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*I think more opportunity for going into the villages would be a vast improvement in the Solomon Sea trip. The Solomons are little affected by tourist dollars; some of these islands remain almost unseen by travelers. The launch went ashore a few times, but I never knew about it ahead of time.*

J. Q.

*A real plus for the Solomon Sea is that the small number of divers makes diving flexible, and it's also easy to fill the boat for a charter. Fred seems amenable to letting groups set their own itinerary and explore new areas.*

J. Q.

disappearing tropical sun as they turned in unison on their way down to roost in the green jungle. It would be a moonless night -- a good night for a night dive. Naw, I might just miss this one and drink a cold beer instead.

### **Solomons and *Solomon Sea* in a Clamshell**

The *Solomon Sea* is not overly luxurious, but I found it to be an excellent dive boat. The dive platform is large and convenient, with fresh towels waiting after every dive. Fred and crew were slow to warm up, but once they did, I enjoyed their company immensely. The attitude of the boat is laid back, with few or no diving rules imposed on you, and is bestsuited for experienced divers. Deep freaks will be happy, as plenty of the wrecks and caves are deep, although most dives don't require great depths to enjoy.

The crack and cavern dives in the Russells will probably stand out in memory long after all the big-fish dives have run together, but if I could dive only one, I'd be hard pressed to choose between the Floridas and the Russells. Even with three live-aboards now working in the Solomons, there remains an enormous amount of unexplored territory.

The Solomons are a destination in their own right, but they are definitely a bargain right now as an add-on to Fiji. When I think of Truk, I think of wrecks. When I think of Palau, I think of the big-creature action of Blue Corner. When I think of Fiji, I think of soft corals. And while the Solomons may not match in intensity any of their specialties, it has all of them.

John Q. Trigger

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# **Accidents and Incidents**

## ***Learning from the mistakes of others***

From time to time we report on case studies of divers' deaths so that we may all learn from them. The cases cited here come from the analysis of 1993 deaths by the Divers Alert Network. While the facts are edited from DAN's reports, the commentary is solely our responsibility. This is the second of two parts.

### **Cardiovascular Disease**

Cardiovascular disease, especially when undiagnosed, plays a significant role in diving deaths. It is frequently present in severe form without symptoms until a sudden heart attack or stroke occurs. In general, it's the leading cause of morbidity and mortality in the U.S., killing

nearly a million people per year. The death rate for men is significantly higher than for women.

Heavy physical exertion increases the risk of heart attack or stroke. Given the unique effects of immersion, divers with coronary artery disease may well be taking excessive risk. Although highly motivated individuals who meet certain requirements do dive successfully with coronary artery disease, people with known risk are usually discouraged from diving. Those who dive anyway must understand the limitations imposed by the disease.

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In the following cases there are many examples of individuals who were known to have complications considered disqualifications for diving.

A 39-year-old man had made several dives on a live-aboard dive vessel, then retired to his cabin after dinner at 9:30. After he failed to show up for breakfast the next morning, he was found dead in his berth, cold with rigor mortis. While bubbles were present in his blood stream, the cause of death was congestive heart failure.

A diver on a live-aboard, whose chest and shoulder pain four days earlier had been diagnosed by a physician as musculoskeletal, made a 110-foot dive followed by a surface interval of one hour. He started a second dive, but was brought back to the surface a few minutes later, dead of a cardiac rupture. The chest pain had quite likely been an undiagnosed acute myocardial infarction (heart attack).

A 62-year-old man made a short dive in tropical waters, returned to the boat complaining of fatigue, and quickly suffered cardiac arrest. Autopsy revealed severe coronary artery disease with new and old myocardial infarction.

In several cases, swimming against a current caused enough stress to trigger a heart attack that was either immediately fatal or resulted in drowning. A 31-year-old experienced but uncertified diver made his final dive 200 yards off a rocky coast with four-to six-foot seas and current. He gave no indication of trouble during the dive, but at the end, on the surface, he started swimming rapidly, yelled for help, then became unconscious.

A 50-year-old diver who made a 30-foot dive for 24 minutes in

rough seas with a two-knot current surfaced with his buddy a hundred yards downcurrent from his boat. Swimming against the current with difficulty, he soon lost consciousness. He was eventually taken to a recompression chamber but could not be saved.

A 35-year-old man diving from shore made a surf entry despite current and rough seas, and was carried against rocks by the surge. He was retrieved with some diffi-

culty, but his heart had stopped and could not be restarted.

A known cardiac patient with a previous heart attack and a subsequent angioplasty was diving with his son at a depth of 65 feet near an ocean inlet in an area of strong currents. He was found on bottom in cardiac arrest with air remaining in his tank. The cause of death was drowning due to cardiac dysrhythmia as a result of ischemia. Recent stress testing had

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*Here's a diving story that's full of lessons about buddy diving, rental equipment, and dropping your weight belt in emergencies.*

Three years ago, on a business trip to L.A., I decided to bring my dive gear with me and get wet. Now, I don't know anyone in L.A. who dives, so I called up a shop and got on a charter to Catalina.

Since I was by myself, the shop in charge of the trip buddied me up with a college student who had been certified six months before but hadn't been diving since. I usually dive alone, but the charter rules were that I had to dive with a buddy. Oh, well.

When I got to talking to my newly appointed buddy, she asked me what my highest level of certification was. I told her of the rescue class that I had just completed. At that point, she exclaimed rather loudly, "Oh, my God — I'm GLAD you're a rescue diver!" I started to have bad feelings about the upcoming dive.

My new buddy had rented all her gear — every bit of it total junk — except for her brand-new neon-pink-and-black wetsuit, and the matching pink weight belt. After we had descended, her rented BC turned into the first water-soluble BC I had ever seen. It literally decomposed underwater, with the cummerbund floating to the top. Then her mask flooded, but they hadn't taught her how to clear her mask in her "get-certified-in-a-weekend" course. I tried to show her how, but she couldn't see what I was doing through her flooded mask.

Finally, with her buoyancy all screwed up (her tank was now floating above her head due to the loss of most of her BC), she panicked and shot to the surface. I had to just let her go — I wasn't going to chase her at that ascent rate and risk my own life.

After a slower ascent, I caught up with her on the surface. She was thrashing about in the water, trying to get back to the boat, but was too tired to swim in. So I shouted to her to drop her weight belt. She looked at me with a defensive expression. "No! I just paid \$36 for this pink weight belt, and it matches my wetsuit! HELP! I'm going to drown! Please swim me in!" she cried as she struggled.

I shouted back, "Let ME have your weight belt — I'll swim it in!" Hesitantly, she let me take her weight belt, whereupon I promptly dropped it and shouted, "Oops, I think I just lost it!" She was furious, but we made it back to the boat and lived to tell.

She wouldn't talk to me the remainder of the trip. I can only hope that she thinks her life is worth more than \$36 today.

## *Full Fathom Five My Weight Belt Lies But It Matches*

Christina Young

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shown not enough oxygen getting to his heart during exercise.

An inexperienced 35-year-old, diving for lobster with a more experienced companion who consumed less air, returned to the surface with his buddy when his gauge read 700 psi. They swam under water toward the boat with his pressure gauge reading 400 psi. The companion returned to the bottom because he saw a lobster; when he returned to the surface, the inexperienced diver was missing. His body was recovered later. Although his tank was empty, his pressure gauge still read 400 psi; apparently he had been unable to deal with an unexpected out-of-air situation and had drowned. Heart disease may have contributed to the outcome.

A 42-year-old man with limited experience was participating in a deepwater class offered by a local dive shop. Diving with two companions, he encountered problems on the surface prior to descent. Due to the current, he told one of his companions to "head back in." They had trouble with the current and became separated. In a difficult rescue that took 20 to 30 minutes, the victim was recovered by a wind surfer and brought to shore. CPR was unsuccessful. He had drowned, but coronary artery atherosclerosis had contributed to his death.

## Entrapment

Many diving deaths occurred when divers were trapped beneath the surface. In some cases there was an overhead barrier; in others there was entrapment due to kelp, a drain, or a spillway. In two separate instances, divers were trapped beneath the surface by ice. One diver entered open water in a river that was partly frozen over, became disoriented, and ended up beneath the ice. Unable

to locate open water, he ran out of air and drowned. In a similar case, two divers entered a partly frozen river with low water visibility. A short time later, one diver surfaced and said that he had lost sight of his buddy. The divemaster entered the water to search. Neither he nor the first diver returned to the surface.

Cave diving with a friend, a 33-year-old became disoriented and, instead of ascending, went deeper into a dead-end chamber. He was found at 123 feet with an empty cylinder.

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### *A diver trying to clear the drain in a pond was forced into the drain by water pressure.*

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Several divers were trying to clear the drain at a camp pond; one apparently removed the grate over the drain and was forced into the drain by water pressure. It took rescue teams many hours to retrieve his body.

A man and a woman entered the water from a dive boat before the vessel was anchored. They were in trouble immediately and the boat may have passed over them due to the current. While the woman got out of the water, the man got tangled in kelp and drowned.

A skilled cave diver, mapping a large cave, had penetrated some 8,000 feet and was returning to entrance when he apparently became snagged in a narrow passage. He was freed by fellow divers but had difficulty with equipment and gas supply and died almost immediately.

A diver lost sight of a 50-year-old man diving with him, then surfaced and found him entangled in kelp with his regulator out of his mouth. He was brought to the surface and placed on the dive boat for CPR, which was unsuccessful. He had apparently suffered an air embolism.

A 29-year-old diver was collecting crayfish in a high mountain lake when he blundered into the spillway gate and was trapped by the current. Not only was his buddy unable to free him, the fire department that retrieved his body needed considerable effort to overcome the force of the water.

A 39-year-old certified cave diver and a companion (also a certified cave diver) were for the first time using a scooter in cave diving. One scooter failed, and they tried to continue with one diver using a scooter and the other swimming. The diver with the scooter apparently got lost on the way back to the cave entrance and was found by his companion in a cul-de-sac with his regulator out of his mouth. With great difficulty he was brought to the surface, where physician-directed CPR and ALS were immediately available. He was airlifted to a hyperbaric chamber and received USN Treatment Table 6. There was no response, and he died about 15 hours after the accident.

A 41-year-old woman, diving for artifacts in a river, failed to surface with her companions. After a two-hour search in water with visibility less than two feet, they found her under a ledge in a cavern along the river bottom. Whether she had wandered into the cavern or been carried in by the current, she had been unable to find her way out due to the low visibility.

Ben Davison