

Paradise Dive Club

Volume 18, Issue 05

May 2009



President's Log

The Common Good

Michael Ring
President

Webster's online dictionary defines "community" as a unified body of individuals; people with common interests living in a particular area. That seems fitting when thinking about both our Dive Club and the Santa Barbara area. We live in a true community here. This has been exemplified by the response to our recent fires, and how they have affected us all.

As a Dive Club, it is not part of the normal curriculum to be focused on charity work. We are more of a social group than anything else. But, with that said, it is not difficult for each of us to look into our selves and find a way that we can help others. Since diving is a buddy-oriented activity, it should be easy for us as individuals to reach out and help others.

This city seems to respond in ways that never cease to amaze when difficulties present themselves. Tragedy brings out the best in us. Whether it is the homes lost to the Tea and Jesusita Fires, or needs of others less fortunate than we, our community responds. I am very

proud of what we did as a Club to raise funds to donate to the Burn Fund for Lance and Carla Hoffman, or the group effort that we make to participate in the beach clean-ups each year. We as a group seem to know how lucky we are to live here in SB, and help where it is needed.

As a community, Santa Barbara has many notables who take active roles in making this place better. We are graced with movie stars and musicians galore who not only live here, but participate. The Douglas family has put in seemingly limitless funds to preserve our parks. Kenny Loggins has performed many, many times to aid both victims of loss and local schools. David Crosby has brought in other musicians to aid ailing schools. Jeff Bridges and others put on a benefit concert to assist the victims of the La Conchita landslide. The list goes on and on.

We all do our parts to help. But we can all do more. Whether it be by volunteering time at one of the rescue centers to feed the homeless on winter nights, or donating to local charities, it is part of our duty as members of this community to do what we can to give back. To help make things better for all of us.

As a Club I think that we need to take time periodically and think about how we can serve our fellow citizens in a way that will not just provide us with a feeling of doing civic service, but will actually enrich the lives of those we help. It can be a simple act, such as taking that leftover meal from a restaurant dinner and giving it to a hungry person on State Street. Or going through your closets and taking the items that you no longer use and dropping them off at a thrift store. Little things do make a difference. And when added collectively they make an impact that is felt.

We will also provide an example to our children for living their lives in the future. Showing by acts, not just words, that you care about the world you live in. If we instill in our young ones the concept that giving back to the community is a normal part of life, then they will follow our lead and be active in their futures to help make the world a better place. They will pay it forward and teach their children as well. Altruism is contagious. It is something we all should be stricken with. ■

INSIDE THIS ISSUE

- 1 President's Log
- 2 Ask Dr. Deco
- 3 Dear Crabby
- 4 Calendar

Dr. Deco

Dear Dr. Deco,

I was wondering, when I dive to 99ft my air goes way faster than when I am on the surface. Why can't I just breathe more slowly at depth to compensate?

Sincerely,
Heavy Breather

Dear HB,

As you learned in your open water class, each 33 ft of sea water increases the pressure by 1atm. Therefore the pressure at 33ft is 2 atm, at 66 ft it is 3 atm, and at 99 ft it is 4 atm. From Boyle's law, you know that when you breathe gas at 4atm, each lungful of air has 4x as many gas molecules as on the surface, so your tank goes 4x as fast. Along similar lines, the partial pressure of oxygen in air on the surface is 0.21atm, whereas at 99 ft the partial pressure is: $4 \times 0.21\text{atm} = 0.84\text{atm}$.

You might think that with that much oxygen in your lungs, you could breathe 4x as slow and still get as much O₂ as you need to keep your body running... but you would be wrong. First, the breathing reflex is triggered not by blood oxygen. As your body metabolizes oxygen, carbon dioxide builds up in your blood. The CO₂ causes your blood to become slightly acidic. A sensor in the back of your brain detects the acidification and signals the urge to breathe.

Since your metabolism is unaffected by depth, your breathing reflex is essentially unaffected and your breathing rate stays constant. The second point is that although you are exposed to a much higher partial pressure of oxygen, your blood oxygen level actually changes very little. The reason is that at the surface roughly 97.5% of the oxygen in your body is chemically bound to hemoglobin in your red blood cells. Only 2.5% is carried in solution in the blood plasma. As you descend, the increased ppO₂ rapidly causes the hemoglobin to saturate at 100%. The amount dissolved in the plasma increases as well (Henry's Law).

However since the dissolved gas starts out as such a small fraction of the total oxygen carried, it remains a small fraction of the oxygen carried until you get really deep. Of course the story changes if you dive Nitrox or use O₂ for decompression, but that will have to wait for another column.

Dear Dr. Deco,

I have been diving in the Caribbean for years and I consider myself a relatively advanced diver. I can glide over coral reefs with barely a fin flick. I can hang motionless in the water without thinking. I recently moved to Santa Barbara and decided to get into cold water diving. I rented some gear and headed out to the Channel Islands. It was a beautiful day with no current or surge. The problem was that I felt like a complete newbie! I think there must have been something wrong with my BCD because my buoyancy was all over the map. I was either sinking to the bottom or rocketing to the surface. I couldn't stay still. The shop checked out the gear when I got back, but said it was working fine. What is going on?!?!?

Sincerely,
Ad Van Cediver

Dear AVC,

Not all diving is the same! The buoyancy skills that you honed during years of Caribbean diving need to be retuned for cold water. First you need to check that you are properly weighted. It takes a few dives in cold water to get your weighting perfect. If it is your first time diving in cold water and you have rental gear, the chances are that the dive shop erred slightly on the heavy side. If you are a little heavy, you can still dive, but if you are light you won't be able to hold your safety stop.

But there is a bigger concept here. Buoyancy control is intrinsically more difficult in cold water than it is in the tropics, even if you have your weighting perfect. Here is why. Consider what happens if you are *neutrally* buoyant at some depth. This means that the buoyancy from your wetsuit (or drysuit) and BCD is balanced by the weight of your gear. Now imagine what happens when you move up by a little bit. The air in your exposure suit and BCD *expands* and become *more* buoyant, whereas the gear weight doesn't change. This means that you are no longer *neutral* and you start accelerating upwards. The more you move up, the bigger the effect. Unless you take immediate action to adjust your buoyancy, this positive feedback rapidly gets out of control. For small changes you can correct your buoyancy simply by modulating your breathing; for bigger changes you need to let air out of your BCD. The same thing happens when if you move down, but in this case the air compresses, becomes *less* buoyant, and you start heading for the bottom. So the term *neutral* buoyancy is really a misnomer since it is intrinsically

unstable. Most of learning how to dive is simply how to recognize that this is happening and automatically correct for it. It is much like learning to ride a bike. The first time you get on, learning to balance seems impossible, but after a while it becomes second nature.

The final kicker is what I alluded to at the beginning of the letter. Buoyancy control is much harder in cold water than it is in tropical water. This is because that nice thick wetsuit (or drysuit) that keeps you warm does so by trapping a lot of air. The more air in your rig, the more unstable the *neutral* equilibrium is. That is why you want to get your weighting spot on. If you carry a few extra pounds of lead, you will need to offset this with extra air in your BCD, and your buoyancy control will be that much harder. Of course the best advice is to dive a lot. After a while buoyancy control will become second nature.

This column is for entertainment and general education only. It is not intended as a substitute for formal training or medical advice from a professional. Send your questions for Dr. Deco to webmaster@paradisediveclub.org



Dear Crabby:

Where has the time gone? I am an avid diver but I find that I just cannot make the time to get into the water these days. What with the kids clamoring for attention and my boss on me to be more productive, I don't know what to do to get down under. Any ideas?

-Drying out.

Dear Drying:

Boy can I sympathize with you there. It seems that the more I want to dive, the longer I go between adventures. I suggest you join Paradise Dive Club of Santa Barbara and see if they can get you off the beach. Someone might even take your kids off your hands for a weekend. Not!



Dear Crabby:

Every year my family and I go on vacation to some exotic site. This year we are stumped as to where to go,

CALENDAR OF EVENTS

MONTHLY MEETING

WHEN & WHERE: TUESDAY JUNE 30TH, 6:30 AT PETRINI'S

BOARD MEETING

WHEN & WHERE: TUESDAY JUNE 2ND, 7:00 AT NOAH'S

MONTHLY DECOMPRESSION STOP

WHEN & WHERE: FRIDAY JUNE 5, 5:30 AT ENDLESS SUMMER CAFÉ
CLUB BBQ

WHEN & WHERE: SATURDAY JUNE 13TH, AT HENDRY'S BEACH
ARRIVE AT 9AM, DIVE AT 10AM AND EAT AT NOON

THE EVENT INCLUDES A SCUBA SWAP MEET

FIN DAY

WHEN & WHERE: JULY 11TH AT AQUATICS

ALL ATTENDEES BRING THEIR FINS FOR OTHERS TO TRY AND WE'LL HAVE IT ALONG WITH A FORCE FIN PARTY WITH BOB EVANS,
BEACH CLEANUP

WHEN & WHERE: SEPTEMBER 19TH, WE'LL HAVE OUR TAJIGUAS
BEACH CLEANUP

as the money is tight and travel expenses are difficult to cover. Do you have any suggestions?

-Lost Wanderer

Dear Wanderer:

Hmmm. Somewhere exotic, not expensive to get to and fun. Wait a minute – how about Refugio State Beach. It is close, fun and cheap. Ok, maybe it's not exotic, but hey, it is close and pretty cool.



Dear Crabby:

I am looking for a mate, and need to be sure she is into diving. I have looked in the want-ads but do not find anyone of interest there. Is there a place where the hot dive chicks hang out that you can recommend?

-Fishing Around

Dear Fishing:

Well, if you really want to meet someone who is the whole package, you should come to the Deco Stop for the Paradise Dive Club of Santa Barbara on June 5 at the Endless Summer Café. Join in. We could use a real grouper!

PDC Thursday Night Dives!

To find out where the group will be diving, or to be added to the night dive e-mail list, sign up at http://groups.yahoo.com/group/PDC_midweek_dive, or send e-mail to PDC_midweek_dive-subscribe@yahoogroups.com

Membership

\$25/year for individuals, \$40 for families. Membership runs May-April and includes a monthly newsletter, free air-fills, and other benefits. For details or to join, contact Noah Philips at:
membership@paradisediveclub.org.

Newsletter

Send newsletter items to Stuart Ponder at:
webmaster@paradisediveclub.org

Website

www.paradisediveclub.org

Join the Coolest Club in Town!

1. Monthly meetings with entertainment.
2. Raffle prizes (we all need new dive stuff)
3. Great dive buddy pool
4. Beach and boat dives, AND weekly night dives
5. Club BBQs, and other activities
6. Free air-fills and gear discounts at local dive shops
7. Right to proudly wear the official PDC T-Shirt (nobody has a logo as cool as ours).

Dive Club Officers

President	Michael Ring	info@paradisediveclub.org
Vice President	Geof McFarland	
Treasurer	Mark Silva	
Secretary	Akiles Ceron	
Membership	Noah Philips	membership@paradisediveclub.org
Newsletter	Stuart Ponder	webmaster@paradisediveclub.org
Circulation	Jim Axtell	
Entertainment	Steve Trainoff	



PO Box 21311
Santa Barbara, CA 93121

Sponsors!

Aquatics

5822 Hollister Ave
Goleta, Ca 93117
805!967!4456

Blue Water Hunter

117!D Harbor Way
Santa Barbara, Ca 93109
805!564!6677

Truth Aquatics

301 W. Cabrillo Blvd.
Santa Barbara, CA 93101
805!962!1127

Anacapa Dive Center

22 Anacapa St
Santa Barbara, CA 93101
805!963!8917

Many thanks to our sponsors for their generosity including air!fill donations and gear discounts!

Meeting Place

The June 30th meeting will take place at
Petrini's Restaurant in Santa Barbara.
14 West Calle Laureles.

Feeding frenzy at 6:30pm, meeting at 7pm