undercurrent

The Private, Exclusive Guide for Serious Divers

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Sorido Bay Dive Resort, Raja Ampat, Indonesia

luxury in the heart of a fabled dive region

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Dear Fellow Diver:

The last thing I would expect in such pristine waters as those of Raja Ampat was to learn of a manta entangled in a fishing net, but a researcher at the resort, Dr. Phil Dustan, came back from his morning dives with photos of an encumbered manta. At Phil's urging, we turned our afternoon dive into a rescue mission, hoping to free the manta from its potential death trap and returned to where Phil saw it, hoping that after a few hours, it might still be around. At Manta Slope, we spotted two mantas circling around a large coral head, but nowhere could we spot the victim. I wondered how difficult it would be to get close to a manta in the tough currents, and if we did, would it sense our purpose and cooperate? I would never know, as we ended the dive disappointed we could not carry out a rescue, but deeply appreciative of the opportunity to dive this remarkable area.

Indeed, these are remarkable waters and surely a manta haven. On our last day of diving, three Swiss divers and I set out on a day-long excursion around Gam Island through a beautiful passage filled with Karst formations jutting from the sea. En route to Manta Ridge, we were swept along by a strong current until we found a place to hook off. Shortly, one, then two, then three mantas appeared overhead. More joined and my Tokina 10-17 captured eight

The long jetty at Sorido Bay, Kri

of these huge animals in one image as they slowly swam circles around us in the plankton-filled waters.

It took me almost three days in December, with overnights in LA and Jakarta, to reach eastern Indonesia and Sorido Bay. After landing in Sorong at 6:30 a.m., it was a 90-minute boat ride to Kri Island. The dozen black-tipped reef sharks swimming with parrotfish and trevallies in the aquamarine shallows surrounding the jetty told me that, no, I wasn't in Kansas anymore. The two Swiss couples on the boat and my spouse and I walked up to the open-air dining area, where we sipped fruit drinks while listening to an overview of the resort by the general manager, Christopher Harvey. Originally from South Africa, but has been in Indonesia for many years, including a stint managing the dive resort Wakatobi, the lean thirty-something, who looked like he could be a Navy SEAL, was engaged to Jade Rondonuwu, the resort's Indonesian co-manager, whose beautiful personality matched her outward appearance.

After checking our C-cards and number of dives, Chris explained the personalized dive routine, which included posting the daily dive schedule next to our dining area. Boats carried no more than six divers and a captain, with two guides plus a separate guide for any snorkelers. I had the same boat and guide for my entire stay. I lucked out; Chris assigned my buddy and me our own guide. Boats embarked at 8:30, 11 and 3 p.m. My guides always helped us analyze and record the nitrox, set up and carry gear, change tanks, and rinse and store gear in the covered open platform. Kri Island relies on rainwater collected in cisterns, so the need to conserve water meant the wash tanks got brackish.

Sorido Bay Dive Resort, Raja Ampat, Indonesia

Diving	★★★★★
Diving for inexperienced	**Don't Go**
Snorkeling	★★★★★
Photography	★★★★
Accommodations	★★★★★
Services and attitude	★★★★★
Food	★★★
Money's Worth	★★★★

★ = poor ★★★★★= excellent

Worldwide scale

My first full diving day, I hit the water at Sawandarek, where I finned past a huge green sea turtle resting on the bottom, the first of many I would see. A few minutes later, a football-sized cuttlefish probed the water with its tentacles. I passed a common clownfish ("Nemo"), then a beautiful red carnation tree soft coral and a blue-striped, silvery gilled nudibranch. After a school of ribbon sweetlips, hundreds of blue-striped, five-lined, and long spot snapper swimming over a large bed of huge round, white-fringed plate coral confirmed for me Raja Ampat's splendid reputation.

Long ago, Seventh Day Adventists arrived here; there's no boat diving between 6:30 p.m. Friday and 6:30 p.m. Saturday,. The bowl-shaped house reef, dubbed The Blue Hole, a bit over 60 feet deep, has plenty of unique animals. I spotted a whip goby, a large turtle, and had several first sightings, such as a black and white banded humbug damselfish and a stunning orange spine unicorn fish, the stripes on

its face reminding me of war paint. When standing on the dock, the bowl looked small enough for an easy scuba circumnavigation, but appearances were deceiving, and I got a lesson in why the rule of thirds -- turn back after you burn the first third of your tank -- is such a valuable one. About 40 minutes into the dive, with visibility 30-40 feet, I could see the bottom, but there was no sign of home base in my horizontal sightline. When my buddy signaled he was getting low on air, we spy hopped to get our bearings. To my surprise (and chagrin as an experienced diver who should have known better), we were on the opposite side of the bowl from the dock, hundreds of yards away. It was a long surface swim back. Had there been current, getting back might have been impossible.

Boats carry no more than six divers

I stayed in one of the five Sentani-class double occupancy bungalows; two others held four people. All had AC (although the days were in the mid-80s, a light breeze made it pleasant in the shade), Wi-Fi, and glass windows (no screens, but also no real bug issues after dark). The doors opened onto a large deck that faced Gam Island; at low tide, we had a white sandy beach; at high tide, the water washed our deck steps. At almost 600 square feet and decorated with Papuan artifacts, even penis sheaths, the bungalow was superb. The room was decked out with a comfy king-sized bed draped with mosquito netting, a couch, coffee table, writing desk and chair, plus nightstands and bed lights. It featured a safe and a refrigerator stocked with treats (including beer). A long countertop for camera gear contained a sink and spray nozzle to rinse my housing. Potable water was stored in a couple of containers, one with a hot/cold spigot next to a tray of instant coffees, cappuccino, and teas. White walls separated the main room from the bathroom, which had two sinks (non-potable water), a large shower, and, in a separate room, the flush toilet. And -- wow factor alert -- drop dirty clothes into the laundry basket for free laundry!

During my stay, I mingled with the resort's conservation-minded Dutch owner, Max Ammer, who reminded me of Paul Theroux's engaging protagonist in his novel, The Mosquito Coast. What can you say about a guy who built and runs two resorts, heads up a non-profit marine research center, builds his own dive boats, and flies his own helicopter? The diving guests were a delightful mix from Europe, the U.S., Australia, South Africa, and Malaysia. Among them was Dr. Phil Dustan, a biologist affiliated with National Geographic who won an Emmy for his role in the film, Chasing Coral. The family-style seating at one long table at breakfast, lunch, and dinner provided lots of time for some interesting conversations. One topic: the serious threats from the growing tourism in Raja Ampat, including the pollution

Jellyfish Mucus Found to be a Cause of Sea Itch

Thimble jellyfish, the tentacles of Portuguese Men-of-War: the seas seem full of stuff that hurts. Sometimes you don't get to see what stings you.

At least one culprit for stinging water, that irritating phenomenon often encountered by divers in tropical waters, has been discovered to be the invisible mucus of *Cassiopeia xamachana*, a jellyfish that spends its time hanging upside-down.

After years of research, scientists led by Cheryl Ames, a marine biologist at the Smithsonian's National Museum of Natural History, found the answer right under their noses. It's a malicious mucus emitted by the jellyfish shot into the surrounding water.

You can get stung just if you get near. One of the best protections for a diver fully clad in a wetsuit is to grow a beard. Ladies need not try.

that is building despite the strong currents that sweep the islands.

Served from a buffet, breakfast began at 7 a.m., with choices including chicken sausages, eggs, cold grilled cheese sandwiches, yogurt, cereals, and fresh juices. Entrees at our hearty lunches and dinners varied between beef, fish, and chicken, tempeh and tofu dishes plus rice and vegetables such as spinach, carrots, and green beans. Soups varied daily, as did the desserts at dinner. Our meals were attended by our gracious Papuan servers, Getsia and Orpa. Everything seemed to be conscientiously prepared, wholesome and healthy, not too spicy or fatty, though each day's dishes often seemed a bit like the others.

Nights were quiet at Sorido Bay, but the days were filled with diving and special excursions, as well as additional twilight Mandarin fish dives, blackwater, and fluo night dives. For the fluorescent dive, I strapped on Papua Diving's special amber mask filter, and that caused certain coral and fish to appear in reds, yellows, and greens against the dark backdrop of everything that didn't fluoresce.

When it comes to the diving, there were no restrictions other than the maximum 32 percent nitrox depth of 121 feet. Most dives were drifts between 60 and 90 feet, lasting 50 to 60 minutes. But currents were frequent. On one dive, I was swept off the reef and into the blue as I tried to reposition myself on the reef (indeed, no place for macro). Most of the time, we finished off in shallow water to burn off nitrogen.

To board the dive boats, one had to climb down ladders mounted to the side of the pier (possibly a difficult task for some.)Yahya, my Papuan dive guide in his early 30s, took great care of me and my gear. My boat, the Julia, was a 10-meter-long speed boat with benches and a canvas canopy, with tiller steering for the two outboards that sometimes needed attention to get them running smoothly. There was no marine head. Most divers took off all their gear before climbing the portable ladder to board. Travel time to most dive sites was 15 to 20 minutes.

Throughout the week, dive after dive unfolded with great variety, often with a hint of excitement when an occasional black or white tip reef shark ambled past. Having been charged and fin-butted by titan triggerfish in the past, the harlequin and titan triggerfish I saw almost every day jangled my senses. Luckily, they weren't nesting and minded their own business. I feasted my eyes on cuttlefish protecting eggs, yellow fusiliers galore, batfish, pygmy seahorse, leather coral, anemone fish on most every dive, thousands of golden sweepers, garden and moray eels, and batfish; where do I stop?

At South Kri, the water dropped to 78F (other sites were in the low 80s), making me glad I was wearing my full 3ml wetsuit plus a hooded tunic. We had a fast drift dive, hitting a number of haloclines and thermoclines. On the way back after one dive, I noticed the high-pressure hose to my gauge was leaking. I figured the slow leak would be no problem for one more dive so after lunch and headed out again. I

Is that Aquarium Coral Farmed or Wild Coral? You Can't Tell

How can people with a home aquarium tell the difference between illegally harvested wild coral and sustainably farmed coral? They can't. So in 2018, the Indonesian government banned the export of corals for the aquarist trade.

But, a lot of people living on the shores of Indonesia make a living from the sea, and the ban proved disastrous for coral cultivators like Mr. Supriyatno, who grows corals on racks off Nusa Lembongan, near Bali. No longer able to sell his coral for export to aquarists in Europe and China, he couldn't afford to pay the staff, and his underwater farm went bust.

Now the government has reversed the ban, which had curtailed much of the illegal harvesting, and environmentalists fear that there will be a resurgence in illegal harvesting because the scofflaws know it's too difficult to differentiate between farmed and wild coral.

turned on my air. The blow out was swift. Rather than inconvenience my dive buddies, we kept going around the point to our last dive of the day, Cape Kri. There, I had to content myself with snorkeling one of the most famous dive sites in the world. I could have rented a wrist computer and analog pressure gauge at lunch. Was it worth it to lose the dive, but save some bucks? Doh!

A couple of times, the top of the water column was filled with mild stinging jellyfish. Welts on my spouse's wrists, face, and hands made her glad she could cover up with a hood, full wetsuit, and gloves.

Inside a Sentani-class bungalow

Summing up, I'd have to say that Sorido Bay offer spacious bungalows and a friendly atmosphere in the heart of one of the best dive spots on the planet. From there, you can reach wonderful sites in the eastern Raja Ampat region such as Fam Island and take an excursion all around Gam Island without the downsides of life on a liveaboard knowing that each time you flush the toilet, it is not endangering the marine life. The magic of being able to witness a flight of mantas on one dive and a huge school of humphead wrasse on another, swimming over bed after bed of hard and soft coral, made the journey worth the effort.

PS: In the last issue, John and Ben wrote about the travails of being on a dive trip with ill guests, and sure enough, a couple of guests arrived with flu-like symptoms and were so ill they skipped meals for their entire stay, except once. The night they came to dinner, I enjoyed a delightful conversation with them, and not long after, I developed a nasty cough that kept me up through the night. I started a course of some pretty strong antibiotics the next day; as luck would have it, I recovered almost completely within about a day. If guests that ill were to arrive at any resort now, I'm sure everyone would run for cover.

-- V.P.

Our Undercover Diver's Bio: *"I've been diving for more than three decades, logging over 1,000 dives, starting in the Caribbean, California and the Pacific Northwest before switching over to Malaysia, Indonesia and the Philippines. I'm a published amateur underwater photographer, but I still have a long bucket list to check off, and at this point I'm thinking what many of us may feel: So many great dive sites, so little time!"*

DIVERS COMPASS: My 10-night stay came to $7,729 for my (non-diving) spouse and me, which included all meals and unlimited diving with nitrox; extras included the birdwatching excursion ($25), a day trip to Fam Island ($83), my fluoro dive ($65) and Marine Park fee ($72) alcoholic beverages (Bintang at $4.35; Jacob's Creek Shiraz at $49 per bottle . . . tips were suggested at 10 percent of our bill, put in a shared envelope . . . Current was 220-volt in 2-pin outlets; adapters were available . . . The nearest chamber is in Waisai and usually does not have a diving doctor there to operate it. The nearest DAN recommended chamber is in Manado, North Sulawesi . . . Lion Air has heavy excess baggage fees; for four 40-lb. suitcases, ours ran $300; you need local currency . . . I used the Bandara International Hotel in Jakarta and the Sorong Swiss-Belhotel; both were fine and close to the airports. . . U.S. dollars and credit cards were accepted . . . Bluewater Dive Travel put my package together with patience and expertise . . . https://papua-diving.com/our-resort/; Bluewater Dive Travel - https://www.bluewaterdivetravel.com/

Socorro Aggressor, Revillagigedo Islands, Mexico

will dry-docking make her worth the price?

Dear Fellow Diver,

I've had a lot of great experiences on Aggressor boats, and I looked forward to diving with the big stuff around Mexico's Revillagigedo Islands. After all, having dived on Belize Aggressors twice, as well as Bahamas, Palau, and Indo Aggressors, I figured I could count on them.

Actually, this was my second attempt to travel with Socorro Aggressor. After boarding the boat last May, the ship had engine problems, and the next day the cruise was canceled. We all received refunds and vouchers for another trip. I rebooked, and the day after Christmas, my son and I headed off to the airport, but after an unscheduled stop in Oklahoma City due to bad weather and a 6-hour wait, we had no chance to make our connection. I called American; the only flight that would get us to Cabo San Lucas in time to board the Aggressor the next morning had but one seat remaining. Begrudgingly, I took it, and my son, an awfully good sport, returned home.

The next morning at 7:45 a.m., I rolled my bags down to the pier, boarded the vessel with a diverse bunch from France, Mexico, Switzerland, Germany, and the U.S., got my stateroom assignment, and was ready to go … but the ship wasn't. Three hours later, the Aggressor finally began a slow departure, stopping soon to lift and load their three tenders. As they started using the Aggressor crane, a hydraulic line blew. My reaction was "oh my … here we go again." It took awhile to repair the crane and get the tenders loaded. Just before 2 p.m., we started our 24-hour journey.

The Socorro Aggressor joined the Aggressor family in early 2019, after serving in the Red Sea as the MV Cassiopeia. Built in 2006, it had a major restoration in 2012. Once a 5-star luxury yacht, today it's worn and tired, with signs of rust everywhere: the wooden decking on the bottom dive platform was gone, leaving only rusted painted steel; duct tape held power cords together and secured connectors on the high-pressure hoses used to fill the tanks, and carpet runners covered the worn carpet in the below-deck hallway.

After a 26-hour transit, we arrived about 3:30 p.m. with only enough time for one dive. Our guide ended the dive after 25 minutes, and I didn't see much, whereas the other two groups were down 40 minutes and saw sharks. But after that dive, I have but one word for the remainder of the diving. Great!

The volcanic Revillagigedo Islands, which include Socorro and San Benedicto, underwater sport a predominately rock and boulder topography. At sites like El Boiler and Roca Partida, the rock rises straight from the seafloor, making for interesting circumnavigation around the entire mountains of rock, where large schools of trevally roamed. Most diving was 60-90 feet, more often near 60 feet. There were little coral and few small fish, and I saw lobsters, a skittish octopus, and a very large tuna. But this was a trip all about the sharks,

MY. Socorro Aggressor

mantas, and dolphins -- even a surprise visit by a whale shark.

Our first full diving day, we moved to a nearby bay and the El Canyon dive site. Here, we twice dropped in, needing just a short kick to reach a cleaning station that was visited constantly by white tip, silver tip and Galapagos sharks, as well as giant mantas. They kept circling, so I could easily shoot from different angles. On two spectacular dives, giant Pacific mantas came in very close. A couple of dives we began out in the blue, hoping to see hammerheads on our swim to the cleaning station. I didn't, but divers in the other groups spotted them. My highlight? On this day, it was seeing a black giant manta swimming in our bubbles; another day watching a dolphin clean another dolphin … this was the most action-packed dive site of our cruise.

The Conception liveaboard fire, killing 34, has led us divers to think more about safety. Before departing, I wrote the Aggressor fleet about safety concerns, and CEO Wayne Brown responded, saying, "The stateroom orientations always include the emergency exit plans, and we will take any guests that requests it through an actual emergency egress orientation." When I boarded, I was not briefed on the egress plan, so I asked Rana, the cruise director, about it. A mature, experienced, and friendly guy from La Paz, he walked me from my cabin to the ladder to the secondary exit, an opening with no hatch.

The yacht has a lot of smoke detectors, but none was near the charging stations; when mentioned to the crew, a few minutes later they installed one. Later,

Those Full-face Snorkeling Masks – More to the Story

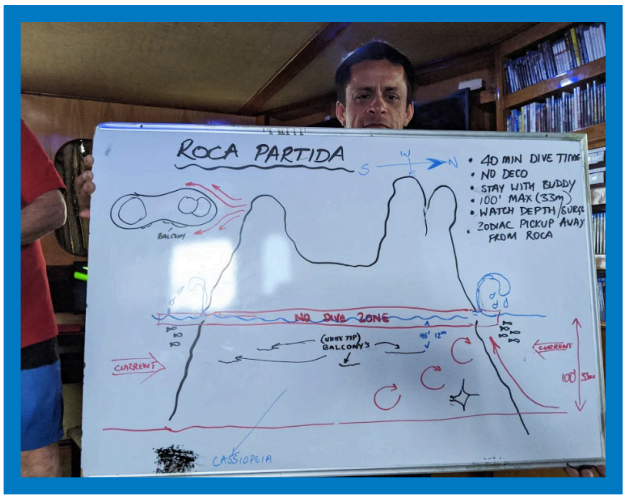
Undercurrent needs to go further in explaining the problems of full-face masks, says Max Weinman MD (Atlanta, GA), since there are inherent dangers that we didn't describe in full in our January article.

He wrote, "In physiological terms, any area not involved in gas exchange, that is, the uptake of oxygen and the removal of CO_2, is a 'dead-space.' So [danger] is not merely a function of mask fit, but also the volume of dead-space in relation to the relative removal of CO_2 by breathing, ventilation, and its production, metabolism. Should one of these factors alter while dead-space is constant, the latter may become increasingly important.

"Specifically, if [breathing] effort increases, such as a snorkeler finning against a current, CO_2 production will rise dramatically, and dead-space will become increasingly meaningful in terms of CO_2 build-up. Firefighter masks (upon which these devices were apparently based), like scuba regulators, are fitted with one-way exhalation valves designed to minimize dead-space and CO_2 buildup. These are absent in [some of] these full-face masks, which have the additional volume of the snorkel. All this additional dead-space acts as a potential CO_2 reservoir. A healthy fit person may be able to deal with this physiological challenge, but this is not always the case."

In the Italian-made masks (Ocean Reef, Mares, Cressi or Seacsub), fresh air is drawn down through the snorkel over the faceplate and through two butterfly valves in the internal bib. CO_2-laden exhaled air is vented through both a valve at the front of the mask as well as back up the snorkel tube. However, cheaper masks allow the exhalations back into the dead-space, mixing with the fresh air, thereby encouraging hypercapnia. An ill-fitting bib will tend to do the same.

These masks are for use while floating relaxed in the water. If you need to swim hard and thereby increase your breathing rate, you should be prepared to pull the mask off.



Diving briefing for Roca Partida

when we were in the dining room, it went off (someone was burning toast), but it was not loud enough to be heard throughout the boat. They do not appear to be interconnected into a central alarm system. So, with engines running and some people sleeping with earplugs, a single alarm from a smoke detector may not be heard by all. Someone would have to alert everyone on board to a fire.

My air-conditioned stateroom was adequate -- the mattress was a bit hard -- but the bathroom reeked of sewer gas; other divers also had the foul odors in their bathrooms. Wisely, the crew allowed no battery charging in the staterooms and unplugged any they found. The charging station inside the dive deck doorway had mostly 220v outlets and a 110v power strip with about a dozen outlets. It was a bit of a mess, with charging laptops, iPads, lights, camera batteries, and dive computers. With one large camera table on the dive deck and two smaller tables in a corner, it got a little tight for us photographers. I rinsed my camera with the shower hose, so I didn't have to put my heavy rig on top of someone else's camera in the rinse tank.

Socorro Aggressor,
Revillagigedo Islands, Mexico

Diving (Experienced)	★★★★★
Diving (Novice)	**Don't Go**
Accommodations	★★★
Services and attitude	★★★★
Food	★★★
Money's Worth	★★★

★ = poor ★★★★★= excellent

Worldwide scale

Each day started in the dining room -- it has bench seats and rigid tables -- with a continental breakfast around 6 a.m.: breads, fruit, yogurt, and coffee. Full breakfast came after the first dive, usually eggs or omelets and breakfast meats. Lunches and dinners had a Mexican twist but were otherwise unmemorable: soups and entrees of fish, chicken, pork, and beef, all rather bland. As a fellow diver said to me, "somewhere between hospital and school cafeteria food." Some of the food was at best lukewarm, or even cold. Our New Year's Eve was uneventful, unlike Christmas on the Belize Aggressor a few years back with decorations, a full turkey, and so on. Additionally, they ran out of their best beer and even ran out of Coke! While wine was complimentary, the white was poor, the red passable. Between-dive snacks were cookies or pastries, much of it still in a Costco container.

They operate three inflatable dive tenders; boarding them from the lower deck can be challenging with wave action, so one needs to be careful. I back rolled in, then after the dive, I removed my BCD and fins before climbing the ladder with the help of an attentive crew member.

All the dives were guided -- buddies were required -- but the guide let some group together, as long as they stayed within his sight. Rana, who guided half my dives, was awesome underwater, showing a hilarious expression of enthusiasm whenever we came across mantas … and more seemed to show up when Rana led our dives. Daren, from the U.K., guided the other dives. He seemed to be in his own world at times, sometimes rarely looking back at us. Two other guides, Trucu, a local, and Nico (France), were great guides, always having fun. They never conducted a formal roll call after a dive, but each tender captain clearly knew if he had his charges. Occasionally, a diver or two would surface early and be picked up by a

Goliath Groupers: Better in the Water than on the Plate

Atlantic Goliath grouper are iconic to Florida divers, but a new government proposal to permit Goliath fishing — it has been banned for 30 years — has been met with trepidation by scientists at Florida State University. They fear that although the species has recovered to some extent, it is still vulnerable to cold snaps and red tides. Combined with the loss of mangrove forests in South Florida, a critical habitat for young grouper, they make the Goliath grouper unsuitable as a fishery species.

Furthermore, adult Goliath grouper carry heavy loads of toxic mercury in their livers and muscles, making them unsafe for human consumption. Federal and state agencies may be debating re-establishing the fishery, but scientists say the fish pose health risks.

Of course, divers thrill at the sight of up to one hundred fish, some individuals approaching eight feet long, forming spawning groups each year. The economic value of Goliath grouper to the Florida economy is far greater in the water than on a plate.

It's the same with Nassau groupers. They were once common in the Caribbean, but not so much during that last two decades. It's not all bad news: REEF has just released the results of its Grouper Moon Project outlining how, during the last 20 years, due to management techniques including a ban on fishing during the spawning season, the critically endangered aggregations in Little Cayman and Cayman Brac have tripled.

You can read more: **https://tinyurl.com/w58greo**

different tender, coordinated by the captains constantly talking with each other by radio.

The third dive day, we moved to another part of San Benedicto to dive "El Boiler," a submerged rock formation that bottoms out at 120 feet. After four dives here, I had covered the entire formation, while encountering a spattering of smaller white tip sharks, jacks, giant trevally, and some snapper; even a pod of dolphin passed through during one dive. The real heart-pounding was when Pacific mantas appeared. They are beautiful creatures, especially the black mantas. While filming one, I spotted a whale shark. I tried to follow, but it had gone too far; however, when I returned to the rock formation, it was coming back, and I was directly in its path. As I'm filming, a manta came winging over my shoulder. "Oh My! What do I film?" It was a great dilemma to have -- two amazing subjects to film -- I got both!

The fourth dive day, we went to an exposed rock outcropping, "Rocka Partida." We only made three dives here because the Aggressor was the last ship to arrive that day. There were lots of white-tips swimming by the dozens near large schools of jacks and triggerfish. I approached a couple of ledges around 80 feet down where perhaps a dozen juvenile whitetips were resting, stacked on top of each other. A puffer fish hovered over the pile of sharks, making for good photos. It was exciting to be swimming through huge schools of fish in excellent visibility, seeing below dozens of sharks skirting in and out. Our guide, Darren, noted that during the dive the U.K. would be crossing into New Years, so about midnight their time (4 p.m. local), he and several divers did their best rendition of a boogie dance.

The fifth dive day at Socorro Island, we made four dives at "Cabo Pierce" dive site -- basically a long finger of rock with sheer walls on both sides. Two dives were totally WOW experiences. A couple of giant Pacific mantas came around; one being of the totally black 'ninja' coloration put on quite an up-close show. If you stay still, they will come right at you through the bubbles.

Our sixth dive day was back at San Benedicto island and the "El Canyon" dive site. This day was probably the most complete bucket-list day of all my 31 years of diving. We had many sharks and mantas, lots of dolphins, and the visibility was excellent! I got two "firsts" -- I filmed a dolphin cleaning a dolphin, and I got eye-to-eye with a school of hammerheads -- it was just a spectacular day of

At the Revillagigedo Islands

diving, and a great way to end the cruise!

It seemed a trip too short, though ending similarly to how it began -- with issues. Arriving at Cabo late in the evening, we anchored in the bay. The next morning, our bags packed, we learned the captain could not bring the yacht into port -- there was no room for us. Eventually, we 20-plus divers and our luggage made our way via RIBs to the pier (about 2,000 yards), with the waves giving some of us a good dousing (a good thing it wasn't raining).

So regardless of the exciting big-fish diving, the Socorro Aggressor just wasn't up to snuff as a quality liveaboard. I provided my unvarnished feedback via email to management, as did many of my companions, and completed the online review they sent after the cruise. Several weeks later, I received a voucher for $500 for any Aggressor cruise and a statement acknowledging that there were known deficiencies and that "too little was happening too slowly." They further stated that they are fast-tracking refurbishment. That said, I would be cautious about booking a trip on this cruise in the near future, but hopefully, they are successful in getting it up to the expected Aggressor standards.

Here's what their email states they plan to do:

"The yacht has two weeks of scheduled maintenance that are occurring now. During this time, the replacement of carpets (which was started, but not completed on your cruise) will be completed. Wallpapers will be torn down and replaced. A number of the stateroom bathrooms will also be refurbished . . . While total refurbishment is scheduled later this year, there is no excuse for the issues many of you described in the guest surveys we received. we have been working with the owners, management, and staff of the Socorro Aggressor on known areas of deficiencies for a while. It was obvious too little was happening too slowly. Since your cruise, we have put the yacht on our fast track program to ensure immediate compliance in every area. The program tightens the compliance from a verbal acknowledgment to a visual and written detail. As in the past with other owners/destinations, once on the fast track, either immediate compliance is achieved or a move to a new yacht/owner is the only outcome."

--C.J.

Undercover Diver's Bio*: CJ became a recreational diver while stationed in Okinawa, Japan, in 1988. Now retired, he has ramped up his diving, taking 4 to 6 trips per year, traveling as much as his non-diving wife will let him (not often enough!). For the past 5 years, he has been making YouTube videos of his adventures, and has nicknamed his rather large camera setup "The Beast."*

Divers Compass: Eight-night trips start at $3495 double occupancy . . . Mexican customs collects a tax on camera gear. Be ready for it (the Aggressor people ought to include this in their "know before you go" information . . . My analyzer reported 31 percent nitrox in the aluminum 80s at the beginning of the week, by end of the week 27 percent, which is too close to air . . . They rent wetsuits, BCDs, regs, mask, fins and 100-cu. ft. steel tanks . . . La Marina Inn, a two-minute walk from the boat, offers a good room, a good restaurant, friendly staff, and a good value. https://lamarinainn.com Video: https://youtu.be/CSfVnMkPWU

The Excess Weight We Carry

should dive operators reject high BMI, plus-size divers?

Undercurrent subscriber Lori Ann Krushefski, who belongs to a Facebook Group called Plus Size Scuba Girls, contacted us after another member asked the group for dive operations in San Diego that don't have restrictions on Body Mass Index (BMI). A measure of body fat, BMI is a person's weight in kilograms divided by the square of height in meters. Apparently, Scuba San Diego lists on its website that it doesn't take out divers with BMIs over 30, the score at which Center for Disease Control (the CDC) says a human is obese.

That's totally discriminatory, Krushefski says. "In recent years, I've seen a number of articles and studies showing that BMI is not a good measure of fitness. And PADI doesn't rule someone out of scuba based on weight alone. The way [Scuba San Diego] words it on their website makes this look like an absolute as opposed to their own narrow-mindedness."

According to the CDC, a BMI of 30 and over is considered obese, and a BMI over 40 is "extreme" or "severe" obesity. The CDC verifies Krushefski's take by stating on its website, "BMI can be used as a screening tool but is not diagnostic of one's body fatness or the health of an individual."

Still, you may have seen many divers gearing up next to you who look squarely in the 30-40 BMI range, and thus, according to Divers Alert Network (DAN), they're at greater risk for suffering a dive accident or fatality. We've written plenty of "Why Divers Die" articles about overweight-to-obese divers who died during boat and shore dives from heart attacks and decompression sickness.

"I'm 5'10," 285 pounds, why should that matter?"

Scuba San Diego owner Rod Watkins does not take people with a BMI of 30, a requirement he put

How Much "Fat Shaming" Is There in Diving?

The Facebook Group, Plus Size Scuba Girls, we referred to in the beginning of the story states that it's all about getting women divers to "embrace their inner whale." "Everyone can scuba dive, even plus size," member Lina Amona wrote in her review of the group. "They give confidence to others to try believing in themselves. I love to see mermaids in water, regardless of size."

But that view isn't shared by everyone in the dive world. Unfortunately, it seems plus-sized divers are often discouraged — and often blatantly to their face — from gearing up. Mackenzie Macdonald (Lincoln, NE) remembers how the divemaster in her training course did his best to dash her dreams of getting certified.

"He started right away by telling me — in front of everyone — that I wouldn't be able to complete the swim test, and that I should quit the class. I am a lifelong competitive swimmer, and was just one year out of college, where I was on the swim team. I showed him, by lapping everyone else.

"But he continued to comment that I wouldn't be able to do the skills, for no reason other than, it seemed, because of my size. He would make me repeat skills over and over again, even though it seemed to me and everyone else that I had done them successfully the first time. Before doing the open water dives in a near-by lake, he asked if I really thought I could do them, then told me point blank I wouldn't fit into a wetsuit. I was a size 14, which is average for U.S. women.

"I passed the dives and finally finished with him. The next week, I was diving in Florida and messed up my ascent. Based on my training experiences, I immediately started to tear up and apologize. The divemaster was taken aback, and assured me everything was OK, and he was there to help me succeed, not to put me down.

"Every divemaster I've dived with since my course has been phenomenal. But that first one made me feel terrible and worthless, even after I proved I was the best swimmer in his class. He nearly made me quit, and I'm sure he's done the same to others."

So let's shame the divers — pro and sport — who pull this kind of treatment. Have you been fat-shamed by a divemaster or fellow diver? Have you seen others do it on dive trips? Has it been subtle signs or obvious call-outs? And do you think dive pros have the right to discourage heavy divers from participating in certain dives — or getting certified at all?

Tell us what you've seen, what you've personally experienced, and what you think — email your stories and comments to **BenDDavison@undercurrent.org** not forgetting to tell us your town and state.

in place when he started the business in 1968. "The BMI qualification to dive with us is not a training agency requirement; [it] is in place because Scuba San Diego desires to keep its perfect safety record," he told us.

Scuba San Diego offers shore dives at La Jolla Cove, north of San Diego. "It is off limits to all powered craft; hence there is no easy entry into or exit out of the water unless it is an unusual dead-flat-calm day," says Watkins. "There is no platform, such as a boat, to fall into the water from or get out from. This is no problem for even beginning divers — if they are fit to dive our conditions."

Watkins says La Jolla Cove is not only famous for its kelp forests but also famous for a high number of divers unaccustomed to swimming through surf and dealing with strong currents who need rescuing. "Most of these rescues are people exceeding a BMI of 30 who obviously never passed their swim qualifications and are physically unable to dive safely here. Incredibly, many of these rescues are not out on the reef or in the kelp forest, but at the entry/exit point. This is where a large person who is wearing a 7-mm wetsuit, weights in excess-of-28-pounds, a 45-pound cylinder, five pounds of breathing system, etc., falls, gets knocked down by surge and waves, or loses footing in soft sand. Also, will this person experience hyperthermia standing around in the sun in a 7-mm wetsuit? Will this person be able to climb back up the 50-odd steps to the shoreline? Many have gone to the hospital as a result of the battle to get up, during which they get severely bashed around on the rocks and the steps. Once they are down in the soft sand, they almost never can get up without assistance. Even lifeguards have been injured helping these divers."

When potential customers call, Watkins grills them with questions — height and weight, what they do for a living, types of conditions they normally dive in, are they diabetic ("many above the 30 BMI are Type II diabetic or pre-Type II diabetic," he says), how many dives they did in the past year. "We need to access their ability to enjoy our kind of diving and whether it is safe for them," Watkins says. "If the prospective diver is a desk jockey or a UPS delivery person, it helps us get answers to vital questions. Telling us you're an experienced diver with a medical clearance does not answer the question, 'Will you enjoy this dive?' Emailing us that a BMI is not a standard PADI requirement is a meaningless comment to us."

Many divers have hung up on Watkins over the years, but he uses this example of what later happened to a diver he denied to hammer home his reason for a BMI requirement.

"He called, saying he had only tomorrow to dive, had over 400 dives worldwide and was a semi-professional photographer. When I asked for his height and weight, he responded, '5'10," 285 pounds, and why should that matter?' I said, 'Sir, this is a rigorous dive, you will not enjoy it and . . .' He hung up on me before I could recommend a local boat dive run to the wrecks or Coronado Island.

"The next day, one of my divemasters called and asked if I had heard about the Jet Ski rescue of a diver about a mile off Point La Jolla. He said a competitor's divemaster couldn't tow his customer in once they got outside the point. The guide abandoned the diver to return to shore for lifeguard assistance. The lifeguard service sent a rescue jet ski out from two miles away. It deposited a huge guy with a large camera on the beach at La Jolla Cove. I'm not psychic, but I'm pretty sure that was the guy who hung up on me."

The 250-Pound Mark

Another dive operator with a weight restriction is One Ocean Diving, which runs shark dive and snorkel trips out of Haleiwa, HI. Caroline Kwong, a self-proclaimed "big girl," recently went on a trip to the Big Island with two friends, one a plus-sized guy who had never dived or snorkeled but was excited to try. Kwong had heard great things about One Ocean and its owner, Ocean Ramsey, who has gotten much media coverage for freediving with sharks. But after she booked their spots and started to enter payment information, she saw a disclaimer

Your Reader Reports are the lifeblood of *Undercurrent* because they reflect your own experiences. And because they tell both the good and bad, these reports help make our monthly newsletter a unique source for serious divers. Your reports join more than 10,000 others in our online database (and our annual *Travelin Divers' Chapbook)*, which is easily searchable by any other subscriber. You can even add photos if you wish. We're also asking subscribers to report on the use of single-use plastic at dive resorts and liveaboards they visit — this information we'll use to contact those dive travel operators and compel them to change their ways (and keep those giant garbage patches in the oceans from getting larger). File your report at **www.undercurrent.org/members/UCnow/SubRRTopMA.php**

at the bottom of the page. "It stated that if you are more than 250 pounds, they might not be able to accommodate you, and they may deny you boarding.

This hit me strongly, as I've been diving off boats with no issues ever. I really didn't want my friend's first snorkeling experience to be one where he felt judged. I ended up booking with a different organization out of the same harbor. It was a great day; none of us had any issues."

When we asked One Ocean to clarify the policy, office manager Blake Thompson replied that the dive operator is happy to take people over 250 pounds, but safety is the top priority when swimming with sharks. That means having extra crew on hand for overweight passengers, especially if they're novices. "Each crew member is certified to lift up to 125 pounds — with two crew lifting a total of 250 — and we would be considered negligent if we didn't have the physical ability to assist [in an emergency]. If we ever had to get a guest out of the water quickly for safety reasons, it may not be physically possible for them to come up the ladder backwards, facing away from the boat, and quickly without assistance. For that reason, we sometimes have a third crew member on board. However, it is on a case-by-case basis, as we understand some people are simply tall or have a bigger build. If a guest is just over 250 but is an experienced snorkeler and physically active, then an extra crew member isn't needed."

How Important is Your BMI?

There's an ongoing debate about how true of a rating the BMI is for one's fitness level. For example, specialized athletes like heavyweight boxers and weightlifters may have high BMI due to muscle mass, but they're still very fit.

On its website, DAN states BMI may underestimate the proportion of body fat in older persons and others who have lost muscle mass. "Accordingly, BMI is just one of many factors that should be considered in evaluating whether an individual is at a healthy weight, along with waist size, waist-to-hip ratio and a measurement known as 'skin-fold thickness.'"

However, a study published last summer in the *European Journal of Preventive Cardiology* summarized that older, overweight scuba divers should shed pounds to avoid an underwater heart attack. "Cardiac issues are now a leading factor in diving fatalities," lead author Peter Buzzacott, a research fellow at the University of Western Australia, told *Science Daily*. "Divers who learned to dive years ago and who are now old and overweight, with high blood pressure and high cholesterol, are at increased risk of dying."

People who go through the dive-certification process must be screened for fitness, but after that, the certification lasts for life, with no other screenings required. "This is where we see an increase in risk," says Buzzacott. "It's not commonly new divers who have health problems, because they have been recently screened. It is older divers who have not looked after their health."

The best indicator of diving fitness is your general health and level of physical fitness. Diving requires you to lift and carry scuba gear, climb onto Zodiacs while wearing it, and swim through currents underwater and on the surface. How good you are at it often depends on your exercise regimen or lack of it. Also, consider whether you're fit

Why You Need Medical Evacuation Insurance

James 'Kim' Martin, 56, from Baysville, Ontario, is one of Canada's most experienced cave divers, but it didn't stop him getting into difficulty on the 330-foot dive to the wreck of the *Lusitania*, off the coast of Ireland.

It was August 8, 2019, and he suffered a massive decompression injury. He was airlifted to a hyperbaric chamber in Galway 120 miles from the dive site, and several weeks later, he was still on life support. He'd sustained a serious spinal cord injury.

Defying all odds, he survived, but was still paralyzed with the spinal cord injury. His fiancée, Kirstin Chadwick, wanted to get him home. Repatriation and the medical treatment he received cost around $90,000, and Martin's insurance was inadequate. A *GoFundMe* appeal was set up to raise the money. By the beginning of October the target sum was reached, but the road to recovery has only just started.

This leads to the question, how many of us risk dive travel without insurance for medical evacuation? Martin was lucky in that he received medical attention in a First World country. Things might have been different if his diving accident had occurred somewhere like PNG or in Micronesia. Without medical evacuation insurance, you might never get home.

enough to rescue your buddy — and yourself — if a dive goes downhill.

Should Doctors and Dive Operators Be More Vigilant?

Watkins, the taskmaster at Scuba San Diego, says BMI is not an issue with the vast majority of dive situations. "A person who does not meet my requirement is usually OK rolling or jumping off a boat in calm, tropical seas and blowing bubbles for an hour on a couple of dives while on vacation. This diving scenario doesn't involve waves pounding the shoreline or offshore current to deal with."

He takes issue with dive agencies and dive operators that ignore divers' obvious health factors because they're so focused on the bottom line. "All training agencies have a (supposedly mandatory) swim test that must be passed before being allowed into a basic scuba class. But I personally have witnessed dive certification classes with applicants who you can tell have never passed that swim test. A dive shop has [bills to pay], and this often mitigates their desire to tell an applicant they have to come back when they can pass the swim competency test. In my experience, it is clear many card-carrying divers never passed that test."

PADI allows divers to do self-certification fitness tests, or go to their doctor's office with a Medical Statement and Guidelines for a Recreational Scuba Diver's Physical Examination for the physician to fill out. However, the physician may not fully understand the ramifications of scuba diving and the wide range of conditions their patient encounters on a dive.

"A doctor's clearance to dive does not guarantee a person's ability or safety to dive," says Watkins. "It just says, 'You look OK.' A doctor's 'OK' is often given without the doctor's firsthand knowledge of the physical and mental stamina required to dive and snorkel in our waters on any given day. Too often, the examining physician is not a scuba diver."

That's why he believes more dive operators should follow his lead and be more vigilant in keeping unfit divers from risky dives, and make better judgments about whether they can accommodate the needs of divers who could be potential risks.

Buzzacott advises all divers to have routine fitness assessments with their doctor, and tackle risk factors that otherwise could lead to them having a fatal cardiac event while diving. "For the first time ever, we now have a large number of people who have spent their entire lives regularly scuba diving. But none of us are as young as we once were, and it is important that we stay in shape for diving. Jacques Cousteau, the father of diving, was diving at 90, and the current world's oldest diver is 94. He looks like he's in great shape, and that is the role model for us all if we want to keep diving into our senior years."

– *Vanessa Richardson*

Two Shark Attacks on Divers

you can be unlucky or very unlucky

Just a few minutes after entering the water, Gary Johnson, 57, was mauled to death by a great white shark on January 5, off the southern coast of Western Australia, near Esperance. His wife, Karen Milligan, witnessed the awful moment as he was dragged away. Only his tank, BC, and fins have been recovered. We'll never know if a Shark Shield he was wearing really worked as a protection against sharks, because he hadn't switched his on.

The search for his body was called off after three sharks were spotted in a feeding frenzy devouring the remains of a different man, later identified as that of missing soccer player 21-year-old Eric Birighitti. (Australian papers report he was swept out to sea on January 2 after slipping on some rocks.)

Western Australia has suffered 16 fatal shark attacks in the last decade and has culled sharks since 2014, using drum lines (unmanned aquatic traps used to lure and capture large sharks using baited hooks and drum floats). The program has been opposed by conservationists, animal rights groups, and environmentalists.

Johnson's wife said, "We were always aware of the risks, and often told each other that if we were attacked by a shark, that would just be unlucky. We were completely against shark culling, and I still am."

The local news reported Johnson "died doing what he loved," we think a foolish statement since had he foreseen his fate, we have no doubt he would have foregone his love of diving and stayed home that fateful day.

Kristoffer Nymann, 23, from Denmark, was

luckier when he went to Baja California Sur in November to photograph marlin and sailfish off the Pacific coast of Mexico. He grabbed the opportunity to buddy up with top underwater photographer, Frenchman, Greg LeCoeur. Thinking he would learn a lot from the experience, he ended up learning more than he reckoned for.

Johnson's wife said, "We were always aware of the risks"

Evidently, the technique for photographing the elusive marlin is to swim on the surface near a bait-ball that they might be attacking, then free dive to get the shot. Any approach directly underwater, as with scuba, scares them away.

"Wham!"

Nymann had just entered the water from the boat and was swimming at the surface toward a bait-ball when he was attacked by a mako shark, which slammed into him and ripped into his upper arm on his right side. He fought to get it off, but it seemed intent on feeding on him. There had been no warning signs. He had not even seen it approach. The attack was literally out-of-the-blue.

In the fight to get it off his arm, Nymann sustained cuts to his hands and his abdomen. He told me later that the shark's teeth were sharp as a razor and cut through his wetsuit and his flesh like a hot knife through butter.

Buddy Greg helped drive the shark off, but Nymann was badly injured. He could feel his right arm dangling uselessly by his side, although he felt no pain. He swam back to the boat and hauled himself out of the water with his remaining functional arm. He was bleeding profusely.

Meanwhile, Greg LeCoeur courageously stayed in the water, continuing to photograph the shark, keeping between it and Nymann, as the younger man retreated to the boat. The shark was old, with only one eye, and displayed massive scars on its upper side, probably caused by a boat propeller. Mako sharks rely on three-dimensional vision for hunting at high speed (they're the fastest of all the sharks) for which they need two eyes. Perhaps, like tigers that become too old to hunt their normal prey and become man-killers, this mako shark was failing to be successful with its normal prey and desperately attacked anything that might have resembled an easy meal.

Nymann was that potential meal. It was a million-to-one chance, and he was simply unlucky, but not as unlucky as Gary Johnson, who didn't survive. The shark got tangled in Kristoffer's wetsuit, and for a few vital seconds, couldn't get free. The bite severed a bicep, fractured Nymann's elbow and injured nerves. Had the mako severed the major artery in his arm, he would certainly have bled to death.

Due to the remoteness of the location and the limited medical facilities in San Carlos, it was 10 hours before he was attended to by a surgeon at the private Fidepaz hospital in La Paz. Nymann was then hospitalized for 15 days, in the first few facing the possibility of an amputation due to the risk of infection. He's now back home in Denmark and bearing scars that forever will make him an expert in shark attacks.

He told *Undercurrent*, "It hasn't scared me away from diving and wildlife, and I'm excited to be back in the water."

–John Bantin

Coronavirus – Will it Affect Your Dive Travel Plans?

some thoughts to help you decide whether to embark

In mid-February, diver Saeed Rashid went to his doctor in southern England with an irritating cough. When he explained he'd just returned from running an underwater photography course in Lembeh, Indonesia and flown home via Singapore, he was immediately sent to a special unit in his local hospital where he was met by people in HazMat suits and tested for coronavirus. Told to self-quarantine, he was sent home. Days later, similarly dressed medics arrived to tell him he'd tested negative. It was typical of similar stories now occurring throughout the Western World, though not everyone gets good news.

This novel corona virus, officially called SARS-CoV-2 by WHO, the World Health Organization – WHO has labelled the resultant the disease COVID-19 — has spread to 58 or more countries besides China, where it originated. Many small

island nations where we divers visit have limited resources and would encounter great difficulty coping medically with such an outbreak, so some, like Micronesia, Fiji, and the Solomon Islands have taken precautions by banning entry by anyone from China, and, some cases, anyone in who visited a country with such where an infection as occurred within 14 days.

For example, Micronesia has banned travelers from the UK and the Solomon Islands says it immediately quarantines UK travelers. It's hard to imagine such a ban on American travelers, but just a few weeks ago any ban was unmanageable.

Officials from many countries advise against travel through Singapore, a busy hub for international travel through Asia. It's a similar story for Hong Kong. And in Japan, the island of Hokkaido has declared a state of emergency, with other countries imposing a strict quarantine for travellers from there.[1]

A current list of those countries with confirmed cases and deaths attributed to COVID-19 disease can be found here: **https://tinyurl.com/wl8kbzw**

Divers Affected

Of course, many divers have prepaid expensive trips to many Indo-Pacific destinations. Subscriber Tom Baker wrote to us February 27, trying to decide whether to leave the following week for a prepaid liveaboard trip to Raja Ampat, only to be informed that Cathay Pacific cancelled his flight from Hong Kong to Jakarta, leaving him no way to get there in time to embark. He'll get an airline refund, but says the insurance policy will not cover the liveaboard costs. Hopefully, he can reschedule some time.

Bradley Dunbaugh (Santa Cruz, CA) wrote to *Undercurrent* to say that the itinerary for his Master liveaboard between the Solomon Islands and PNG has been altered to encompass the Solomons only, since the PNG destination ports are closed. Master Liveaboards, so far, has only offered a letter that can be provided to travel insurance companies for those of its customers who wish to cancel the trip but, unfortunately, Bradley's travel insurance company, World Nomads, is stipulating that this change is not covered by his policy.

Mark Shandur of WWDS and Master Liveaboards tells *Undercurrent* that PNG is limited to a single port of entry, Port Moresby, where medical examinations of passengers and crew take place and so the Solomons/PNG itinerary has been postponed. Master operations in Truk have been suspended because visitors to the Federated States of Micronesia are required to have spent 14 days in a country that has no incidence of the virus, which equates, at the moment, to laying over in Guam for a fortnight.

Of course, the tight confines of a liveaboard is another petri dish for any virus or bacteria, as we noted in our article last month about when a cabinmate gets sick. Prof Sanjaya Senanayake, an infectious diseases specialist at the Australian National University, says "There is an increased risk of respiratory and gastrointestinal diseases on ships. In general, you've got passengers and crew members from different parts of the world mixing intimately and intensely for a short period of time. They've all got varying levels of immunity and so that does set things up for an infection outbreak." (*BBC*).

The recent experiences on the *Diamond Princess* cruise ship with an outbreak of COVID-19 are sobering: 10 initial cases of coronavirus disease on February 3rd led to 619 cases 2 ½ weeks later. [2] Suffice to say that shipboard living provides a good example of an infectious disease incubator.

One liveaboard company, Nautilus Adventures, is addressing the problem. In a message to divers expecting to travel on its Socorro-bound craft, they have said '"A medical professional from a local hospital is attending our SeeCreatures dive centre to complete a medical assessment for all embarking guests and crew. We will be offering a complimentary makeup trip and local hotel stay at our expense for any guests with a fever over 100.4°F."

So, What to Do?

Perhaps the first thing to think about before traveling is your age and health. The death rate is 3.4% and evidence indicates that death from COVID-19 infections is age-related. Death rates from China show an increase in every age category of those 40 and older, with exponential increases in those in their 60s, 70s, and 80s and older.[3]

It has 93,160 confirmed cases as of March 4th in a world of 7.8 billion, but keep in mind that it is not lurking in every corner. For now, the risk is considerably lessened if you're staying close to home.

But, if you are considering embarking on dive trip, there is much to think about. Consider this list.

1 https://www.japantimes.co.jp/news/2020/02/28/national/hokkaido-emergency-coronavirus/#.Xlv_2ShKg2w

2 *https://academic.oup.com/jtm/advance-article/doi/10.1093/jtm/taaa030/5766334*

3 https://www.worldometers.info/coronavirus/coronavirus-age-sex-demographics/

1. Someone who has been exposed can travel up to 14 days before being symptomatic, but will be an active carrier and virus spreader. The incubation period could be much longer (one source mentions 27 days) so this guidance could change.[4] So officials will always behind the curve in predictions about destinations and you can unwittingly enter areas that are contaminated that have not been discovered.
2. If you get the virus in a foreign country, you will be treated in their health system and remain under the laws of that country. You can presume that all your traveling companions will be required to remain.
3. If you don't get the virus and are still subject to quarantine, you will have a long, anxious wait, perhaps as much as two weeks without going anywhere.
4. With daily news about the spread of the virus worldwide, traveling during this period with so much unknown about the virus and where it will erupt could shroud your holiday in great anxiety.
5. Once you arrive at a destination, you may be concerned about leaving your quarters, going to restaurants and touring, and decide to curtail your activities. You may feel obligated to avoid every Asian/Italian/Iranian you encounter in airports, towns and resorts and dodge their presence. If you're one to worry about such things, you will not have a fun trip.
6. Booking a trip a few weeks or more before your departure sends you into entirely unpredictable circumstances.
7. Your travel insurance, unless it is cancel-for-any-reason insurance, will probably not cover your trip. Most other travel insurance policies will not cover you if cancel because you are fearful of the disease; they only if there are official actions by nations, airlines trip providers and hotels. And the policies differ so broadly, that the extent to which you are covered may be very limited. Cancel-for-any-reason insurance will cost up to twice the amount of a standard policy and usually covers about 75% of the expenses.
8. If you have made flight plans and decide to cancel, you can rebook your ticket within a year (with a penalty fee); some hotel and tour operators may give you credit, but for the most part you will lose what you have paid and have no vacation.
9. You have more information to decide about an April trip than you do a July trip, or a December trip. Will those months be any better for a dive trip? Today, your guess is as good as anyone's.

4 https://www.pharmaceutical-technology.com/news/coronavirus-incubation-period-27-days/

Bottom Line

The adventurous traveler should certainly take the risk of contracting the virus seriously, but there is no need to panic. Consider the reward of travel, the potential risk of your destination and decide whether the information you have makes you and your traveling companion comfortable enough to travel. If you decide to depart, take all the proper precautions and don't look back. Enjoy your diving.

Finally, this worldwide coronavirus outbreak is still evolving, and health advisory and travel information may change. The best way stay informed with accurate health guidance is to be attuned to information available from your state health department[5], CDC[6], and the WHO[7].

– Ben Davidson

5 For example, see: https://www.health.state.mn.us/diseases/coronavirus/index.html
6 https://www.cdc.gov/coronavirus/2019-ncov/index.html
7 https://www.who.int/health-topics/coronavirus

The Death of an Insured Diver

and why his wife could not collect

When Charlie Hillebrandt, a resident of Sulphur, Louisiana, died during a dive in Cozumel, he had basic and supplemental life insurance coverage through plans his employer provided from the Unum Life Insurance Company. Both policies provided for payment for losses caused by accidental bodily injury, but stated that losses "caused by, contributed by, or resulting from . . . disease of the body" are excluded from coverage. Unum has discretionary authority to make benefit determinations and under both plans, the beneficiary was

required to show that a covered loss occurred. And, as Shakespeare's Hamlet said, there's the rub.

A Diver's Death

Hillebrandt, 58, was scuba diving in Cozumel on May 3, 2015, when he surfaced due to difficulty breathing. He soon passed into a coma and was airlifted to a hospital in Houston, Texas, where he died three days later.

According to his guide, he had complications within the first three minutes of diving when the group descended to 35 feet. The guide helped him to the surface, where Hillebrandt said he was having trouble breathing. On the boat, he received oxygen but soon suffered what the guide described as a heart attack. The guide provided CPR for 30 minutes until they reached the shore, where the ambulance crew took over.

Loss of consciousness within 10 minutes after surfacing is an air embolism

The medical report from the Cozumel International Clinic stated that after his ascent, Hillebrandt's shortness of breath increased and he became unconsciousness. Upon arrival at the clinic, he was comatose, with no palpable pulse, and was diagnosed with overall neurological dysfunction, compensatory respiratory acidosis, asthma, and hypertension, and found to be overweight.

His Houston autopsy report noted his history of hypertension, dyslipidemia, and asthma, and his body showed signs of cardiovascular disease. The report noted that the death may have resulted from a cardiac event due to underlying cardiovascular disease, but that "the scuba diving equipment must be tested in deaths." However, his equipment was unavailable, so the cause of death was undetermined.

The plaintiff, Hillebrandt's wife Christi, submitted claims to Unum for both life and accidental death benefits. She said that it was "[her] belief and the consensus of [her] friends that there was an equipment failure, either mold in a line or some other defect, that was the source of the resulting death."

Unum's pathologist, Dr. Barbara Golder, said that the autopsy showed "no evidence of trauma apart [from] that incurred by resuscitation." She stated that neither cardiac disease nor equipment failure could be ruled out, so she could not determine the cause of death "to a reasonable degree of medical certainty." Unum approved Christi Hillebrandt's claims for life benefits; however, advised that it was awaiting accident reports from Mexico before deciding her claims for accidental death benefits.

When Unum received the records, Dr. Golder again found insufficient information to determine the cause of death, so Unum denied the plaintiff's claims for accidental death benefits. The plaintiff appealed, saying "there is no question that Charlie did not die of natural causes," but Unum denied the claim.

His Wife Files a Lawsuit

On May 5, 2016, the plaintiff filed suit against Unum. She presented additional materials (including a report from forensic pathologist Dr. James Caruso) to support her new theory that Charlie's death was caused by a pulmonary air embolism. The court remanded the case to the plan administrator.

Dr. Caruso believed that Charlie had died from complications of an air embolism, noting that "death due to a primary respiratory problem does not typically present with the dramatic collapse of the individual," and ruled out a fatal cardiac event.

Caruso, the plaintiff's expert, noted that the standard dictum in diving medicine is that a loss of consciousness within 10 minutes after surfacing is an air embolism until proven otherwise. He also noted that "improperly functioning equipment rarely plays a significant role in a standard open-water diving-related death."

However, Unum's expert, Dr. Craig Nelson, with training in dive medicine, noted that Charlie was being treated for hypertension, hyperlipidemia, and asthma, which he treated with inhalers. Charlie had been advised to avoid heavy exertion. Dr. Nelson suggested several possible explanations for the "initial event" that caused Charlie to surface, and it was "possible that the event initiated an ascent that led to the air embolism." He observed, however, that Charlie was able to speak afterward, and that the guide did not note an out-of-control or rapid ascent or breath-holding, and the decedent's respiratory distress on surfacing could have been caused by asthma, immersion pulmonary edema, air embolism, or a combination thereof. He determined that "[t]he initiating event, and therefore the final cause of death, cannot be determined with certainty . . . "the role of natural disease cannot be excluded."

The Decision

Unum upheld its previous denial of acciden-

tal death benefits, noting that it "has not been established, as required by the policy, that Mr. Hillebrandt's death was an accidental bodily injury resulting from an accident and independent of all other causes. . . While the cause of Hillebrandt's death remain undetermined, there is evidence that his medical conditions could have reasonably contributed to or been the cause of his death."

The plaintiff offered to settle before returning to court, and attached a rebuttal from Dr. Caruso, disputing Dr. Nelson's interpretation of some of the evidence. However, Caruso admitted that heart disease or asthma might have initiated the crisis, saying "it was most likely the air embolism from pulmonary expansion, an accidental event, which ultimately caused death."

Unum responded saying that Dr. Caruso's rebuttal actually supported its determination that it could not established that the precise cause of death and asserted it was bound by the terms of its policy, which required that the death be independent of other, non-accidental causes.

The court reviewed Unum's decision, saying the policy explicitly defines covered losses as those caused by accidental injury, and then defines "injury" as only including "bodily injury that is the direct result of an accident and not related to any other cause." It also excludes coverage for "any accidental losses caused by, contributed to by, or resulting from" several occurrences, including "disease of the body." The court said Unum's interpretation of its plan language was reasonable. To overturn the ruling, a plaintiff must demonstrate that the plan administrator's decision was not supported by substantial evidence. Moreover, "when faced with two competing medical views, a plan administrator may exercise discretion and choose one of them."

Unum pointed out, and the plaintiff did not dispute, two probable scenarios would account for an air embolism: (1) a diving equipment malfunction, or (2) underlying medical issues. According to Unum, only the first would constitute an accidental death under its interpretation of policy provisions, and only the second is supported by any evidence that the plaintiff had cardiovascular disease and asthma: he began having trouble within a few minutes of the dive; the lack of evidence of an equipment malfunction; the decedent holding his breath on ascent; too-rapid ascent; and a witnesses who had observed the decedent in the water stated that he appeared to develop a medical problem while underwater.

"The insured has the burden of proving that a benefit is covered, while the insurer has the burden of proving that an exclusion applies." Even if the cause of death remains undetermined, a claim may reasonably be denied due to plaintiff's failure to meet his burden. The plaintiff shows no basis for overturning the plan administrator's decision and judgment must be rendered in favor of Unum, and Christi Hillebrandt's claims were dismissed.

So, fellow divers, keep your health, especially your cardiac health, in mind when you consider your next dive. And keep in mind, many diving deaths are avoidable, are not accidents, and they are not covered by accident insurance.

The article is based on the lawsuit Christi Hillebrandt v. Unum Life Insurance Co of America; Civil Action No. 2:16-cv-0844; United States District Court, W.D. Louisiana, Lake Charles Division, decided February 13, 2019.

Flotsam & Jetsam

Fish Bombing Puts Divers in Danger. Sipadan, Mabul, Kapalai, and other popular scuba locations close to Semporna, among others off Borneo's Malaysian coast, have been subject to more than 80 fish bombing incidents in the last seven months. A diving instructor and two tourists were killed by fish bombs near Kalapuan island last July. A group of visiting divers was stunned by a shockwave while diving near Gaya island on the last day of January. Be warned.

Florida's Coast is Swarming with Great White Sharks. The research organization Ocearch has recently tagged five great white sharks swimming around the Keys and the Gulf Coast. They seem to enjoy the Gulf's warmer waters, but they don't normally travel so far north. It is possible more of these sharks are sharing the Florida coastlines in search of their next fishy meal. On February 10, a group of divers with Walker's Dive Charters encountered a 20-foot specimen at Breaker's Reef off Riviera Beach. Other Florida divers should keep an eye out.

Join this Bahamas Reef Fish Survey Expedition. You can explore beautiful underwater sites with New England Aquarium divers on this tax-deduct-

ible expedition to the Bahamas aboard the *R/V Coral Reef II,* April 11-19. Using techniques that you will learn from Aquarium staff, participants will gather data on fish populations and their habitats while gaining experience with scientific diving methods. It's a way to increase your knowledge of reef fish identification and behavior while helping to ensure diverse and healthy animal populations. Be prepared to spend a lot of time diving with a great group of people! For information, Chris Bauernfeind at **cbauernfeind@neaq.org** or 617.973.5248.

Clive Cussler Passes. The prolific and popular author of adventure novels featuring the recurring hero Dirk Pitt, has passed at the age of 88. Dirk Pitt was a marine engineer with a government agency, an ocean-going version of James Bond and Cussler's third novel, *Raise the Titanic!* established the popularity of his genre of writing. His books are easy reading for those on dive trips.

Stop the new Grand Cayman Cruise Ship Port. A judge has ruled in favor of conducting a judicial review of the Cayman government's planned referendum on a proposed $200 million cruise liner port and berthing facility that threatens to destroy large areas of coral reef. The government tried to proceed before an updated environmental impact assessment was completed. Meanwhile, single-use plastic will be banned on the island from next year.

"GBR is Down to the Wire." Australia's Great Barrier Reef could be heading for a third major coral bleaching outbreak in the space of five years if high ocean temperatures in the region do not drop in the next few weeks, says Prof. Terry Hughes, director of the ARC Centre of Excellence for Coral Reef Studies at James Cook University. Heat stress is already building across the world's biggest reef system, with reports of patchy bleaching already occurring. But a major widespread event is yet to take place.

Herding Mermaids. The waters off Qatar have been discovered to be home to the world's second-largest population of seagrass-eating dugongs, sea mammals not unlike manatees and said to have caused the ancient myth of mermaids. At the moment, hundreds of these animals, normally secretive and solitary, are herding, but scientists do not yet know the reason for this.

Underwater Photographer of the Year. Greg Lecoeur (see "Two Shark Attacks on Divers" in this issue) has been awarded Underwater Photographer of the Year 2020 by the most prestigious UPY underwater photography organization led by Alex Mustard. This picture was taken on our Antarctica Expedition with record-breaking free-diver Guillaume Néry.

Deco Guru Dies. Dr Bruce Wienke, one of the most highly regarded scientists in the world of scuba diving and decompression theory has died. He was responsible for the Reduced Gradient Bubble Model (RGBM) algorithm used in many diving computers including Suunto, Cressi, Atomic, and others.

DAN Dive Accident Insurance. In last month's article, "The Ins and Outs of Trip Insurance," we erroneously confused dive trip insurance with dive accident insurance. DAN's dive trip insurance does indeed cover those 70 and older. Rachelle Deal of DAN now tells us it "offers dive accident insurance coverage options for divers of over 70 years-of-age in all states (with the exceptions of Vermont and Washington). Plus, the Guardian Plan is still available for those of 70 years and older in 39 states."

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