

undercurrent

The Private, Exclusive Guide for Serious Divers

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M/V Yemaya, Coiba Island, Panama

An alternative to Cocos and Mapelo

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Dear Fellow Diver:

If backrolling into a four-knot current, grabbing a submerged buoy line to descend 100 feet into a field of anemone-covered black coral, and finning over seamounts frequented by schools of tuna, amberjack and pelagics appeals to you, then read on. The Yemaya's captain, David Spell, formerly of the Nekton Rorqual, told me, "If you see the buoy under the surface, don't go."

After motoring several hours from the Yemaya's anchorage in Panama's Amazon-like Rio San Pedro to reach the Pacific, then another hour to Isla Afuerita, schools of jumping devil rays welcomed me to Coiba, a 250-square-mile UNESCO Nature Reserve. We traveled around the uninhabited Coiba Island, with anchorages at several locations.

Sportfishers know Coiba's Hannibal Bank as a destination for record-breaking sailfish and marlin. For the diver, Coiba is a deep, open and sometimes rough, blue-water opportunity to view dense schools of tuna, jack, mullet, golden rays and, perhaps, a rare sighting of a billfish. Add jellies into the equation, including stinging "strings of gold" and mid-water tunicates. At depth, thick plankton darkens the water. Most of my dives were 75 to 100 feet.

Divemaster Diego Mejias, who previously worked on the Undersea Hunter, channelled Forrest Gump when talking about Coiba's totally unpredictable diving. "It's like buying a box of assorted





chocolates and not knowing what you are getting." During a day when several giant mantas soared above, followed by a three-foot green turtle, I also spotted a nudibranch. The underwater terrain is largely volcanic rocks.

Water temperatures varied from the low 70s to 80 degrees. Visibility, created by thermoclines, ranged from 10 to 80 feet, and all these differentials sometimes occurred during the same day, or even a single dive. Everyone wore multiple layers. I wore a 5mm over a skin with a hood and gloves. Most dives were as deep as 100 feet and it was easy, without diligence, to lose track of depth.

At Christina's Reef, when not distracted by swirling schools of blue trevally and spadefish, I saw an adult rockmover. Juveniles appeared like sideways-moving leaves with horns. Despite sea-horses, gobies, frogfish and other small critters, Coiba is not a destination for macro lovers. At Washing Machine, where surge can spin a diver over the top of the seamount, thousands of blue-striped

grunt, jacks, blue runners and
out of harm's way.

Yemaya's spacious dive deck has benches with lifting seat cubbies. Two shower-head hoses are on a lower dive platform. There is a camera rinse tank and shelves, many electrical outlets and an air hose. The two closest heads are on the upper deck. Everyone used Nitrox, and analyzing was required before entering the dinghy. After his boat safety briefing and tour, Adonis-like Diego gave me a water bottle I could refill from a large purified container.

All diving was from a Bimini-covered fiberglass dinghy that looked spanking new. When the Yemaya is full, as it usually is when it makes Malpelo and Cocos trips, two dinghies and divemasters are used. Each seat had a tank holder with underseat cubby. There's a sturdy ladder for reboarding, and crew wanted us to board hands-free so we wouldn't fall when there was swell. Rides to dive sites varied between five and 20 minutes. There were occasions when the Yemaya moved a short distance to the next site while we were diving. The crew loaded all our gear, including fins and masks. Lorenzo Pilati, our assistant divemaster-in-training, who had spent most of his dive career in Southeast Asia, and Captain David also dived with us.

Green turtles were frequent sightings, and white-tip reef sharks were the norm for most dives. The latter either swam alone or in pairs but sometimes rested in groups on the sand or huddled in cave-like rocks. I also saw schools of jack, manta and eagle rays, electric rays buried in the sand, blue Pacific triggers building their nest, and yellowfin tuna.

Strong currents required direct descents, even for those carrying large expensive cameras with multiple strobes. But that didn't apply to me or the other divers, two Frenchmen and a "female friend" of Diego's, who used point-and-shoots. Currents can be too unpredictable to pass around cameras while divers linger on the surface. Diego cautioned us: "If you get lost from the group and find yourself in blue water, surface without making a safety stop. Cross currents can carry you a long distance with everyone going a different direction." So I hung with Diego.

Wahoo Alley, our check-out dive, could have been named after its many guitartfish. My descent was faster than the other divers, and with visibility being so poor, I missed the group. After watching a large school of wahoo, followed

by schools of barracudas and jack, whizz by, I headed up to abort the dive, and Diego, a welcome sight, found me soon after.

Despite carrying a video camera, Diego kept an eye on all of us. He was excellent at pointing out both small critters and anything of size above us. He tended to swim fast, sometimes unavoidably, against the current, burning up the air of the other divers, including that of Lorenzo and Captain David. I was grateful for his strength and skills, but his female buddy, who was there writing an article for a Costa Rican publication, was definitely a distraction. Between morning dives, they would frequently kayak to a nearby beach. While the Frenchmen and I were always on time for our 8 a.m., 11 a.m., and 3 p.m. dives, we sometimes had to wait for the couple. Once we had to stop the dinghy to retrieve a cap she left on the beach. On one dive, when she ran out of air, she surfaced too quickly. Instead of returning for an additional safety stop to prevent DCS, Diego lowered her computer to 15 feet for eight minutes. I think Diego evaluated that she was physically OK and didn't want her computer to lock up. She borrowed a photo card reader, diving gloves and a camera, and downloaded everyone's photos into her

Hawaii Shark Feeding Tour Controversy Leads to Dismissed Lawsuit and Arson

It's been quite a month for North Shore Shark Adventures in Oahu. Their good news is that a lawsuit against them was dropped, due to Federal "secret involvement" in the case. The bad news is that two of its dive boats caught on fire, and investigators believe both were due to arson.

As a "swim with the sharks" dive operator, North Shore hasn't gotten along well with the locals. Last year, the dive shop wanted to start sending boats to Maunalua Bay, but irate residents nixed that, saying their chumming the ocean to attract sharks and putting clients in cages to watch them eat was too close to where the locals swim and surf. State legislators tried to ban shark-feeding tour operations in the state, but Governor Linda Lingle vetoed it last July.

Three North Shore employees went to trial in January for charges of shark feeding within state waters (it turns into federal waters three miles from shore), a petty misdemeanor under state law, punishable by up to 30 days in jail and a maximum fine of \$1,000. But they were spared when a state judge threw out the charges. The reason? Federal officials refused to submit a user's manual and related materials for a top-secret tracking device also used in terror and drug-trafficking cases.

David Hayakawa, attorney for one of the defendants, told the *Honolulu Star-Advertiser* that the legal team sought the user's manual and other materials related to a "secret law enforcement GPS" that officers with the National Oceanic and Atmospheric Administration (NOAA) used to track shark tour boats' location. The tool was at the center of the case because "It's the only thing that could prove that they were within the state's three-mile limit," said Hayakawa. But "law enforcement chose to use a device that they could not utilize as evidence in court." NOAA and the U.S. attorney's office violated the court order to turn over the documents, instead submitting a redacted copy, claiming that lives could be at risk if they had to disclose information about the device. Therefore, the judge threw out evidence tied to the GPS device, and granted the defendants a dismissal of the case.

That hasn't stopped the controversy. North Shore has suffered not one but two cases of arson to its boats in Haleiwa Harbor in less than a month. Around midnight on January 7, the *Kailolo* was destroyed by an intentionally-set fire that also damaged a nearby boat. Damage was estimated at \$225,000. On January 24, the *Kolohe* was set ablaze, again near midnight. Firefighters extinguished the blaze within 10 minutes, but the fire damaged the bow and the cabin. No one was injured. Police haven't found any witnesses. Now North Shore is down to one boat, and owner Joe Pavsek says he'll be ready if someone tries to burn that one. "The fires have made me put 17 of my employees out of work."

Pavsek said he stopped chumming waters for the sharks months ago. Now his new marketing approach: If you don't catch a fish or see a shark, you don't pay.

computer. Then there were her special requests for food, forgetfulness and utter lack of dive etiquette. Wish I could get my hands on her finished article, if it ever got written. However, the crew of eight, all from Panama, couldn't have been more helpful. They were gracious, warm and conveyed their friendliness with very little use of English.

At Prosper Rock, we were cautioned about surge that could carry us sideways about 10 feet. A school of six large whitetips, waiting for their night feeding, rested on the bottom, along with several sizable southern stingrays and crowns of thorns. Yemaya uses a dropped anchor line to descend and ascend on many dives. At Roller Coaster, I backrolled into a school of circling barracuda. Humpbacks circled the buoyed mooring but departed as we approached. Strong incoming currents brought large red snappers, and jacks.

Frijoles could have been named after white-tips rather than refried beans. Schools of silver and striped spadefish circled us, and I was lucky enough to come across two frogfish, some free swimming morays, a few lobster, and another octopus. Gorgonia and sponges dwelled among the rocks. While there were a couple options for night dives, Diego gave the experience a poor review. With the cold water, we all passed. Diego warned against swimming near beaches, saying, "The only inhabitants there are caimans and American crocodiles."

The Yemaya is spacious and comfortable, but it's an old, 115-foot-long, steel-hulled boat renovated from service as an industrial workhorse, so it's quirky and a bit of a "rat maze." On my introductory tour of the boat, I was shown this route to my room: Walk to the upper deck, then back down, and either walk through the "always open" bridge or around the bow from the starboard to port deck. Finally, I entered the doorway of a short hallway leading to my master suite. However, on the last day, one of the French divers pointed to a port-type door. "That goes to your room." Wish he had shown me the shortcut a few days before.

I enjoyed two large, port-side, curtained windows, a built-in TV, a full dresser and drawers under a high platform bed. More storage there than in my own bedroom. The equally spacious tiled bathrooms had views from two full starboard windows that I could see from my sizable shower, and a sink vanity with multiple lights over the mirror. There was,

Panama's Coiba National Park

Coiba National Park, located in the Gulf of Chiriquí, is a UNESCO Natural Heritage Site, comprising a 1,700 square-mile island plus 38 smaller islands. The islands are uninhabited, remote and wild. Endemic land and marine species, as well as their migratory routes and reproduction sites, are protected, in part, by the island's inaccessibility.

Its Tropical Eastern Pacific location, which includes the Cocos, Malpelo, and Galapagos Islands, is impacted by five converging oceanic current with a 16-foot tidal variation every six hours. Its proximity to the continental shelf creates deep, open ocean conditions and nutrient-rich waters that attract pelagics not usually seen so close to shore. Deepwater sea mounts, pinnacles and drop-offs, volcanic substrata, shallow coral reefs, rocky shores, beaches, mangroves, estuaries, sand and mud areas offer a diversity of marine habitats.

The island's ancient tropical rain forest, surrounded by 150 miles of coastline, has numerous rivers, creating a mangrove habitat for both caiman and American crocodiles. The park is home to one of the largest flocks of scarlet macaw, and nesting sites for the rare and illusive crested eagle. Whales (including humpback, finback, orcas and sperms), dolphins and other marine mammals are common.

Around 2000 B.C., a Central American mountain tribe called the Chibcha built fishing camps on Coiba and several islands nearby. Ancient fish traps can occasionally be sighted in intertidal zones. Coiba was settled by 1550 B.C., when Spanish invaders either exterminated or moved the natives to work in the gold mines of Darien on Panama's mainland. Coiba remained uninhabited until the early 20th century, when a penal colony was established there. Considered similar to the notorious French penal colony Devil's Island, near French Guyana, Coiba closed in 2000. Its reputation alleged the disappearance of hundreds of people, but its offshore distance, strong currents and healthy shark populations deterred escape attempts.

however, a shortage of hot water. I lucked out because the two Frenchmen were given the second master suite, as it had two beds, along with porthole-type, port to star-board windows. Rooms on the main dive deck had bunk beds with regular windows. From the main deck, I walked to the main hall, which had a video room and small library but lacked fish and critter ID books. While the hall was adjacent to a galley where food was primarily prepped, most of the cooking was done on a grill behind a bar on the upper deck. The stern upper deck held some chaise lounges for sipping cocktails but after dinner, we usually headed off to our rooms to read.

The gifted chef, Juan Carlos, changed into his professional hat and jacket for every meal. Eggs were available at 7 a.m., along with fresh fruit, yogurt and cereal. Daily, Juan Carlos made juice from papaya, pineapple, tamarindo, passion-fruit and watermelon. After the first dive, he was waiting for us with hot chocolate and a freshly baked empanada or other tasty Panamanian goodies. Our introduction to his dinners, served semi-buffet style on the al fresco upper deck, was a scrumptious filet of corvina grilled in butter with capers and herbs. There was a fresh salad at every meal, sometimes a homemade soup, and fresh vegetables with potatoes or rice. Twice daily, I gorged on the homemade desserts of flan, cakes, mousse, ice cream, and plenty of chocolate, even a milkshake. Entrees were primarily seafood: lobster, shrimp, calamari, octopus, grouper, sea bass, sierra mackerel -- all cooked to perfection. His final meal, a super-sized pan of paella, was incredible. It's incredibly easy to gain weight on this boat, but I enjoyed every morsel.

Our last of 14 dives was at Isla Jicarita. Crammed into the crevice of a small rock were four or five white-tips. This is Coiba's version of a muck dive. A seahorse wrapped itself around a coral on the sand, and several sea goddess nudibranchs, eagle rays and a school of bright yellow- and black-striped snapper caught my attention. As the Yemaya lifted anchor to head back to the mainland, a school of bottle-nosed dolphin surrounded us, a farewell to a great dive trip.

While Isla Coiba is comparable to the big shark action of Cocos and Malpelo, you're closer to the mainland, skipping the multiple-hour, round-trip treks to those destinations, and enjoying calmer night anchorages. You've still got currents and low visibility to deal with, but for blue-water dive enthusiasts, there's plenty of fish life to go around.

M/V Yemaya, Panama

Diving (<i>Experienced</i>)	★★★★
Diving (<i>Beginner</i>) Don't Go!	0
Attitude	★★★★★
Service	★★★★★
Food	★★★★★
Accommodations	★★★★★
Money's Worth	★★★★★

★ = poor ★★★★★ = excellent
Worldwide scale

--M.S.



Divers Compass: Not knowing there were only three paying passengers (I was told there would be eight), I opted to pay \$90 more for a master suite, for a total of \$2,610; ensuite cabins cost \$2,650 and shared-bath cabins are \$2,400 . . . Yemaya makes seven-day trips to Coiba, and also combines the island with Malpelo or Cocos for 9 to 12-day trips . . . Nitrox is an additional \$150, and the park fee is \$20 . . . Because of my evening arrival and 6:45 a.m. pickup (4:45 am on my watch), I stayed at the Country Inn Amador, a basic Holiday Inn-type hotel on the route to Puerto Mutis, where

the boat is moored . . . When I received bundled charges of \$775, Kirsten Treais of my dive travel agency Amazing Adventurers told me, "This is the way they do it." I don't know whether it included the single supplement, transportation or

another mark because I was unsuccessful in even getting an itemization; it stank but it was two days before the trip, and how could I cancel? . . . Our shore visit to Coiba's famous Penal Colony, built between 1903 and 1919, was led by a former 12-year inmate and it's a not-to-be-missed excursion. Yemaya's website: www.coibadiveexpeditions.com/coiba

Virgins, Little Cayman, Palau, Sipadan...

Trash is drifting, sea life is missing, but these dive sites still shine

Southern Cross Club, Little Cayman. Here's one dive operation on Little Cayman that often gets overlooked, but not by Chip Wright and his wife, Lisa (Hebron, KY) who have made two visits in the past four years. "What makes it different is the non-resort, non-hotel feel to it. There are only 12 cottages, most of which sleep two families or couples side-by-side or, in the newer buildings (which I recommend, top-and-bottom.) There is one honeymoon suite, a cottage that sleeps a single couple. The newer buildings are designed to be as green as possible, and each room also has a private outdoor shower overlooking the beach. Some sites we visited were repeats from our first visit, and the reef looked healthier and the fish were more abundant. Divemasters Mike and Kristian are especially good at finding the smaller critters. We found loads of shrimp and crabs, spotted drums, seahorses and an enormous grouper getting cleaned by an army of helpers.

"There are no room keys. You have ready access to the bar fridge during the day for soft drinks and beer, which you mark on your own tab. The bartender arrives at 4 p.m. to start on the mixed drinks. Chef Ron and his staff have won several inter-island cooking contests. Dinner often consists of a choice of two appetizers, two entrees and two desserts. If it is busy, lunch and dinner may be served buffet style but it will be no less sumptuous. The beach in front is not the most swimmable, due to the sea grass, but it is, however, not bad for snorkeling. Owen Island, a few hundred yards away, is better. Southern Cross Club owner Peter Hillenbrand is making conservation and green tourism a mainstay of his business model. Several cottages have at least some solar power; the toilets are equipped with full- and half-flush

switches. However, not everyone else is getting the picture. Owen Island had far more trash now than it did during our last visit, and we saw more trash dropped or washed up on the beach and resort. That was a dismaying sight but the reefs and dive sites were cleaner than any we saw on our last visits to Cayman Brac, Grand Cayman or even Little Cayman." (www.southerncrossclub.com)

Sipadan. When Alan Dean Foster (Prescott, AZ) returned from there in November, he wrote to fill us in on the latst. "Divers contemplating the long journey to Sipidan should be prepared to encounter a disconcerting amount of garbage floating not only around the island but below the surface. Whether it arrives on the current from the nearby resort islands of Kapalai and Mabul or the base town of Semporna, none of the locals can say. It might even be coming up from Indonesian Borneo. The presence of Styrofoam coffee cups, lost flip-flops and general gunk is disconcerting. Worst of all is the inescapable plethora of plastic bags. One wonders how many are ingested by the local turtles, though the greens and hawkbills appear to be thriving. Sipadan is still Sipadan (provided the current is running), but I preferred nearby Sia Mil, with its giant black and gray frogfish, schools of squid, leaf fish, and devilfish, and nudibranchs. Save for one gray reef and the expected whitetips, not a shark to be seen in four days. Plenty of stores selling dried shark fin in Sabah and Sarawak states, even at the airports. Not much question where the Sipadan sharks have gone – into fancy gold packaging for Chinese visitors to take home. An average of 12 dive boats on site every morning, each one seemingly desiring to put its divers right on top of Barracuda Point. Fishing boats everywhere just outside the Sipadan

Island protected area. Not fun. See the update on my webpage, www.alandeanfoster.com, for a couple of minutes of video of terrestrial critters and such.”

Dive BVI/Katitche Point Greathouse, Virgin Islands. Some of the Caribbean’s easiest aquarium diving can be found in the British Virgins. Susanne E. Howarth (Pacific Palisades, CA), who has well more than 250 dives under her belt, had a great time in December and she wants you to know about it. “Jeff and Casey McNutt emphasize safety and enjoyment, and cater to each individual — trying to take you to sites you want to dive while also choosing sites where visibility and current will be acceptable to your ability. Although I’ve been diving here for five years, they took me to new dive sites on 9 out of 28 dives! The dive staff does not experience significant turnover: there are always new divemasters, but by and large, they stay around for multiple years, and therefore, know the sites well and do a wonderful job of finding and pointing out the interesting sea life. There are about a dozen islands within striking distance for the Dive BVI boats. Depending on conditions, one or more sites are always diveable (barring a full-on tropical storm). Dive sites include a little bit of everything (other than deep wall dives): wrecks, shallow, deeper, multi-level, brightly colored corals, sand patches, big stuff, little stuff, etc. The windy conditions on some days caused lots of surge, current and sometimes choppy seas. However, it was always possible to find a comfortable place. Overall air temperatures were in the low 80s (water temps were 79 to 80 degrees), with a shower or two on any given day, and glorious weather otherwise. Dive BVI prides itself on “Gucci Diving”: They will take care of your gear from the day you arrive to the day you depart. I pulled a muscle in my back and therefore, routinely took my BC off in the water, and the divemasters willingly pulled it out and onto the boat for me.

“Virgin Gorda is tiny and not overdeveloped. Friendly and easygoing locals. There are perhaps two five-star restaurants on the island, the Sugar Mill at the Little Dix Bay Resort and the main restaurant at Biras Creek Resort.) There are also a handful of places fun for lunches, drinks and

casual dining, including Leverick Bay Resort, the Top of the Baths restaurant, the Bath & Turtle, and Saba Rock Resort. Katitche Point Greathouse, where I stayed, is the kind of home we all would love to own — spacious, luxurious and with a fine attention to pampering you. Everything is in perfect condition. Clearly the owners have appointed this villa to satisfy their own tastes — i.e., not with the typical second-rate furnishings one finds in most rental properties.” (www.divebvi.com; www.katitchepoint.com)

Sam’s Tours/Sea Passion, Palau. Most divers prefer to take a liveaboard to dive these waters, but if you want to sleep on land and are happy with day boats and perhaps some day touring, consider Sam’s. Laura A. Sonnenmark (Alexandria, VA), dived in the 82-degree water in December. “Sam’s has been described as ‘organized chaos’ but somehow it all works. The staff is friendly, helpful and competent. The divemasters are a mixed bunch but good to superlative. Dives were all led, though they were considerably tolerant of the more experienced divers. (Sometimes, we thought they were too fast for us, but you know how photographers are.) Hot showers on premises and drivers ready to take you back to your hotel whenever you are ready to go. The Bottom Time Grill is a great place to grab a beer, burger or sashimi after the diving day, but before you do that, check out the dock around 5 p.m., when the elusive mandarin fish come out every day to do their little love dance, as well as other interesting critters and fish. Sam’s dock was a better night dive than the one we paid extra for at Jake’s Floatplane. The boats are small but with two powerful engines. There are no heads. (Call for a “current check” when nature calls.) Rides out to the reef are at least 45 minutes but the ride through the beautiful Rock Islands never gets tiring — unless it rains, of course, which it does, suddenly and thoroughly, so bring a lined raincoat.

“There are a lot of different nationalities at Sam’s, both among the crew and the clientele. Americans, Europeans, Aussies, non-Japanese Asians — we met many interesting and lovely people. The long rides and lunch on the beach provided opportunity for conversation and good times. The diving is, of course, spectacular, with

plenty of sharks. We went to either Blue Corner or German Channel nearly every day. When the divemasters found out we were also very interested in macro and other critters, they tried to accommodate but usually we just went along with the rest of the guests (groups are no bigger than six divers). The mantas are spectacular but the shrimp, gobies, leaf scorpionfish and cuttlefish are impressive in their own way as well. Wish we had done the full-day land tour of Peleliu rather than tacking it on to a two-dive trip to Peleliu because two hours was not enough to really explore the battle sites. Also, I didn't think the reefs at Peleliu were that much different from the ones further north. Dive booties are sufficient for the trek to Jellyfish Lake, but bring Tevas. I wish Sam's would require a check-out dive; there were some newbies, and nobody should do their first openwater dive at Blue Corner. Buoyancy was a real problem for many, but the divemasters keep a watchful eye out for everyone. (I wish all the dive ops would

impress more firmly upon their customers the need to keep their fins and hands off the coral!

Sea Passion is convenient for those diving with Sam's — a 10-minute walk or a three-minute boat ride (Sam's picks their divers up from the Sea Passion dock every morning). The rooms are large and comfy, with a separate sitting area, large bathrooms (bad lighting, though), and some have balconies. Not really set up for divers, but we managed. They cater to mostly Japanese clientele, but there were plenty of Westerners, and they provide both a Japanese and Western breakfast. The small pool was somehow always chilly, but you can snorkel in the lagoon (there are a half-dozen giant clams). Sure, the Palau Pacific Resort is more luxurious, but when you are diving from 9 a.m. to 4 p.m. (sometimes earlier, sometimes later) every day, why pay for extras you will have neither the time nor the energy to use?" (www.samstours.com; www.palauseapassion.com)

Scuba Tanks as Lethal Weapons

Videographer loses his arm

On the night of January 3, Cindy Burnham of Fayetteville, NC, was in her pajamas, leaning over the sink to brush her teeth, when she heard the garage door rising. That meant her husband, technical diver and videographer Rick Allen, was home. The next thing she knew, Burnham had been thrown to the floor several feet back, with shards of glass in her face from the shattered mirror.

She ran to the garage to find her husband. "The door was blown out," Burnham later told the *Fayetteville Observer*. "I could see my husband on fire inside the garage." She grabbed a fire extinguisher to put out the flames on Allen's back, and then called 911. While Burnham only needed 12 stitches to her face, he was put in critical care at the hospital. One hand had been severed by the blast, his left arm needed to be amputated at the elbow and he had burns on his legs and back and left side.

The cause of the tragedy: an 80 cu. ft. scuba tank containing 100 percent pressurized oxygen. According to Steve Burton, a dive equipment technician and editor of ScubaEngineer.com (www.scubaengineer.com), what apparently happened was the tank was knocked over, either by Allen walking by or the garage door bumping against it. "That likely hit the valve against something as it toppled over, and the mechanical shock caused the valve to be explosively ejected, followed milliseconds later by the fiery detonation of the scuba cylinder."

Note that the tank was an oxygen cylinder, and not a typical diver's compressed air tank. "Rick Allen was a technical diver trained in the use of pure oxygen to shorten decompression stops after very long

dives,” says Burton. “I would guess that not even one diver in a thousand keep compressed oxygen cylinders at home, in comparison with the common compressed-air tanks found worldwide in dive centers.”

That may be true, but even the standard diver’s air tank can wreak plenty of havoc. For example, two Polish divers were killed and two others seriously injured from a tank explosion last September while on a dive trip at the Croatian island of Vis. Croatia’s transport ministry said the tank exploded while being unloaded from a boat onto the dock, and the cause of the blast was most likely a popped-out valve. One woman died on the spot, another died later in the hospital from head injuries.

Back in August 2009, an Australian dive master lost his right hand and suffered major injuries to his right leg when a scuba tank exploded. Murray Amor, the equipment service manager at South West Rocks Dive Centre near Coffs Harbor, Australia, was doing a routine refill of the tank when it ruptured and blew into several pieces, tearing large gouges into the building’s brick walls.

“That likely hit the valve against something as it toppled over, and the mechanical shock caused the valve to be explosively ejected, followed milliseconds later by the fiery detonation of the scuba cylinder.”

A standard tank can also have a “hammer effect.” Larry Harris Taylor, diving safety coordinator at the University of Michigan, tells his students that a tank standing alone is a “foot-seeking device” and will most likely fall on the foot of a litigation-seeking attorney. “A single scuba cylinder typically, depending on the composition material and the volume of the cylinder, weighs between 30 and 50 pounds,” he comments. “This amount of mass can develop a significant impact force, even when falling only a short distance.” On his website, Harris posts photos (www.mindspring.com/~divegeek/toe.htm) of an injury sustained by a diver when a single steel 72 cu. ft. tank standing upright next to a wall was accidentally knocked over and fell on his foot. His big toe was crushed into multiple fragments, and while he didn’t need surgery, the guy missed diving for eight weeks while his toe healed. He was wearing leather sneakers at the time of the incident, but one can only imagine if he was wearing dive booties or going barefoot.

Storing a full tank means that in case of a fire, they’re likely to explode. Regardless, divers still store full tanks, and Burton offers these suggestions:

Either store tanks on their side, or if standing them upright, secure them with a chain, strap or cable to a stationary building support.

- Close the valves, and keep the protection caps or guards securely in place.
- Store tanks in a dry, well-ventilated area at least 20 feet from combustible materials. Don’t keep them in lockers because if they leak, gas can build up in the locker (and woe to anyone who opens the door).
- Put them where they’re not subject to mechanical or physical damage, heat, or electrical circuits to prevent possible explosion or fire. Keep tanks away from foot and car traffic.
- Store empty cylinders separate from full ones.
- Get a visible inspection at your dive shop every year, and a hydrostatic test every five years. Retire aluminum tanks after 10 years.

P.S. Rick Allen is now doing better, but will be in the hospital for a couple of months getting skin grafts. As owner of Nautilus Productions, he’ll be sidelined from his business for a while, so friends and family started a website to collect donations for his expensive treatments and recovery. Get updates on Allen’s status, and donate at <http://getwellrick.com>.

The Next Generation of Rebreathers: II

but questions of safety and insurance coverage linger

In Part I of this feature, which appeared in the November issue of *Undercurrent*, we looked at the history of and developmental issues with closed-circuit rebreathers (CCR), as well as some of the confusion, conflicts and litigation in the dive industry. We left off after briefly looking at the advertising material for the new Poseidon Discovery rebreather, advertised as a “plug and play” unit, with the main module described as dishwasher safe. As they wrote it, “The diving is simple. Open the tank valves, wet the switch on the back of the display, wait for the systems check and off you go.”

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Sounds simple enough, but should the diving consumer wait for the next less expensive version, just as we are doing with personal computers, cell phones, iPods, etc., or do we buy a rebreather as it comes to market? I contacted two experienced rebreather instructors I’ve known for years, Gordon Boivin and Jeff Bozanic (Jeff wrote the book *Mastering Rebreathers*), to get their take.

Gordon still uses open-circuit, but all of his photography dives are done on a Prism Topaz rebreather. He has yet to travel with it because the technology is seldom supported at the destination. “We need to be aware of the need for factory support. Many rebreathers are

made by ‘boutique’ manufacturers and they are simply not able to provide mass market support. Two of the most commercially supported units are the Inspiration and Evolution.” He says he doesn’t “see any benefit to the semi-closed systems (like the Draeger).” For more technical diving, Gordon is confident in the Prism Topaz as an expandable platform moving toward technical levels. For divers primarily interested in recreational limits diving, he says the key, aside from the initial investment, is “whether they have clear diving objectives that will be enhanced by the technology.”

Out of 200 dives a year, Jeff Bozanic does six to eight open-circuit training or specialty dives, where the job requires open circuit or for the quick hop in the water. “I take a rebreather with me (I own 12) twice a month, on average. I take necessary support stuff, such as scrubber material, etc., if the destination does not have it. Transport of cylinders is a pain as they are confiscated regularly, even when empty with valves out. Weight allowance is also an issue, and I regularly ship gear to a destination in advance.” If Jeff were to purchase a brand-new rebreather, “I would choose the Evolution, but I would also look at the Discovery Poseidon and the Titan.” For a purely technical rebreather, he’d opt for the Inspiration (it has larger cylinders than the Evolution) or the Optima. “I think CCR is like open circuit 20 years ago and will eventually replace that ‘old’ technology. You have to focus on the real reasons to use a rebreather: no bubbles (you see lots of stuff) and increased, even double, bottom time.”

While Gordon thinks the cost of operation is about the same as open circuit, Jeff believes it is twice as expensive for standard recreational depth dives but much less expensive for deep tech dives (i.e., you don’t need those expensive exotic gases). Jeff says the most difficult CCR student he had was a diver with 8,000 hours logged, “and it was the retraining issues that were problematic. I see the industry moving towards entry-level training on CCR, and would predict five percent of all entry-level divers will be trained on CCR within five years.”

And the “Green Diver B.S. Award” Goes to . . .

More and more, dive shops and operators are promoting themselves as greener and eco-friendlier. Sometimes they deserve kudos, sometimes they're just blowing smoke. For example, we came across a press release last month from Darcy Kieran, owner of Total Diving in Montreal. To become an eco-friendly dive shop, he announced, Total Diving was going to cancel all ads in printed books distributed door-to-door, like the Yellow Pages. “We're going green as a sign that we care about our planet and our dive sites,” Kieran said. “We need to take more actions consistent with protecting the environment. This is just one step in the right direction.”

“One step?” To us, this seems to be pure exploitation of the green concept. And it sounds like this is just a slick way to gloss over the fact that his Yellow Page ads were a waste of money and didn't bring divers through the door. So we called Kieran and, yes, he admitted that Yellow Page ads aren't generating leads like they used to. “But also I'm tired of these books. I don't understand why I get a full tree in front of my house every few months.”

Does he advertise anywhere else? Kieran says it's mainly online, but print is still in the mix. “But we don't do newspaper anymore.” What about giving up other paper sources like business cards and printed brochures? “Well, we still do that.” How about green efforts to improve the shop, like solar panels to heat the water? “We throw plastic bottles out. Montreal water is good enough for drinking.”

So all in all, going green to Kieran boils down to nixing the Yellow Pages. You need a press release to promote that? “Hey, I don't pretend to be a role model for the environment, but you got to start somewhere. We'll take a first step, then move to the second step.”

Fair enough, but press releases should promote innovative ways to go green. How about finding ways to pay carbon taxes for dive travel? Or getting manufacturers to reduce their unnecessary and excessive packaging. Or taking an active role in local, national or international conservation issues, by contributing a percentage of sales.

Well, Darcy, I apologize for picking on you, but we need the dive industry to stay honest about going green. We need real steps, not rhetoric. Or the next thing we know dive stores will be advertising that they fill their tanks with recycled air.

– Ben Davison

Diver Compatibility

Is there a fundamental compatibility between open-circuit and closed-circuit divers? Should they dive together as buddies? Can they assist each other in an emergency? Or are they so fundamentally different (remember the “retraining” issues) that they should not dive together?

I received an email from one of my insurance clients in Hawaii who wanted to know if they could “accept” (i.e. did their insurance cover it) a rebreather diver on a normal recreational dive trip with 60-foot reef dives. My first thought was that if the CCR diver was properly certified and brought his own equipment, there should be no issues. However, who was the single rebreather diver going to dive with? If he was traveling alone, and there were no other rebreather divers along, he would have to dive with someone on open circuit. Would that work?

Well, if two divers know each other and are familiar with each other's equipment (fundamental buddy check 101), there should be no issues. But I, for one, would have to think before accepting the responsibility of being buddied with an unknown diver using a rebreather I had no clue how to operate. And how about the divemaster in charge? If he has no training or experience with rebreathers, is he capable of supervising the CCR diver? None of us should have any trouble checking out our dive buddy's gear prior to an open-circuit dive, regardless of which brand he is using. Will that work as easily with CCR?

If both divers are CCR-trained and using the same or similar units, they are as compatible a buddy pair as two open-circuit divers. Someone trained on both open circuit and CCR could be a suitable dive buddy under both scenarios, but an open-circuit diver is clearly only capable of diving with another open-circuit diver. A divemaster or instructor who is both open-circuit and CCR-trained could supervise both types of divers, but one who is only open-circuit-trained could not properly supervise a CCR diver. (Most training agencies say that mixing and matching divers with greatly varying experience levels is not a great idea). My conclusion is that open circuit and CCR divers are not currently compatible, unless fully trained in both disciplines, and training agencies, destination resorts and commercial dive charter operators should consider them incompatible. All dive travel operators need to have staff with the proper training, experience and ability to properly supervise rebreather divers before accepting them.

Rebreathers' riskier realities

The new rebreather technology has all the indicators of a true game-changing event, but it has the potential to seriously increase the inherent risk in an already risky activity. Rebreathers are more complicated than normal open-circuit scuba gear, and they depend upon electronics to power their brains, while open-circuit scuba is basically mechanical and dependable.

Modern recreational divers typically use every available means to increase bottom time, and are rarely in a position where a free ascent is possible without potential for complications. The rebreather allows us to push that envelope even further, and that equates to increased risk. With the technology to take us deeper and longer, it is more important for a diver to assess and understand personal limits to a degree never before required. We now have the ability and equipment to get into very serious trouble.

Manufacturers have an obligation to ensure their products are inherently safe. Consumers typically believe responsible product manufacturers will make their product as safe as possible, and they expect manufacturers whose products cause injuries or damage will be taken to task for that. Typically, most manufacturers are insured for such an eventuality, and consider it a normal cost of doing business.

Most mainstream dive equipment manufacturers have product liability insurance, but many rebreather manufacturers are small boutique companies that don't carry it. Some tell me their business is simply too small to be able to afford the coverage, while others tell me their product is so good they don't need it! Whatever the reason, the public needs to know that some rebreather manufacturers may fold their tents if their product is found to be defective or dangerous. That puts these manufacturers into the "home built" category, and I personally would not trust my safety to a unit that was built in someone's garage. The old adage of "buyer beware" becomes rather important.

Like hang gliding, backcountry skiing and many other adventure sports, diving is not inherently "safe." Yet some members of the industry seem to believe that increased risk is not a major issue, that we should push ahead with technology and products, regardless of the increased risk and potential consequences. But manufacturers and training agencies have an absolute legal obligation to protect the public to a reasonable degree. As an insurance agent, I hope the quality of the new wave of rebreathers doesn't keep me too busy handling claims.

Peter Meyer is the senior vice president of a major international insurance brokerage firm, and has been a leading consultant for the dive industry since 1988. He provides risk-management advice and insurance to dive training agencies, retail dive facilities, dive vessel operators and dive equipment manufacturers. He has owned and operated retail dive facilities, liveaboard dive charter vessels, and has taught recreational diving. He lives in Vancouver, BC.

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Who's Responsible for a Diver's Death?

In the U.S., there's no clear-cut way to assign proper blame to guilty parties

As many as 100 American divers die annually. That means the U.S has many more dive-related deaths than, say, the United Kingdom or Australia. We do a better job – at least an equal job – of investigating and explaining dive-related deaths compared with those countries? And are we better at assigning blame to the parties that deserve it?

A recent case involving the death of a British diver brought those questions to mind about whether methods used overseas should be adopted here. Back in April 2005, Thomas Young, a 24-year-old British diver died during an open water certification dive with Jurassic Coast Diving. While diving at 95 feet on the WWI wreck Bretagnem, Young signaled to his instructor and another diver that he had a regulator problem. After grabbing one of the diver's octopus regulators, Young still had problems breathing, panicked and pulled off his instructor's mask. After she pushed him away, Young sank to the bottom, and his body was never recovered.

An inquest with a jury was held to investigate Young's death. The Health and Safety Executive found that Jurassic Coast Diving failed to properly assemble and maintain its dive equipment. After pleading guilty, the dive operator was fined US\$9,400, and ordered by the court to pay additional costs of US\$9,700. It was all public information, and written about in local newspapers.

Australians are investigating the drowning of a novice Chinese diver and the dive instructor held responsible for her death. Xia Dai, 20, drowned in April 2009 while taking a dive course off Queensland's Wave Break Island with instructor Yuri Bonning. While PADI investigated the death and failed to take any disciplinary action, police detectives charged Bonning with manslaughter. At the hearing in October 2010, police prosecutor Reece Foort told the court that Bonning failed in her duty as a dive instructor by not adequately briefing or instructing Dai, especially because weather conditions were poor, and letting Dai dive overweighted and with a faulty regulator. The next hearing will be in May.

Why does a British- or Australian-style inquest not happen here? And why aren't penalty fees assigned to the dive operator if it is at fault instead of entangling multiple parties in a costly lawsuit, or more often, the death is swept under the rug?

Industry expert Bret Gilliam says there are many differences between the UK and our legal systems. "The U.K. has an oversight agency called the Health & Safety Executive (HSE) that aggressively reviews diving training standards, equipment manufacturing, dive operators, etc. They are empowered to intervene and mandate necessary changes as they see fit. They also initiate most investigations using professional diving experts for accident review, and their recommendations can lead directly to criminal charges or lesser fines and punishments. The U.K. discourages the filing of dubious legal claims because the losing party has to pay the other side's costs. This goes a long way to stopping frivolous litigation."

Longtime *Undercurrent* contributor and U.K. resident John Bantin adds, "U.S. litigation can drain funds disastrously from a winning defendant. I know of a British company that has made no profit for two years while successfully defending frivolous cases in the U.S. That cannot happen under English law. The court awards costs to the winner. You have to be sure you have a good case before taking it to court."

Meanwhile, in the U.S., "diving is a self-regulated industry with only rare oversight from OSHA in matters of employee safety," says Gilliam. "If a fatality or injury occurs., heirs are provided remedy through civil litigation, wherein the defendants are named in a personal injury or wrongful death

lawsuit. Acts of deliberate malice such as murder and sometimes acts of egregious negligence are pursued by criminal charges and prosecuted by state or federal authorities. This still allows recovery from the guilty parties in a civil action that would be filed and proceed separately. Also, the U.S. Coast Guard can exercise their authority over U.S. flagged vessels and those with specific Certificates of Inspection allowing them to carry passengers for hire. They can investigate, fine, suspend or revoke licenses, and assist in bringing criminal charges against individuals or companies if events justify such actions.”

The majority of dive-related litigation gets settled before trial, and the details are kept secret. While PADI may investigate all cases that arise, it frequently settles quietly and immediately, with sealed confidentiality agreements so no one knows the outcome. Gilliam, an expert witness who works for both plaintiffs and defendants, says transparency is lacking. “When a case settles, it is usually closeted in confidentiality agreements and non-disclosure mandates that make it impossible to know the facts unless you are privy to the evidence. A lot of facts that might help in overall diving safety and forensic evaluation are not available to the industry or to the public. That’s sad. But whether we need yet another layer of government bureaucrats to oversee this process is doubtful.”

Still, as *Undercurrent* subscriber Dan Clements (Everett, WA) points out, the far-from-transparent outlook the dive industry has accidents does a disservice to divers, as compared to the view taken by other risky sports. “I have climbed major peaks around the globe. Every year, the American Alpine Club and Alpine Club of Canada prepare ‘Accidents in North American Mountaineering,’ a detailed analysis of climbing accidents and fatalities in the U.S. and Canada. It is a useful tool in reconstructing what happened and went wrong. I contrast the climbing analysis with the information contained in DAN’s Annual Diving Report, and find it nowhere near as helpful. My guess is that this is not due to any issues relating to DAN, but rather liability concerns from dive operators, customers, certifying agencies, and insurance companies. Having been on a boat in the Bahamas last year when a female diver died, it would have been extremely useful to know: 1) did the victim disclose any medical conditions; 2) what specific actions did the accompanying divemaster take; and 3) should protocols for surfacing a distressed diver be modified?

“As soon as accident investigators, representing either the operator or injured diver, arrive, information about what happened becomes closely held as both sides jockey for the best legal position. Clever investigators may attempt to influence what individuals may have seen or heard with leading questions, especially when law enforcement is not involved. The diving community would be much better served

Jim Abernethy Catches a Few Teeth

Since feeding sharks is illegal in South Florida waters, Jim Abernethy runs shark tours from Palm Beach to the Grand Bahamas. Plenty of top drawer photographers wanting shots of hammerheads and tiger sharks are his loyal customers. They all say Abernethy knows his sharks.

But on Jan 25, Abernethy was attacked by a reef shark in one of those busy shark moments, leading to a ride on Coast Guard helicopter to St. Mary’s Medical Center with a healthy bite to his arm. The attack happened about 18 miles north of West End where Abernethy was leading a week-long shark excursion. According to witnesses, when Abernethy got back on the boat, he was bleeding profusely. He needed stitches, but is expected to recover.

Abernethy, himself, is not his first victim. In 2008, an Austrian tourist died when he was mauled by a shark during an excursion sponsored by Abernethy’s company.

Abernethy’s trips are controversial. Many in South Florida say he should not be feeding sharks, as they have become much more dangerous due to humans feeding them. “They’re not highly intelligent animals to begin with,” Jason Doty told TV station WSVN, “so you’re down there diving, and if you’re feeding them, they think divers are food. When we’re out spear-fishing they’re super aggressive with us, but they used to not be.”

Abernethy released a statement saying: “Thank you for your concerns and well-wishes, I’m going to be fine. I’ve spent the last two decades of my life in the Bahamas with the sharks that I love. Today’s minor incident will not deter me. I plan to be back out to sea in a few days.”

by an open and full analysis of what happened, and what can be done to avoid similar instances in the future.”

We agree because, as it stands now, dive training agencies do their best to keep all their data to themselves. Everyone is afraid to distribute information for fear it will be used against them. But we gave it a shot, contacting dive agencies to find out how they investigate divers’ deaths, how they find who’s at fault, and how they discipline the guilty parties if their dive operators are at fault. PADI, NAUI and SSI did not reply. Only TDI/SDI was willing to discuss the issue openly.

Its marketing director, Steve Lewis, says the agency spends a lot of time upfront on risk management, educating its members on how to conduct dives and their business practices so as to avoid deaths and injuries. “We require our facilities and instructors to have professional insurance.” If a bad event happens, “the first line of contact is the instructor, who goes through a set procedure, including notifying the agency and the insurance firm about the incident.” Should there be a lawsuit, Lewis says, “our insurance company will appoint counsel. Provided the instructor followed our standards, he or she has our support. Then we have a very good track record of helping them out.”

TDI/SDI is considered the most transparent agency in investigations. Attorney Rick Lesser says SDI has fewer claims than other dive agencies because of its more thorough training and front-end risk management. “Regarding the larger dive agencies, basically their role is to cover up stuff, do damage control, sweep issues under the rug and convince the other people that it’s their own fault.”

Would dive death investigations improve with government oversight? Gilliam thinks the U.S. system works pretty well, although it is far from perfect. “The diving industry is charged with policing itself and when accidents occur, the civil court system allows complaints to be brought and litigation to go forward. Nearly 90 percent of civil litigation settles out of court. I’ve worked over 235 cases since 1973 as an expert witness and trial consultant, and conclude that the system is better than any alternative. Most of the costs are burdened on the plaintiffs and defendants, not the government, and recoveries are generally covered by insurance policies or the personal assets of the defendants. Of course, the insurance companies aren’t happy about frivolous claims, and some defendants that act appropriately get dragged into extended lawsuits simply because they have insurance or “deep pockets” to chase for a monetary payout.”

There is no formal inquest system in the U.S. to gather information just to investigate the causes of a death to improve diver safety. Rarely do police investigate and indict, and whether they do varies by jurisdiction. Not every coroner is a medical examiner — some are funeral home directors, local sheriffs, even justices of the peace. So when someone dies, it’s up to whoever’s in charge. In popular dive areas, the medical examiner evaluates all cases in the same fashion. But in places where there’s not a lot of diving done, with maybe one dive-related death every five years, medical examiners often don’t know what to do with it. And combined with tight government budgets, exams often lead to a quick ruling of death by drowning — up to 90 percent of cases— and no autopsy.

A more formal investigative process may not happen because of the U.S.’s dislike of government oversight, says SDI/TDI’s Lewis. “In the dive industry, there is a preference not to have restrictions and regulations imposed by local governments. Look at Quebec, which mandates that if you

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want to dive in the province you must have a special license and be checked out by a dive instructor, meaning the government takes responsibility for the regulation of diving. That would not be a popular here.”

Perhaps not, but if dive training agencies won't open up about their investigation processes and share them with government officials, then who is supposed to look out for divers?

Peter Meyer, senior vice president of Willis Insurance, which provides coverage for divers worldwide, says “A proper investigative process would help the dive industry by eliminating the regular sequence of rumor, conjecture and innuendo following a dive accident. Lawsuits, to a great degree, are pursued because the families of the deceased get no answers from the industry, and they have to take legal action to get those answers. That's a sad state of affairs.”

P.S.: Once upon a time, the University of Rhode Island issued annual reports of dive death investigations. It was all done by one man, John McAniff, and though he relied on newspaper clippings, coroner reports and reports filed by witnesses, his annual report revealed significant causes of death. In the 1980s, DAN took over that function and their reports began to focus more on medical causes and less on equipment, training, and the roles of the dive buddy and the instructor. Eventually, most of the ancillary information disappeared from the DAN reports, and while today they may report that a diver died of an embolism, the significant events leading to that embolism go unmentioned. It would be a great step forward if DAN could return to the reporting done 30 years ago by John McAniff.

– Vanessa Richardson and Ben Davison

Flotsam & Jetsam

This is News? British researchers surveyed 434 divers (67 percent males and 33 percent females, ranging from ages 13 to 70). Seventy-six percent reported regularly consuming alcohol, and 10 percent smoked cigarettes. Twenty-one percent ages 16 to 59 had used one or more recreational drugs, such as cannabis or LSD since learning to dive. Regarding recreational use, 3.5 percent had used them in the last 12 months, and 3 percent in the last month. The researchers note that recreational drugs change metabolic functions, perception of reality, distance and time, thus increasing the risk of an incident while diving.

Tracking Leatherback Turtles. Another group of British researchers now know more about the migration routes of these ancient mariners, which make multiple 10,000-mile round trips between Africa and South America. They tracked 25 females over five years, strapping simple transmitters powered by four lithium camera batteries on their backs; signals were sent to satellites every time turtles came up for air. One took 150 days to

swim 4,215 miles; another made the deepest dive of 3,500 feet. Maps of their journeys can found at <http://tinyurl.com/4no5xrl>

A \$50,000 Fine for a False Alarm. Diver Colin Smithies from Dunedin, New Zealand, is in big trouble. A massive air and sea search with 40 volunteers was launched for him after he went missing while diving for paua in Titahi Bay. Then two days later, Smithies, 49, strolled into a police station 185 miles from where he was reported missing. Apparently he left Titahi Bay and hitchhiked north, showing up disoriented and distressed. That did not make authorities sympathetic – they charged him \$50,000 for wasting police time and gave him a court date.

Saving Whale Sharks: When we did a pitch this past fall for donations to buy electronic buoys to keep commercial ships away from the hundreds of whale sharks that congregate off the Yucatan, 128 generous Undercurrent readers contributed \$28,000, spurred on by Elaine Matthews who offered to match \$10,000. And she did. There's a diver who puts her money where her heart is.