

Angeline Palmer

1954 – 15 April 1972, 18

The Texas Caver, October 1972, pp. 135-138.

Accident Report: Devil's Sinkhole, Edwards County, Texas. Equipment failure and fall from rope.

Saturday, 15 April 1972. The Devil's Sinkhole is a well-known pit in southwest Texas which was added in 1972 to the National Registry of Natural Landmarks by the Department of the Interior. The impressive entrance is a circular hole 60 feet across in the flat limestone bedrock in an open country of scattered juniper and oak. The rim is undercut so that nearly the entire drop is freefall for 136 feet to the top of a breakdown mountain in a very large circular room about 240 feet in diameter. The breakdown cone slopes steeply down to the walls of the main room. On the east side, one can scramble down through the breakdown to the lower level of the cave into a beautiful lake room. The view of the main room and entrance from the bottom of the breakdown slope has been described as one of the most impressive sights in Texas.

On April 15, 1972, a group of nearly 40 cavers made a trip to the Devil's Sinkhole for the purpose of practicing vertical techniques and general caving skills. Cavers commonly visit the pit in large groups such as this so as to inconvenience the ranch owner as little as possible. The A&I Grotto had obtained permission and were joined by cavers from other groups. Experienced cavers present were: Paul Duncan, Tom Wright and Craig Bittinger from Kingsville; Richard Booth, Brian Boles, Steven Bittinger and Don Broussard from Austin. Most of the other persons present had had very little caving experience, although nearly all had attended at least one training session before the trip. **Angeline Palmer**, a University of Texas freshman, had twice climbed up a 50-foot training cliff near Austin. This was her first actual caving trip.

Upon arrival at the pit, seven ropes were rigged and most people descended to explore the bottom of the pit. There was a shortage of equipment available for the number of people present, as many of the novices did not own equipment. There were three rope-walking rigs being shared among all of the people in turn. In addition, a Texas Prusik rig with two Jumars was available but not being used since the ropewalking was obviously easier. At approximately 2:45 PM Angeline asked to use the Texas Prusik rig. She and 3 or 10 others had been swimming in the large pool of water lower in the cave. Because her shirt was wet, she was in a hurry to get out, and did not need to wait for an easier rig since she had practiced on Texas Prusik before and knew that she could climb out. The top Jumar was attached to the seat sling with two short lengths of one-inch tubular webbing. A bowline was used to attach the webbing to the Jumar on one end and to the seat sling carabiner on the other. A double carrick bend was used to tie the two lengths of webbing together. The lower Jumar was attached to a single piece of sling with a bowline for the foot. Steven Bittinger, a competent caver, helped her rig into the rope and visually checked her equipment, finding nothing wrong.

About 20 minutes after Angeline had started her ascent, Craig Bittinger was lying on the edge of the pit and was witness to the accident. He describes the event thusly: She appeared to be moderately tired from the exertion involved in having climbed 100 feet. While she was resting on the rope about 30 feet down, I called to her, "Texas Prusik sure is fun, isn't it?" knowing full well how tiring the method is. She looked up and smiled. I glanced away for a second and then heard a small gasp and immediately looked back to see two Jumars hanging on a rope with no one attached to them. My eyes focused on down the pit and I saw her tumbling toward the bottom. I immediately yelled several times for the people on the bottom to look out. A tremendous thud followed. I then screamed to the people nearby, "Oh my God! a girl just fell in the pit." Don Broussard immediately jumped into his car and raced to the ranch house to phone for a doctor and an ambulance. An ambulance was summoned from Rocksprings (7 miles), but the nearest doctor was at the hospital in Kerrville (76 miles) and was not available at the Sinkhole. When the ambulance arrived at the ranch, the litter and two oxygen bottles were transferred to a Dodge van, which had been prepared for the return trip over rough road back to the cave.

Meanwhile, everything possible was being done for Angeline. She had landed on her back near a large rock and seemed to be lying in an unnatural manner. Therefore, every precaution was taken not to move or touch her more than necessary in order not to cause any worse damage. No breathing was detectable so mouth-to-mouth resuscitation was begun at once. A plastic oral resuscitating tube was available on top and sent down at once to facilitate this procedure. Blankets were also sent down to help prevent shock. Preparations were made to lower a doctor (should one arrive) into the pit, and a rope and belay system was set up to lower the stretcher as soon as it arrived. Thus prepared, the stretcher was lowered into the pit soon after the arrival of the van and the process began of transferring Angeline onto the litter and securing her to it. She was carefully wrapped in blankets and then strapped down with 2-inch nylon webbing so that she could be pulled out vertically with her head up. About 20 minutes elapsed from the arrival of the stretcher until she was

ready to be hoisted. An hour and a half had passed since the time of the accident, during which time resuscitation attempts had been continued steadily by Richard Booth.

The stretcher had been multiply tied with lengths of 7/16-inch nylon rope and then fastened to a 300-foot length of Bluewater II climbing rope (noted for its non-stretch, non-spin characteristics). About 20 people on top were organized to pull the Bluewater, four persons were tied off at the edge to help the stretcher over the lip, and several more were stationed across the pit with a second rope attached to the Bluewater with a carabiner pulley to keep the litter out away from the ledge as much as possible as it neared the rim.

As soon as Angeline was secured into the litter, she was brought out smoothly and quickly. No more than 90 seconds passed during the ascent from the bottom of the pit until she was in the Dodge van. Resuscitation continued until the ascent began and immediately resumed when the litter reached the top of the pit. Oxygen was then administered on the way to the ranch house and continued until she reached the hospital at about 6 o'clock. Angeline was pronounced dead on arrival at the Kerrville Hospital.

Analysis of the Accident

Although there were no eyewitnesses to see what actually happened during the accident, a thorough examination of the equipment shows that the double carrick bend connecting the two pieces of webbing on the top Jumar worked loose due to the jerking motion involved in climbing using the Texas Prusik method. As Steven Bittinger describes it, "At the time that I rigged her up I had no misgivings about the gear. I had used the exact same system (with the same knots, etc.) in a recent club demonstration and before that at several deep pits and caves in Mexico." This then was an accident caused by an unforeseeable failure of climbing gear.

But the accident would not have been fatal if Angeline had fortuitously had her hands on the rope when the knot worked loose and been able to prevent herself from falling over backwards, or if a safety sling had been used to connect the lower Jumar to the seat sling. A third possibility, but one that is not quite as likely to have prevented the fatality, would have been for Angeline to have been wearing an ankle loop to prevent her foot from slipping out of the foot loop. In light of the fact that she was wearing tennis shoes, it seems unlikely that this precaution would have been very effective.

It is unfortunate that the situation at the bottom of the pit encouraged the use of gear not incorporating all possible safety features. It is a good idea for cavers to have and use only their own climbing gear, but this is not always possible under conditions such as existed at the Devil's Sinkhole. The following suggestions are recommended to prevent any future repetition of this accident:

- (1) The Texas Prusik climbing system (or any other system) should never be used without a safety sling from the bottom Jumar to the seat sling. Foot loops should be well-secured to the feet, and strong boots should be worn to ensure that the ankle loops are an effective precaution.
- (2) Any knot in a climbing rig made of webbing should be sewn shut or else securely backed up by other knot (such as half-hitches) to prevent the main knot from coming untied. Knots should also be checked constantly during climbing activity.

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Prepared by Members of University Speleological Society

Note by Elliott: This article was followed by "The Safety Line", or "Two feet of rope is pretty cheap life insurance" by Bill Elliott. First sentence: During the last several years I have noticed that many pit cavers who still use the "Texas Prusik" with Jumars (as I do) do not use a "safety line" with their equipment." He drew a diagram of how to rig this tether, and it became more widely used by Texas and Mexico cavers to protect against falling out of one's climbing rig. Some cavers used foot or chicken loops on their ropewalkers to protect against falls.

See *The Texas Caver*, May 1972 27(5):81-82.

According to an article by Alicia Wisener on a different accident, it only took 90 seconds to pull Angeline Palmer out of the Devils Sinkhole. (*Texas Caver*, March 1975, p. 38.)