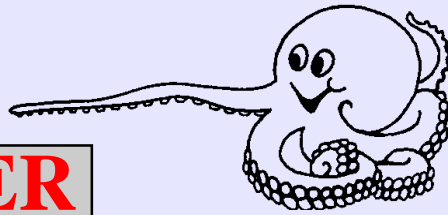


# THE REEF SEEKER



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December - 2018

## A BENDS TALE

And not Mercedes . . .

One of our longtime divers suffered a skin bends hit mid-November. The good news is that he's fully recovered. He's also given us permission to relay to you some of the details of the diving and what our thoughts are about this. (Even though he's posted about this on the Internet, I'm omitting his name.)

The short version - and this is the part you should take to heart - is that there's nothing that he did that is obviously "wrong." I have never been a fan of the term "undeserved hit" (because I think there's always something underlying - just sometimes we don't find it) but I prefer the term "unpredicted hit" and this would certainly be that.

It's also a reminder that computers are nothing more than mathematical models that may or may not pertain to your particular body physiology on a given day. Just because your computer says that you're within limits, that doesn't mean your body agrees. There are plenty of examples of people who get bent when they "shouldn't" have been bent, and multiple examples of two people diving together on identical profiles where one gets bent and the other doesn't. We know some about how the body

deals with excess nitrogen but there's a lot we don't know too.

The dives in question were on a two-day trip to San Miguel Island. Diving conditions were great with flat seas, minimal surge and current, decent viz, and lots to see. Because the conditions were so good, all the diving was done on offshore pinnacles, which meant the dives were deeper than he might normally be doing.

Our diver was wearing a dry suit, so hypothermia doesn't seem to factor in. He also says he was staying hydrated throughout, didn't do any fast ascents, did a safety stop at the end of each dive, and only one time came within 3-minutes of an NDL (based on the computer parameters he had selected). Diving was done on nitrox, with the mixes being 28-31%. He analyzed his tank before each dive and set/adjusted his computer to the correct nitrox mix for each dive.

Just to be clear about diving on nitrox, diving air to air-table limits versus diving nitrox to nitrox-table limits, there's really no difference. Saturated is saturated. (To be more accurate, the term should be "critical supersaturation" but I'm keeping this simple.) It just that it will take a little longer on the nitrox tables than it would on the air tables. But an NDL is pretty much an NDL. So if your initial

thought is, "Well, he should have been safer on nitrox because it's harder to get bent on nitrox," that's simply not true when you're diving nitrox to nitrox limits. Different ballgame if you set your computer to read LESS nitrogen than your actual mix but that wasn't the case here.

When looking over the profiles, we both agree (he now in hindsight) that you could consider these "aggressive" profiles. In other words, fairly deep for a fairly long amount of time. He did the eight dives he did (5 on Day 1, and 3 on Day 2). The format is depth/time - surface interval:

- #1 - 89/41 - 1:19
- #2 - 92/49 - 1:24
- #3 - 78/45 - 1:35
- #4 - 77/36 - 1:45
- #5 - 57/34 - 14:31 (overnight)
- #6 - 102/38 - 1:54
- #7 - 115/39 - 1:35
- #8 - 81/43 (last dive)

And lest anyone point at dives #2 and #7 and say, "Reverse profile," there's no evidence that reverse profiles (and these are pretty minor) increase your chances of getting bent. Old wives tale.

Our diver felt fine after the dives and drove home Sunday evening. He felt fine Monday morning and had a normal day at work. Monday evening around 10PM when he

was getting ready for bed, he noticed what appeared to be bruising and reddish-brown splotches across his upper arms, shoulder, and top of his back.



One other important thing to note is that he had absolutely no other symptoms. No tingling, no aches, no dizziness, nada, felt fine. He says it's certainly possible the blotchiness was there long before Monday evening and he simply didn't notice it. He decided, absent any other symptoms, to go to sleep and see how he felt in the morning.

When he woke up Tuesday, the blotches were still there so he called DAN (919/684-9111) and, after chatting with them for a while, they suggested he go to UCLA for further evaluation. He did and was eventually treated three times, once Tuesday on a U.S. Navy Table 5, and then twice on Wednesday, both times on a U.S. Navy Table 9, which is one of the protocols used to treat residual symptoms. When I last talked to him at the end of the week, the blotches had almost fully resolved so it appears no further treatments will be needed.

What caused this to happen? No one really knows, so everything that follows is pure conjecture.

My best guess would be that since these were mostly fairly deep dives and relatively long - the shortest was 34 minutes and the longest

was 49 minutes - that the answer lies somewhere in there. And while he did 3-minute safety stops (and he says even a bit longer because if he was on the anchor line, he'd then swim at 15' to the stern), would longer stops have been better?

It's important for you as a diver to understand the important role safety stops play. You'd like all dives to be "no bubble" dives, in other words that they produce no (or minimal) bubbles running around inside of you. Nitrogen bubbles coming out of solution and forming in your tissues or lodging in your bloodstream, as you hopefully know, is what causes the bends. But "silent" or asymptomatic bubbles are a real thing. These are bubbles formed after a dive, but which in and of themselves, don't give symptoms of the bends. And the reality is that most dives produce some of these silent/asymptomatic bubbles. The presence of these bubbles on a repetitive dive may increase your risk of decompression sickness.

This is where a safety stop comes in. Way back in 1992, at a UHMS conference at UCLA, Andy Pilmanis (first Director of the Cat-

alina Chamber and working with the USAF at the time) said that - in very loose terms - a 3-minute safety stop at 15' eliminated a significant number of the silent/symptomatic bubbles. And this is one reason that the training agencies all adopted, around that time, the idea of a safety stop. (It also forced divers to halt their ascents, which were generally way too rapid without the stop.)

The point of this extended discussion about safety stops is that if 3 minutes at 15 feet is good, perhaps 5 minutes or 7 minutes would be even better. I don't know if this would have prevented our diver's problem or not.

But the general thought is that if you are doing dives that are pushing the envelop or which you think would qualify as aggressive dives, perhaps it would be a good idea for you to extend your safety stop at the end of the dive in case you've got more of those silent bubbles running around than one would think or like. In other words, if you're increasing your bends risk on the front end, perhaps do some things on the back end to lessen the risk and hopefully balance things out. That could also take the

## 2019 DIVING VACATIONS

**January 5-13 • Easter Island**

**March 11-24 • Yap**

**Mid-May • Bonaire**

**July 6-22 • Indonesia**

form of longer surface intervals &/or skipping a dive.

Unfortunately, there's no way to know for sure. Bends is pass/fail. It's like being pregnant. Either you isn't, or you is. There's no middle ground.

Other than being told to take six weeks off before going back in the water, our diver seems fine and is eager to share his story and experience with others so that they (you) may benefit from what happened to him and hopefully can avoid the same thing. If you have questions, let me know. I'm a huge fan of the thought that knowledge is power and have always believed that a smarter diver is a safer diver.



## IT'S YAP-PENING AGAIN . . .

The "Yap Immersion" that is. It's a really great way to "immerse" yourself in one of our favorite places in the world to dive. This will be the fourth iteration of this and it's a combination of diving, touring, workshops, and fun using Manta Ray Bay Resort & Yap Divers as our home base.

Rather than doing a "standard" one-week trip, this is actually two weeks long (March 11-24) and involves 11 days of diving, touring, and experiencing all that Yap waters and the Yapese culture have to offer. New for this one is the timing. In the past we've done this so

## UPCOMING LOCAL DIVES & CLASSES

DAY	DATE	BOAT/SITE	PLANNED DESTINATION	PRICE
Sat.	Dec. 1	Redondo	Navigation dive (single tank)	<b>\$25</b>
Sat.	8	Catalina Express	Avalon U/W Park (3 dives)	<b>\$150</b>
Thu.	13	Redondo	••• Squid Dive (night) •••	<b>FREE!!!</b>
Thu.	20	- CLASS -	- FISH ID -	<b>\$25</b>
Thu.	Jan. 17	Redondo	••• Squid Dive (night) •••	<b>FREE!!!</b>
Wed.	23	- CLASS -	- PHOTO WORKSHOP -	<b>\$25</b>
Sat.	26	Catalina Express	Avalon U/W Park (3 dives)	<b>\$150</b>

that we leave LAX on a Friday, start diving Sunday, and then leave the following/following Wednesday (so weekend to following mid-week). This time we're arriving mid-week and will stay until the following/following weekend.

The general sked is to leave LAX on Monday morning, March 11, which will put us in Guam Tuesday evening and then Yap around 1AM on (technically) Wednesday. Grab some sleep, have a lovely breakfast on the *Mnuw*, followed by a semi-relaxed morning assembling gear and cameras. Then we'll get in a check-out dive in the afternoon. That will be followed by the Manta ID class that's not only unique to Manta Ray Bay Resort, but also is helpful is knowing who we'll be seeing at the cleaning stations and what behaviors to be on the lookout for.

After a full night's sleep, we'll hit the ground running the next day. Generally it's three dives per day (2-tank morning dives, lunch, 1-tank afternoon dive) with a mix of manta cleaning station dives and reef dives, plus we'll do a Mandarinfish dusk/night dive, and a shark feed, the likes of which you've never experienced before. That will occupy Thursday through Friday of the following week. Overall, you can get in as many as 25 dives (and even a few more if you do some of the optional late-afternoon dock dives).

We'll also be including a half-day tour of Yap, visiting some WW2 sites as well as taking in some of Yapese culture, including visiting a couple of Stone Money banks. And while we're doing all of this, we'll manage to squeeze in a Fish ID class along with some Photo Workshops, where we can offer photo (and video) tips for those who are shooting as well as review some of what you've shot and see how we can get even better results.

Our last full day in Yap will be Saturday, March 23, and that'll be a dry-your-gear and pack-up day as we'll leave for the airport close to midnight for the journey home, arriving back at LAX around 5AM on Sunday, March 24. This is a trip that really gives you full bang for your buck and will expose you to all kinds of new experiences.

Because we're actually there a day longer than when we start on a weekend, the price is \$500 higher than previously, coming in (including breakfast daily, double-occupancy Ocean View room, crew tip, and all listed activities) at \$3,895. Airfare on United - the only way to get into Yap - is running around \$1,900-ish from LAX.

We keep these groups small so if you're interested in joining us, give a call to 310/652-4990. And just think that with the holidays approaching, wouldn't this make for a special present for someone to unwrap????



## **'TIS THE SEASON TO BE SQUID**

It's that time of the year when we start keeping a close and sharp eye on Vets Park in Redondo Beach and look for the annual Squid Run. There was a still pix posted about a week ago from King Harbor in Redondo, where a boat had left some bright lights on in the evening and the surface was covered with squirming squid. And it's admittedly hit-or-miss. You could go out at 7PM and get skunked but the people who went out at 10PM that same night hit the mother lode. But you never know if you don't go and look. We generally do these as single-tank dives and usually on a Thursday evening. Our first official Squid Dive is December 13, and we'll try to do at least one

a month until around April. Join us if you can. And fingers - and tentacles - crossed.

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## **GIFT CERTIFICATES IF NEEDED**

Just a reminder that we can still do Gift Certificates for you if you're trying to think of that perfect holiday gift (like a trip to Yap) but don't know how to wrap it. And the Gift Certificate certainly doesn't have to be a full foreign trip. It could be a day trip to Avalon or even just a fixed dollar amount to apply as the recipient sees fit. But the point is, if you're looking for something dive-related to give to someone on your list, give some thought to a Gift Certificate from Reef Seekers.

## **MERRY/HAPPY WHATEVER**

There's a meme going around the Internet pointing out that there are something like 29 holidays recognized by 7 major religions around the world from November 1 to January 15. So it would seem that, when someone wishes you a Merry/Happy/Prosperous Whatever, and it doesn't happen to be the Merry/Happy/Prosperous Whatever that you personally observe, the correct response would be, "Thanks!! You too!!!" So from all of us here at Reef Seekers Dive Co., regardless of what you may personally be celebrating or observing this time of the year (including those who observe nothing), Merry Christmas . . . with a side of Happy Hanukkah.

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# **PIX PAGE - Merry Christmas(tree Worm)**

(All pix by Ken Kurtis © 2018)



**Bonaire  
2018**



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**Maldives  
2016**



**Palau  
2016**



**Fiji  
2017**



**Indonesia  
2015**