



Atlanta Underwater Explorers

AUE Bubbles

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Training Tips: Proper Weighting When Diving

By Marcus Knight



"An object placed in a liquid will be buoyed up by a force equal to the weight of the liquid it displaces."

Achieving proper weighting when diving is one of the key aspects of being a proficient and capable scuba diver.

The art of buoyancy control stems from proper weighting when diving. During your open-water course, you learn the basics of proper weighting when diving in confined water or a swimming pool. Moving to open water during those training dives, your instructor may have helped you find a starting point for your weight so that you could comfortably leave the surface without being severely over-weighted.

As you progress, dialing in your ideal weighting when diving is a constant process of trial, experimentation and recording what works best for you. Here are a few tips to help you find the right weight for you.

Why is proper weighting when diving important?

Proper weighting when diving is the foundation of good buoyancy. The correct weight helps you make smooth descents and ascents. It allows you to comfortably hold position during safety stops. Carrying less weight, and therefore having less drag, also means your gas consumption (or SAC rate) should go down. And, as your overall scuba technique improves, correct weighting helps you [achieve better trim](#) in the water. This in turn helps you [fin and maneuver smoothly](#).

The science behind correct weighting

To understand correct weighting and achieve neutral buoyancy, you must understand the underlying science: Archimedes' Principle.

Training Tips: Proper Weighting When Diving – Cont.

Archimedes stated that “An object placed in a liquid will be buoyed up by a force equal to the weight of the liquid it displaces.”

Buoyancy characteristics depend on the object’s density, i.e., its weight divided by its volume. For example, an object is extremely dense if it weighs a (relatively) great deal without displacing a lot of water, such as a pebble or coin.

This principle applies directly to you as the diver, in combination with your diving equipment. For example, a very slim diver with low body fat in just a rash vest and board shorts will require less weight to dive than a larger person wearing a more buoyant drysuit. However, change the weight/volume ratio by, for example, giving the drysuit diver twin tanks, and they will need to carry less weight on their belt. Because of the tanks, the weight has increased proportionately greater than the volume.

Where do I start?

Check your logbook. If you were diligent during your initial training, you should have noted the style and thickness of your exposure suit and how much weight you were carrying. This information will give you a starting point as to how much lead to carry.

1. If you’re not sure what you were carrying during your training, or if you’ve changed your diving environment, your exposure suit, or your body weight, some basic weighting guidelines may help. These are very much *guidelines* on how much weight to add based on your exposure protection. You may find that, when tested in-water, you are either slightly over (or under) weighted. **Swimsuit or dive skin:** 1-4 pounds (1 to 2 kg)
2. **3mm wetsuits:** 5 percent of your body weight
3. **5mm wetsuits:** 10 percent of your body weight
4. **7mm wetsuits:** 10 percent of your body weight plus 3 to 5 pounds (1 to 3 kg)
5. **Crushed neoprene drysuit*:** 10 percent of your body weight plus 3 to 5 pounds (1 to 3 kg)
6. **Trilaminate drysuit*:** 10 percent of your body weight plus 3 to 5 pounds (1 to 3 kg)

**Based on thin/lightweight under suit base-layers. Thicker base-layers will require more weight.*

For example, a 165-pound (75 kg) man wearing a 3mm full-length wetsuit may find a good starting weight as follows:

165 pounds (75 kg) x 5% = 7 to 8 pounds (3 to 4 kg)

Where possible, distribute your starting weight evenly for best trim. If you’re using a belt, position your weight on your hips and slightly forward on your body. Many BCDs have weight-integrated pockets where you can evenly distribute the weight. Taking a [Peak Buoyancy](#) course will help you understand correct trim and buoyancy as well.

Do a buoyancy check

Having made your best estimate of the correct weighting, it’s time to get in the water. To make a buoyancy check at the surface, follow a few steps:

- Ensure your mask is on and your primary regulator is in your mouth.
- Take a normal inhalation – not a maximum inhalation but a normal, deep breath.
- Completely deflate your BCD, keeping the low-pressure inflator hose in your hand to see if you are over-weighted and you begin to sink unexpectedly fast. If wearing a drysuit, vent your suit completely at the surface before beginning this procedure. When checking, keep the exhaust valve at the highest point and the opposing arm pointing down.
- If you’re properly weighted, you should hover with the water’s surface at or slightly above eye level, with your forehead brushing the surface.
- Demonstrate negative buoyancy by sinking past eye level as you exhale.
- If you can easily descend when exhaling, fin back to the surface and establish positive buoyancy. Reduce your weight and repeat the exercise until you’re *just* able to leave the surface gently when exhaling.
- If you remain positively buoyant, add a small amount of weight and repeat the exercise.

Ideally, you would do your weight check with a cylinder at ending pressure of 700 psi (50 bar). If you’re conducting your weight check with a full cylinder of 3000 psi (200 bar), add approximately 5 pounds (2 kg) for the air you’ll consume during the dive.

Training Tips: Proper Weighting When Diving – Cont.

Consider your cylinder

Consider the size and construction of your cylinder before calculating your weight. An aluminum cylinder is more buoyant than the equivalent steel cylinder by approximately 3 to 5 pounds (2 to 4 kg).

Remember to make this adjustment before entering the water.

Finally, once you've found your ideal weight with the equipment and exposure suit you're wearing, write it down. Record each combination as you change gear and environments. While you should always check your buoyancy when moving to a new environment or you've not dived in a while, you'll know what works as a reasonable starting weighting.

Dialing in your proper weighting when diving is a foundational skill. Test and record your weight in each new diving environment – you'll have safer, happier and more comfortable dives.

Details: <http://scubadiverlife.com/training-tips-proper-weighting-diving/>

5 Reasons Why You Should Buy Your Own Dive Equipment



images/2016/09/istock_13969847_web.jpg?itok=0s44udiZ&fc=80,47

1. Cleanliness

Wouldn't it be more comforting to know you are the only person who has put your face in a mask, mouth on a regulator and body in a wetsuit? Maybe these things don't concern you, but knowing that your gear is clean because you are the only one using it tops our list for why you should buy your own scuba gear.

2. Maintenance

The bottom line is if you own it, you know when it's been serviced. This can give you confidence while diving that everything will work the way it should.

3. Fit

Much of your scuba diving experience stems from how comfortable you are in the water. This starts with your gear. When gear fits properly it makes for an even better dive. The last thing you should have to worry about is a fin feeling loose or mask leaking.

4. Familiarity

Don't waste time learning how to use a different brand or style of BC on every dive vacation. If you're familiar with your gear, you will be in the water quicker and there will be no question of how fast you can kick in those fins to catch up with the whale shark gliding by.

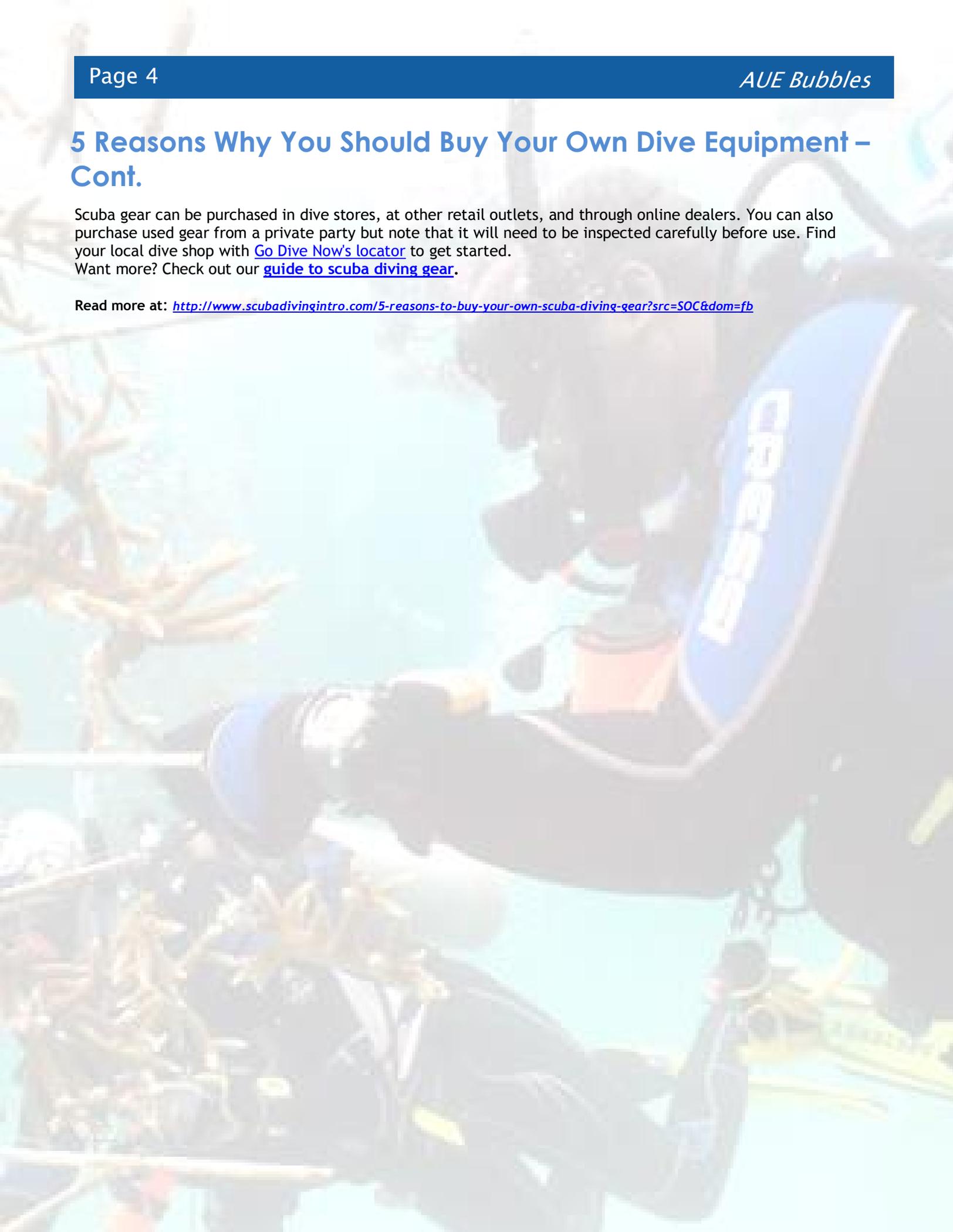
5. Long-term Cost

Sure, renting may be easier on your wallet in the beginning. But in time, rental costs can add up and you may have been better off purchasing your gear to begin with. If you are unable to buy a full kit all at once, we suggest saving up and buying a new piece of gear when you have the spare change. Maybe start by purchasing a BC or a wetsuit, and save up for that dive computer (assuming you have already purchased your mask, fin and snorkel during your certification course.)

5 Reasons Why You Should Buy Your Own Dive Equipment – Cont.

Scuba gear can be purchased in dive stores, at other retail outlets, and through online dealers. You can also purchase used gear from a private party but note that it will need to be inspected carefully before use. Find your local dive shop with [Go Dive Now's locator](#) to get started. Want more? Check out our [guide to scuba diving gear](#).

Read more at: <http://www.scubadivingintro.com/5-reasons-to-buy-your-own-scuba-diving-gear?src=SOC&dom=fb>



Upcoming AUE Activities

- *AUE General Meeting - Saturday July 15, 2017*
Location: 1463 Prior Rd SW, Atlanta, GA
Meeting time is 3:00 p.m. every 3rd Saturday of each month.
- *DWP-Coral Reef Program just announced, July 27th - July 30, 2017.* We will be out-planting the coral from our adopted tree and will also be participating in the second Coralpooloza event. Event details are in the registration packet new available on the www.divingwithapurpose.org website.
- *AUE Annual Cookout during August 2017 - Date & Location TBA*
- *AUE Annual Panama City Beach Dive - Late September 2017 - Date TBA*
- *DWP-Coral Reef Program just announced, July 27th - July 30, 2017.* We will be out-planting the coral from our adopted tree and will also be participating in the second Coralpooloza event. Event details are in the registration

Recent AUE Activities

- *AUE Member training session for youth diver Tyrese Evelyn at Pelham Blue Water Park Saturday July 1st and Sunday July 2, 2017.* Participants included members of Youth Diving With A Purpose, Gerald Jones, Dive Instructor and AUE members Elleen Yancey, Alex Adams & Chris Searles. Tyrese is in training to acquire the skills to become a scientific diver.
- *Conasauga River Snorkel Trip + Brief AUE Club Meeting - June 17, 2017*
- *DWP XIII Underwater Archeology Program Sunday June 4th thru June 10, 2017 - Key Largo, FL*

Announcements/News

Club News Update: AUE Member Chris Searles featured on *Diving with a Purpose (DWP)* press release. Recent release has been posted to AUE's website. Congratulations to Chris
<http://www.diveaue.org/newsletters/Chris%20PR5.pdf>

Congratulations to Ken Stewart on the grant of \$50,000 for the DWP proposal announced by NPS. The funding for the National Maritime Heritage Grants Program has come through you efforts and others in the maritime heritage community by supporting advocacy efforts with Congress. The law was changed in December 2016 to restore and secure the grants program going forward. Time to celebrate!

Announcement: There are local diving opportunities: Blue Water Park (Two hours from Atlanta, GA) Pelham, Alabama 35124 205.663.7428 || 205.822.212
More information at: bluewaterparkal@gmail.com or www.bluewaterparkal.com

The Georgia Dive Quarry (One hour from Atlanta, GA) White, Georgia 30184
Quarry Number: (404) 285-8600 x200
<https://www.divegeorgia.com/dive-georgia-open-water-quarry/>



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Editor's Corner

Fellow AUE Members:

Welcome to the July 15, 2017 edition of *AUE Bubbles* newsletter. The edition is focused on dive equipment and related issues.

Want to learn more? You can find us on the web at www.diveaue.org, or on Facebook at <https://www.facebook.com/groups/ATLANTAUNDERWATEREXPLORERS> and via *AUE Bubbles* newsletter.

Story ideas are always welcomed. Completed story submissions must be received one week prior to the publishing date (Bi-monthly on the 15th of the month). The next edition will be published September 15, 2017.

Please submit future story ideas and comments to my attention via email.

Dive safely,

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