My Short Career as a Sea Cave Detective

Dave Bunnell

I've explored well over a thousand sea caves since I began surveying them back in 1982, with the onset of the California Sea Cave Survey Project. I wrote two books on them, and was asked to contribute a chapter on them to the *Encyclopedia of Caves and Karst*. More recently I produced Wikipedia's first page on the topic.

So I guess if anyone could be called an "expert" on the esoteric topic of sea caves, I would fill the bill. But I never thought such expertise would earn me any money until I was contacted in 2003 by a group working with the Discovery Channel. They were looking for someone knowledgeable about sea caves, they told me, and would pay me $500 for an exclusive interview to go with a (true) story they were working on about a woman on holiday who had survived hours inside a sea cave after being washed inside. The show was for a series entitled "More than Human." To help give me some background, they sent a tape with an interview of the young lady in question, a Dutch college student named Line Fiala.

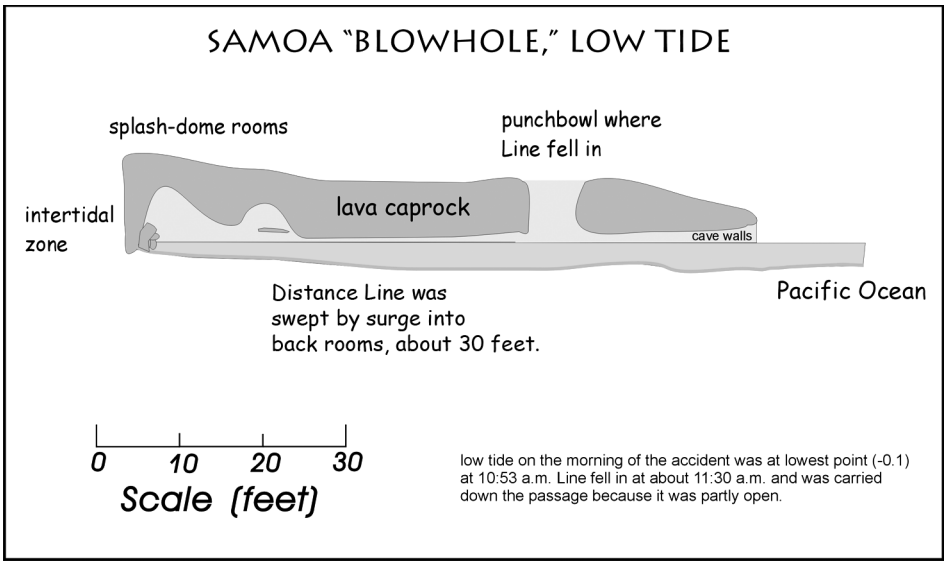
The basic storyline was this: Line and some friends were visiting Western Samoa and had walked out to see a "blowhole" along the coast. In reality this particular opening wasn't so much a blowhole as a littoral collapse or punchbowl into a sea cave below, which at this point appeared as a huge cauldron of seething salt water. They had stood on a bridge of land that separated the blowhole from the sea, watching the cauldron fill almost full as the sea surged in. It was not spraying out like a traditional blowhole. Her friends had just left and Line had stayed to take a photo. Her back was to the ocean, when a large wave (6-8 m high, she said) rushed over the surface and washed her into the blowhole. She fell directly into the water, missing the walls, and was propelled into a cave beyond, where she was able to eventually climb out on some rocks. She could see the light from the blowhole where she was, but it would disappear in the swells. She said she was unable to swim out against the incoming waves, and in the room she had sought refuge, she would have to hold her breath when the room periodically filled up. After several hours the cave appeared to be filling up and she held her breath and swam out to the blowhole, which she exited on her own. Meanwhile, her friends on the surface had given her up for dead, and no sort of rescue had been attempted.

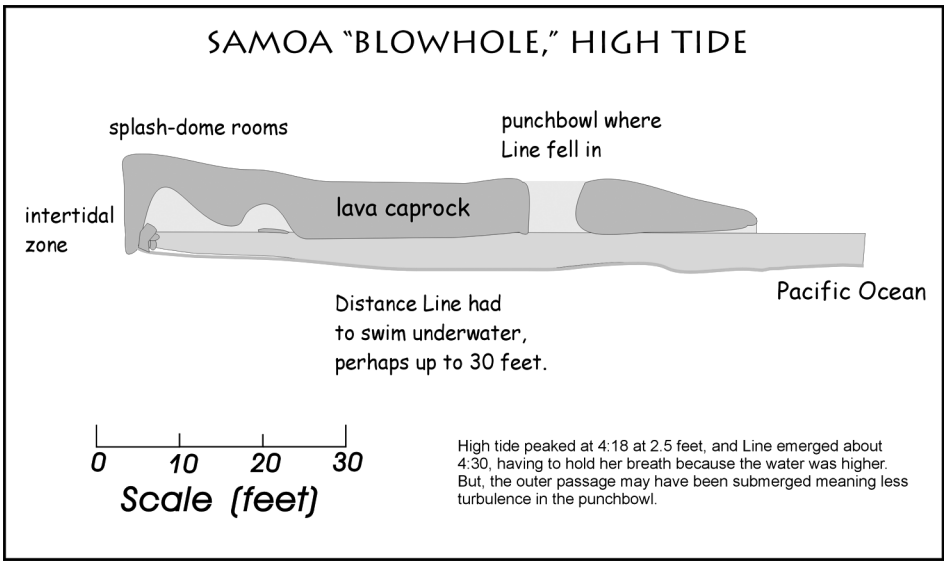
Above the blowhole, lava deposits on the surface rise steadily toward their probable source, a small volcanic mountain that caps the island. It's quite likely that the sea cave involved began as a lava tube, and that the blowhole formed before the cave was inundated with water, as a skylight.

The network folks had already filmed a segment they were very proud of, which they felt simulated the conditions Line had withstood. Their scenario had a dummy (constructed to match Line's size and weight), and later a stunt man, clinging to a wall containing embedded chunks of lava as a high pressure water cannon was aimed toward them. An emergency room physician dramatically declared the dummy dead after a few bursts, detailing the nature of her wounds from shredded regions of its skin. As for the stunt man, he could only hang on for minutes until being washed off. Yet, they marveled, Line had hung under similar conditions for "six hours clinging to razor-sharp lava," with only abrasions to feet and hands to show for it.

To try and make more sense of what had happened, I listened closely to Line's interview. It was pretty clear that she wasn't clinging to the rock for dear life for hours as they were portraying. Based on what she said, I decided to start by "mapping" the cave. As shown in my diagrams, the cave must have had both a seaward entrance some 20-25 feet from the blowhole, then perhaps 30 feet of passage to the two rooms that Line describes. But being a sea caver, my next thought was, "what about the tides." Using the Internet, I was able to look up the tide levels on Western Samoa for the date of the incident. I found that the tide was at its lowest point (-0.1) at 10:53. Line had fallen in around 11:30 a.m., when the tide would have still been fairly low.

Given that she had fallen in the punchbowl at low tide, Line encountered two likely scenarios. First, conditions in the blowhole





Left: I provided the network with this image of a littoral collapse from Santa Rosa Island, and which was aired on both segments. This feature is quite a bit larger than the one on Samoa—note person in center above pit.

Line and a friend in front of the blowhole, just minutes before she was washed in. Other photos taken at the time show the blowhole filling completely with water when waves crashed.

may have been particularly rough because the cave passage between the entrance and the blowhole was likely open, allowing full on surge into it. Clearly it was somewhat rough that day for a wave to have washed her in a good 20 feet or more from the open sea. Second, the passage between the blowhole and the rear of the cave was clearly open, as the surge was able to carry her back into the chambers beyond. These chambers were likely taller than the passage leading in, from the force of waves splashing against their ceilings. Here, she said was able to crawl up on ledges, first in one room and then in another further in. She wasn't clinging in a hard surf, but rather, getting splashed. She also mentioned having to hold her breath as water sloshed up around her.

The tide was coming in as she waited in the back room, thinking rescuers would be forthcoming, not realizing that she'd been written off as certainly having drowned by now. She'd been watching the waters rise and figured she must get out. The tide peaked at 4:18 at 2.5 feet. She recounted having to hold her breath to swim out, suggesting that the cave passage was inundated by the rising tide. It's likely that the higher tide made it easier for her to get out, as the outer passage may have sealed off and reduced the surge that she would have had to fight to get out. Moreover, the water in the blowhole was thus now higher and calmer, enabling her to climb out more easily than when she fell in.

I drew up two maps showing the presumed layout and state of the caves at the two tide levels, and sent them via e-mail to Line herself to check out. I made some change in the nature of the rooms from her feedback, but she said it all basically looked right.

Thus armed, I underwent my interview, in the comfort of my home. Men arrived with big cameras and lights, and a long sound boom. During the course of 45 minutes I was asked about sea caves, gave my speculation about what Line had experienced, and the power that might be exerted in a blowhole—even though, as I kept pointing out, this was not a true blowhole in the classic sense, just a skylight or punchbowl. And I emphasized that most of the time she was lying on a ledge, being more sloshed than pounded, which was obvious from her interview.

When I finally got to see the televised episode, I could see they had been very selective about what they used from her interview and mine. In fact, they used only about 30 seconds of mine! They were still married to their scene with the stunt man, so those parts of my interview contradicting it went unaired, as were the portions of Line's interview. I was gratified that they used my maps to make some spiffy graphics of what happened, and at least felt I'd given them something concrete for my $500. However I was a bit miffed about how they claimed to have come by the maps. They had sent a professional team to the island, who determined that they couldn't enter the cave safely, but had mapped it out from the surface using "sophisticated thermal sensors and measurements of the porosity of the rock." Uh-huh, sure! Their results looked an awful lot like my little sketches that I provided, reproduced here.

POSTSCRIPT:

Months later, the story was recycled into another episode for Discovery Health called "Cheating Death-Amazing Survivals." I was paid another $100 just for giving them the right to use my mug on camera again. I was graduated from "sea cave expert" to "cave scientist." This time they used 3 segments from my interview, demonstrating the roughness of lava rock in one, discussing the force exerted by waves in small places in another, and in the third giving advice for viewing blowholes: don't view them with your back to the ocean and don't stand where it's wet! Overall this segment was done more honestly; the water cannon demonstrations were still there, but there was more honest reporting on her experiences in the cave, not a contention that it was entirely spent clinging to the wall while being pummeled by the surf.

Overall, this experience was a good demonstration of how the media blurs the facts in its quest for drama.

My Flight

by Larry W. Johnson, NSS #17845

A cavers' version of the famous poem by Pilot Officer Gillespie Magee
No 412 squadron, RCAF, killed 11 December 1941

Oh I have slipped the surly surface of earth,
and danced the depths on aluminum-silvered ropes.
Downward I've climbed, and joined the tumbling mirth of rock-split waterfalls;
and done a hundred things you have not dreamed of.
Slithered, and crawled, and swung,
deep in the unlit silence.
Exploring there I've chased the shouting winds along,
and flung my eager self through footless halls of stone.
Down, down the long delirious, gaping black,
I've bottomed the unswept depths with easy grace,
where never moth, or even bat has flew.
And, while with silent peaceful mind I've trod the deep untrespassed sanctity of earth,
put out my hand,
and touched the boot of God.