to offset the buoyancy created by the suit and / or the undergarments

Body composition

- Muscle is denser than water, so it tends to sink. I have had many students in the past who lifted weights and were very muscular and lean, these students often needed little or no extra weight to stay underwater
- Fat is less dense than water, so it tends to float. If you have more fat on your body, you will probably need more lead to offset the positive buoyancy caused by the fat.
- Lung volume; everybody's lungs are different. Because we are breathing while underwater this is the one variable that is constantly changing, however, a bigger lung will have more air in it than a smaller one and hence require a little extra lead

As you can see there are many factors to consider that can affect your buoyancy. There are two reasons why I mention all these factors:

1. **If any of the above factors change, the amount of weight that you need to be properly weighted can change as well.**
2. **Because there are so many variables, the only reliable method to determine how much weight you will need to use as ballast is to conduct a buoyancy check.**

A buoyancy check is when we place you in the water, and then by trial and error, slowly add lead until we arrive at the amount of weight that you will need to be neutrally buoyant. The Buoyancy check is a starting point. It usually will get us really close to the amount of ballast that you will eventually need. Once we find the amount of weight we need with a buoyancy check we can then fine tune the weight to find exactly what we need.

4 Keys to Mastering Your Diving

Buoyancy checks can be done with, and without scuba gear on. If we do a buoyancy check without scuba gear on, then we will need to adjust our weight later once we factor in the Scuba equipment.

My preference is to do buoyancy checks this way. The main reason is because it is much easier to balance in a vertical position without a scuba unit on and determine the correct amount of weight you need for just your body and exposure protection. We can then do a separate buoyancy check for the equipment with the cylinder down to the reserve pressure and add the two numbers together.

The benefit of knowing how much ballast we need without scuba gear on, is that in the event that we want to skin dive, we will know how much weight we need for that activity.

Also, because potentially we may be diving with different sized cylinders, or cylinders made of different materials (cylinders can be made of either steel or aluminum) . By knowing how much weight we need for just our bodies, it will be easy to adjust for a change in cylinder size or type. We can also compensate for any variance caused by the gear itself. So here is how we perform a buoyancy check without scuba.

How to perform a Buoyancy Check

- Buoyancy Check without Scuba: The goal of this exercise is to find the correct amount of weight needed to buoy you upright in the water, with the water level at about mid forehead, while maintaining an upright position



4 Keys to Mastering Your Diving

- Step 1: Standing in water that is about neck deep. Take a weight of about 2 pounds (1 kg) and hold it either by your side, your back, or slightly in front of you. Everybody is different, so you may need to play with the positioning to find where you balance out best in order to remain in a vertical position.
- Step 2: Focus on your breathing for a moment. Now take a breath that's about seventy percent of the total volume of air you think you could fill in your lungs (don't worry too much about an exact amount, it's probably impossible to determine what exactly 70% is, just use your best judgment)
- Step 3: Now **slowly** ease yourself into the water. You want to go really slow to prevent yourself from bobbing up and down if you float.
- Step 4: Make a note of where you are in respect to the water level and your head.
 - If you sink, underwater, you will need to try with less weight, or maybe even no weight.
 - If the water level was below your forehead (your eyes as an example) you will need more weight.
 - Repeat this exercise with more weight until you find the correct amount of weight that is needed to be right at forehead level.
- Step 5: Once you find the correct amount of weight make a note of it. This is how much weight you need to be neutral in the water without scuba equipment on.
- Step 6 Now you need to determine how much weight you need for your scuba equipment independently of your body. When you know how much weight you need for the scuba equipment, and your cylinder at reserve pressure add these two numbers together and you will know the total weight you need in the water.

4 Keys to Mastering Your Diving

The [video below shows how to perform a proper buoyancy check](#).



Keep in mind that all cylinders will undergo a change in their buoyancy characteristics during a dive as the gas that is contained inside of them is breathed. This means that you will always start the dive more negative, or sinking if you have no air in your BCD, then as the dive progresses. You will become more positively buoyant as the tank becomes lighter because of the gas being breathed from it. The cylinder will be lighter at the end of the dive because it has less gas in it, and you will be more positively buoyant. If you performed the buoyancy check correctly, you will still not float. You should never feel yourself floating to the surface if all of the air in your BCD is empty. The key is to have the bare minimum amount of weight needed to stay underwater.

Once you have determined the correct amount of weight needed to be properly balanced in the water adjust your weight belt, detachable weights, or whatever ballast system your scuba gear uses.

The goal of being properly weighted is to end your dive, with no air in your BCD and be either neutrally buoyant, or just slightly negative. This of course, is done with the

4 Keys to Mastering Your Diving

reserve amount of gas left in your cylinder. It's ok if you are slightly negative by 1 or 2 pounds (1/2 kg to 1 kg). This is not a big deal, but anything more than this amount is totally wasteful and potentially dangerous. After doing the buoyancy check, you may need to fine tune the weight you need at the end of the dive. The buoyancy check will get you very close to your final weight.

Because of the air in your tank, you will probably start your Dives slightly negative, that's to say, if you put no air in your BCD you will probably sink. This is why you have a BCD and will need to put some air your bladder. You will always rise and sink slightly as you inhale and exhale.

At this point being neutral in the water will be much easier. Getting your weighting down right is the first and most important step to mastering your buoyancy.

You should strive to always be neutral and in a horizontal position in the water column. While there are many tips I can give you to help with this, the number one thing you can do is to practice!

Dive as often as possible and whenever possible stop kicking and make sure you are staying neutral solely because of the air in your BCD and not because you are kicking to stay where you want to be.

You probably learned this in your entry level course, but when you add air, make sure you do so in small increments. Wait until you breathe at least a couple of times before making any further adjustments. Doing this and being properly weighted will go a long way.

4 Keys to Mastering Your Diving



Key # 3 Swimming like fish (How to move efficiently in the water)

Now that we have you confident, feeling at home in the water, and neutral so that you are neither sinking nor floating, we can now work on getting you to move like a fish. After all it's a big world down there, and if you want to see it all you're going to have to move.

The first thing to know about moving underwater is that it should all take place with only your feet. **Your hands are incredibly inefficient at moving you around with all the bulky scuba equipment on you.** Therefore, your hands should be either by your side, crossed, or anywhere you'd like as long as they are not moving around to propel you in the water.

It was important that we got you neutrally buoyant first, because one of the most important factors in moving efficiently in the water is your body position. If you are overweighted and needing to kick to stay off the floor then moving efficiently is nearly impossible.

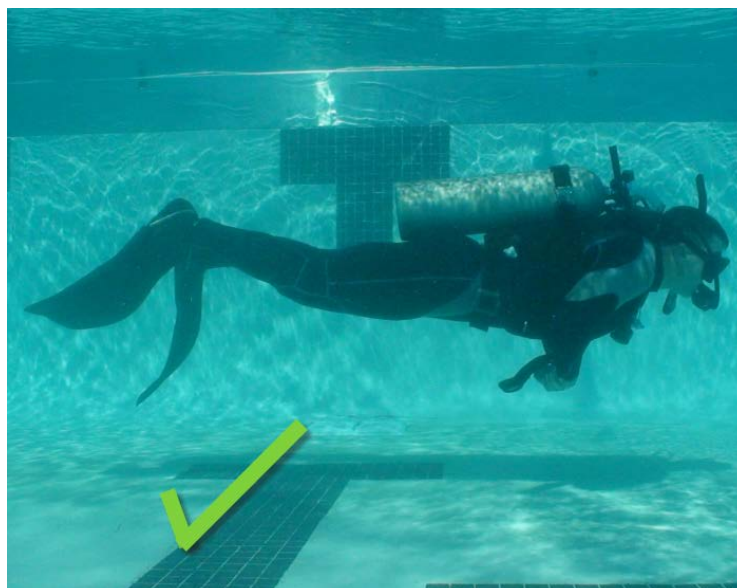
Water, because it is so much more dense than air, creates a lot of drag for you underwater. Our objective is to minimize this drag. For this reason a horizontal position, is the most efficient. Look at the illustration below and notice that for a diver wanting to

4 Keys to Mastering Your Diving

move forward. If his body is not horizontal, he will encounter a lot more resistance than if he keeps his body in a horizontal position. Additionally the water that is being thrust away from the fins is being thrust in a downward motion if he is not horizontal. This means that if the diver is over sand or silt the water being thrust behind him will most likely lift the silt and make reduce the visibility in the water.



So the first thing for any kicking technique we want to use is to get our bodies horizontal. The illustration below shows how your body position should look in the water in order to move efficiently. For some people getting into this position takes some practice. This is because we are used to moving and seeing the world in a vertical position. For most of us it's natural to want to be vertical. This is a bad habit when it comes to diving.



4 Keys to Mastering Your Diving

Once we are in a horizontal position there are two primary kicks with two very different purposes that we can use. They are the flutter kick, and the frog kick.

The flutter kick is the kick that most people go to naturally when they first start diving. This kick is similar to how a freestyle swimmer moves his or her feet, only with fins on of course. The flutter kick resembles a scissor action with the feet where each foot is moved in front of the diver, and then back similar to a walking motion.

Each kick has a specific purpose in diving. Each kick also will consume a certain amount of gas. In general the flutter kick is the kick which takes the most amount of energy and therefore it is the kick which will cause you to breathe the heaviest. The flutter kick is your power kick. This is the kick you use to move rapidly, or against strong current. It is the kick that allows you to move with the most force in the water. It is also the kick, which because it moves so much water, and because there is really no rest phase in the kick, will consume the most gas. The flutter kick is best used when you either need to move quickly, or against a strong current. In the [video below you can see how to do an efficient flutter kick](#).



4 Keys to Mastering Your Diving

The frog kick is the kick which is best used for most of the diving we do. The frog kick resembles the kick a breaststroke swimmer uses. If you have ever seen a frog moving in the water, you'll know why this kick is named after our amphibian friend. What makes the frog kick the best kick for most of our diving is that it has a rest phase built in. In other words after kicking there is a recovery phase, where you just glide, move forward without effort while preparing to kick once more. For most people this kick will consume less gas. This is also a great kick because many times the glide phase of the kick can be prolonged, as you just hover and checkout the reef, or whatever you are looking at, and then kick again to move forward once more. In the [video below you can see how to perform an efficient frog kick](#).



Once you have mastered the frog and the flutter kick, you will have your cruising speed kick, and your power kick. These two kicks can also be alternated if you happen to get cramped or feel your muscles getting too tired with just the frog kick. If this is the case however, you should probably practice some more in the pool and condition your muscles to doing this kick.

4 Keys to Mastering Your Diving

Key # 4 Applying the lessons from this book

Once you have become proficient at comfort, buoyancy, and kicking technique it is time to apply the lessons learned. I cannot stress enough how important it is to actually dive and to dive as often as possible! Not just to dive, but to dive with intent. What I mean by that is to intend to make every dive better from a performance perspective than the dive before. At first this may mean focusing on the buoyancy and kicking techniques outlined in this book. Or practicing the comfort skills outlined earlier. The key is to practice and work on mastery of the skills on every dive.

Once you have some experience and you are becoming proficient you will want to branch out beyond the lessons in this book. You may want to actually measure and keep track of your breathing rate, or RMV (residual per minute volume). This way you will know if you are making progress. You may also want to measure differences in different scuba gear configurations and exposure protection.

Another way to improve your performance is to have a video of yourself made. A real eye opener is when you see yourself on video. Video analysis of your kicking technique and body position in the water is one of the most effective teaching tools I am aware of. A simple camera like the [GoPro HD Hero 2](#), or a housing for a camera you already own can help. You will be able to see any mistakes you might be making with your body position and kicking in the water. It's also a cool way to show your friends and family your diving exploits.



4 Keys to Mastering Your Diving

If diving isn't an option because of the weather or geographic constraints, then, as mentioned before try to get to a swimming pool or query. Being underwater in any body of water is better than not being underwater at all.

Look for and dive with people who have more experience, and that are proficient underwater. I am incredibly thankful to many friends I have made over the years that have given me pointers and tips on how to improve my diving. Just as in any sport you will never be perfect, but if you dive consistently and always strive to improve, you can become Great!

Take a class! There are so many diving specialties as well as classes within the training progression that it simply makes sense to take classes to improve both your knowledge and skill in diving. Don't however, take a class just to take the next class. Choose something that interests you, take the class, then master what was taught in the class. I have seen students from time to time who take classes as if to collect certification cards. The cards are just a piece of plastic that let others know you completed a course. True mastery is measured by your technique in the water, knowledge, and execution of the skills taught.

Practice the skills you are taught! As mentioned earlier, often we learn skills in our classes, as an example, alternate air source breathing, which because it is not used on every dive we rarely if ever practice. Practicing skills like this in a controlled environment (swimming pool or other confined water under the supervision of a qualified dive leader) is an excellent idea because it keeps your skills sharp and current, as well as provides the confidence to know that if you ever need your skills you will know what to do.

Finally share your knowledge and experience! Diving is a social sport. We dive with friends. We make friends often on the dive boats and over meals and drinks after the dive. If you have tips or ideas for how others can get better at diving let us know! Make sure you "like" and follow me on [Facebook](#). If you have a question, or comment post it on my wall. Also read up on my blog. As I too learn, and am asked questions, I will continue to grow my blog with useful information. Finally if you have a friend who dives, let them know about this book. They too can download their free version at greatdivers.com. This way they too can contribute and help grow our community.

Thank you for giving me the opportunity to grow your knowledge of diving by taking the time to read this book. I hope to see you in the water!

Jose Cernuda

4 Keys to Mastering Your Diving

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