

When The Buddy System Fails

One of the basic tenets of safe recreational diving is to always dive with a buddy. The theory is that a pair of divers can better manage difficult situations or emergencies than a single diver can. While this point can be argued, most divers as well as certification agencies subscribe to the buddy philosophy.

Despite this fact, incidents of divers becoming separated are not unusual. The sad truth is that whether consciously or by accident, divers can end up alone underwater during various phases of a dive, and sometimes the results can be disastrous. By understanding the issues of buddy separation, we can help prevent potentially dangerous situations from developing.

Divers become separated for many reasons. Referring to diving fatalities occurring in 2003, the 2005 edition of DAN's Report on Decompression Illness, Diving Fatalities and Project Dive Exploration reveals: "A separation of divers was sometimes a matter of choice and sometimes accidental. In at least three cases, the divers may have panicked after losing contact with their buddies. In many cases, the buddies were separated due to poor visibility. In four of these situations, both divers died."

Dive buddies are often engaged in activities that absorb their attention, and consequently they fail to properly monitor one another. When divers become focused solely on their underwater task, a breakdown in the buddy system is likely. As we'll see, environmental conditions, equipment problems and diver attitudes can all conspire to separate buddies. Whatever the reason, the separation of buddies can be the weak link in the diving safety chain.

Poor Visibility

One situation occurred when two divers attempted to recover a sunken outboard motor. According to the report, the diver in question was a 45-year-old male who had earned his openwater certification five years before. He had not been diving for more than a year; still he and his buddy were attempting to recover a sunken outboard motor from the bottom of a lake.

Apparently, the two became separated in the poor visibility that either prevailed or developed during the dive. The diver's buddy surfaced, but he did not. When his body was recovered from a depth of 90 feet (27 meters) two days later, it was found that his cylinder was empty. While it is unclear exactly what happened to the diver, what is clear is that he was unable to resolve on his own a problem that developed and ultimately ran out of air.

Failures and Malfunctions

Another situation that can lead to separation is an equipment problem, failure or malfunction. If the lead diver in the buddy pair is not conscientiously monitoring his buddy, a problem that causes the following buddy to stop or pause can quickly lead to a separation, especially in poor visibility. In the following report, the divers were in a kelp forest, which, like a terrestrial jungle, is an easy place to become separated.

According to the DAN report, the 41-year-old male diver with an advanced-diver certification had made multiple dives in kelp bed with his buddies and had been having problems with buoyancy control all day. On the fourth dive of the day, the diver separated from his buddies and ascended. Once at the surface, he called for assistance and soon after lost consciousness.

According to the DAN report, "The death was determined to be a drowning secondary to an air embolism. The autopsy also disclosed mild coronary artery disease."

Again, it is unclear exactly what trouble the diver experienced and why he separated from his buddies, but clearly he developed a problem that he could not resolve on his own. Had a buddy remained with him and provided assistance, the outcome might have been different.

The SOB Syndrome

In some cases, divers intentionally depart from their buddies. This can occur for a number of reasons, including the need to check on navigation or to complete a task while a buddy heads for the safety stop. In some cases, a diver with more air will remain below after others end their dives. Depending on their personal attitudes toward safety, some divers may not see close buddy monitoring as a necessity. Any time divers adopt an "SOB" (same ocean, buddy) approach to safety, the cards may be stacked against them.

Such may have been the case for a 52-year-old diver who had received his open-water certification some six years prior to the accident. He and his buddy became separated after about 15 minutes. The buddy eventually returned to the boat and later found the subject diver afloat, unconscious and with an empty cylinder.

The DAN report reveals that the diver had a medical history that included heart disease and that the diver had complained of chest tightness prior to the dive. Although the cause of death was deemed a drowning, it is suspected that a cardiac event may have contributed to the accident. It is uncertain whether a more attentive buddy could have saved this diver when a suspected cardiac event occurred, but it's a thought worth pondering.

The SOB syndrome may have been the undoing of a diver in the following report as well. An experienced 58-year-old male technical diver using a rebreather to explore a wreck at a depth of 104 feet (32 meters) was part of a four-person buddy team. As the DAN report says, "Before the dive, the diver had complained of fatigue; he did not dive the day before with the others in the group. During this dive, the decedent decided to dive alone. Since he had a habit of doing this, the buddy separation did not alarm anyone."

Unfortunately, something went awry, and the diver was unable to resolve the problem on his own. Although an autopsy was not performed, it appears that a cardiac dysrhythmia contributed to the diver's death. After his body was recovered, an examination of his equipment revealed that although the rebreather was out of gas, his bailout bottle was full. Again, we can wonder whether a nearby buddy might have made a difference in the ultimate outcome of this, the diver's final dive.

A similar accident occurred when an experienced 41-year-old male diver using a rebreather remained submerged after the other divers had surfaced. Armed with advanced certifications including cave-diver certification, the diver was with a group diving from a liveaboard, but it appeared he did not have a designated buddy for the dive in question. It would seem the diver made a conscious decision to continue diving alone after the others had terminated their diving. The DAN report reveals that the diver "had a habit of diving long after the other divers had exited the water. He had performed previous dives during the trip that lasted up to two hours." The diver never surfaced from this final dive, and the body was never recovered.

Shallow 'Safety' Stops

Experienced divers and especially technical divers with a significant decompression obligation often consider it "standard procedure" to make safety stops or decompress alone in shallow water. It may be that the divers simply perceive little or no danger in the waters so close to the surface. As this next

accident highlights, serious problems can develop even while waiting to surface from a safety stop in shallow water.

In this case, the 40-year-old was a highly experienced technical diver who had just completed a night quarry dive using a rebreather and nitrox breathing gas. Twelve divers had participated in the dive, which involved poor visibility, and all 12 had ascended to the safety stop at the end of the dive. At the end of the safety stop, all the divers except the subject surfaced. He was later found unresponsive at a depth of 15 feet (5 meters).

A medical examiner ruled the death as a drowning, but an examination of the rebreather revealed that it suffered from poor maintenance and was not functioning properly. According to the DAN report, "There was carbon dioxide absorbent throughout the rig, an oxygen sensor had been inserted incorrectly and was not functioning, and the oxygen addition valve was partially blocked, resulting in a 75 percent decrease in flow. Several loose connections were also present."

Although poor maintenance of the rebreather and its subsequent malfunction may have been the causal factor in this accident, an observant buddy might have detected a problem and provided crucial assistance before the diver perished.

Diving into Danger

Demanding conditions often separate divers from their buddies during entry or exit. While the divers involved in the following report were not injured, the scenario highlights what can be a potentially dangerous situation.

A group of three divers was making a daytime dive on an oil rig some 20 miles off the Louisiana coast. It was March, and the surface waters in the area were heavily silted by runoff from the Mississippi River, reducing the surface water visibility to less than 2 feet (0.7 meters). The surface water was so murky that no light penetrated beneath the freshwater layer, and dive lights were required to see in the clear underlying water. The divers had planned to descend along the leg of the rig, passing through the low-visibility layer, and, if separated, they would join up in the clear waters below. The surface waters were rough, and a current was running at the surface at the time the divers entered.

During the descent, two of the divers experienced problems and ultimately returned to the dive boat. The third diver successfully negotiated the murky layer, and, after arriving in the clear water at a depth of 50 feet (15 meters), waited for the two buddies to join him. The diver waited approximately 10 minutes before searching the area around the leg of the oil rig for the two missing divers.

Unable to find them, he concluded that something had happened, and he surfaced, rejoining the others on the dive boat. Fortunately nothing went wrong, but if the "solo" diver had experienced a problem, he would have been on his own to sort it out.

A similar situation from the DAN files resulted in a fatality. In this case, a nitrox-certified 56-year-old male diver set out from a liveaboard as a buddy in one of two pairs of buddies. According to the DAN report, "The divers were performing drift dives in a strong current. During the second dive of the day, each buddy team became separated. The decedent and his buddy became separated prior to descent. They were the last divers off the boat, and the decedent's buddy went below the surface without him. The diver did not return to the boat, and his body was never recovered. His tank and safety sausage were recovered miles from the decedent's last known location."

As these reports suggest, divers should give careful consideration to a situation in which buddies will

rendezvous underwater. Demanding conditions at or near the surface can leave a stranded buddy “over his head” and in deep trouble. Divers can also find themselves in more demanding conditions after surfacing than they faced underwater, and staying together can be vitally important, if not impossible.

In the final incident, a 29-year-old female with advanced openwater certification, but fewer than 20 dives since initial certification three years before, was completing a dive with a buddy when something went awry.

According to the DAN report, “[The diver] and her buddy surfaced far from the boat and descended again to swim back. The buddy ran low on air, and both divers were fatigued. They became separated, and the buddy was rescued on the surface a few hours later. The decedent’s body was never recovered, though some of her equipment was found 13 days later.”

These accidents emphasize that things can go wrong at the beginning of a dive or on the surface following an ascent. To ensure that nobody is left behind, divers should strive for strict adherence to the buddy system.

The buddy system can be a critical factor in the safety equation for recreational divers. By focusing on this important element throughout all phases of our dives, we can reduce the risk of disaster.

Tips to Help Prevent Buddy Separation

The buddy system is a critical element in recreational diver safety, and, when it breaks down, lives can be at risk. Consider the following to avoid buddy separation:

- Review buddy separation risks when planning dives, and make certain that the goals of the divers, their equipment and the environment in which they dive will not put the buddy system at risk. Independent goals, mismatched air supply and overly demanding conditions can lead to buddy separation.
- Don’t assume the dive begins at some point on or below the surface: It starts as you step into the water.
- When diving in a group, don’t assume that everyone is looking out for each another: Each diver should have a buddy and conscientiously monitor that person.
- Avoid dive plans that require buddies to work independently of one another. Distraction leads to separation.
- When one diver leads and the other follows, the “lead” diver should never assume that the “follower” is following. Maintain visual or body contact throughout the dive.
- Don’t assume the dive has ended once you reach the safety stop. It doesn’t end until all divers are out of the water.