

TRAINING

Kenny couldn't see more than just a few inches beyond his mask as he fumbled along the bottom. He was on a contract job for the city manager, an old friend who often called Kenny when he needed something done. Today the job was clearing a drainpipe in a drainage pond of debris caused by a

recent storm. It took awhile, but Kenny found where a large branch had fallen into the water and was obstructing the opening to the pipe. Kenny began working the branch free and got it halfway off the pipe. Then he realized he was in serious trouble.

Lessons for Life

The Diver

Kenny was in his mid-50s and had been diving for more than 15 years. He regularly took dive vacations, dived locally and often sought out additional training. He had never worked as or trained to be a commercial diver, but he had taken nearly every specialty course available to recreational divers.

The Dive

The drainage pond was just down the road from a new shopping mall. After each rain, the parking lot drained into the pond, including branches that were blown down from the adjacent stand of trees. The recent storm's high winds had blown down more limbs than usual, and a large pile of them settled onto the drainage pipe. The water had backed up, filling the pond to the point of overflow. It was nearly 20 feet deep.

For Kenny, the dive was easy. It was shallow, and while he wasn't trained as a commercial diver, he often did what he termed "light-commercial" work cleaning boat hulls or searching for boat motors that had fallen into the water.

For this dive he entered the water by himself. He had a rope tied to his waist and a buddy, Jim, standing beside the pond, but no support in the water.

The water was cold and visibility was nil. Kenny swam to the middle of the pond on the surface and descended. He had to search to find the pipe, groping his way along the bottom. The debris made progress difficult, and he was breathing heavily by the time he got to the pipe.

The top of the 24-inch pipe was covered with a grate, and Kenny could tell immediately that debris was blocking the flow. He swam up off the bottom to give himself better leverage while removing the trash. As he pulled the first wad of limbs out of the way, the water began flowing again.

The Accident

As soon as the water began flowing into the drainage pipe, the force of the suction was more than Kenny could handle. Since he was floating above the top of the drainpipe, it pulled him down instantly, forcing him down to the top of the grate. The top of the pipe was between his upper abdomen and lower chest. Kenny couldn't get his hands against the pipe in any way that would give him any leverage. He was wedged tightly against the top of the pipe, and the suction caused by the water below him was pulling his wetsuit against the bars.

Kenny twisted and turned, trying to pull himself away from the grating. Every time he moved more debris from the top of the grate, more water would flow, locking him down even tighter. Kenny accidentally dislodged his mask in his struggle. He began breathing harder and panicked, quickly emptying his scuba cylinder of air, despite the shallow depth.

Jim, Kenny's buddy on the surface, had let the rope go slack, so it took him awhile to realize Kenny wasn't moving around. Jim had dive gear with him, but he wasn't ready to go in the water. And there was no one else around on the surface Jim could tell about the developing situation. Rather than beginning a dive to investigate, Jim called for help and waited. But Kenny ran out of air and drowned before help arrived.

Analysis

Divers often think that since they know how to dive, they can dive anywhere. Nothing could be further from the truth — especially when it comes to diving outside recreational settings. There

are challenges and problems inherent in every type of dive, as well as specialized equipment needs.

While Kenny was an experienced diver, he had no experience in settings like this one. He also lacked the proper equipment and support. On this particular dive, Kenny should have been wearing a full-face mask with communication lines to contact Jim on the surface. Jim should have been fully geared up and ready to get in the water at a moment's notice if Kenny said something was wrong.

When diving around drainage pipes in ponds or dams, divers need to give openings a wide berth. The water pressure and the relatively small opening of the pipe combine to form what is known as differential pressure — more commonly referred to as "Delta P." The water pressure on the opening of the pipe creates a force that's almost impossible for divers to withstand or overcome.

Before attempting any commercial work while diving, seek training and make sure you're properly equipped.

In this case, the top of the pipe was 15 feet below the surface. That equals 21 pounds of pressure per square inch of water. The pipe was 24 inches across with a surface area of more than 452 inches. This equals almost 9,500 pounds of pressure pulling Kenny down — an impossible amount to contend with.


Before attempting any commercial work while diving, seek training and make sure you're properly equipped. Kenny made a dive for which he was not prepared and paid the ultimate price.

Lessons for Life

- 1 Stay clear of drainage pipes and spillways. The pressure caused by moving water is deceptively strong.
- 2 Don't attempt dives you aren't trained to make.
- 3 Have the proper equipment. This applies to situations like this one, or diving in overhead environments or at night.
- 4 Don't let overconfidence lull you into a false sense of security. Always have a plan and an emergency-assistance plan for your dives — even the so-called easy ones.

Eric Douglas is the director of training for Divers Alert Network. He also co-authored the book *Scuba Diving Safety* and has written a series of dive adventure novels and short stories. Check out his website, booksbyeric.com.

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