It is the momentary carelessness in easy places, the lapsed attention, or the wandering look that is the usual parent of disaster.

A.F. Mummery

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AMERICAN CAVING ACCIDENTS 1975

A REPORT OF
THE NATIONAL SPELEOLOGICAL SOCIETY

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American Caving Accidents

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In Memoriam

LEWIS HOLTZENDORFF, NSS 14831
FRANCIS E. McKINNEY, NSS 4247
GEORGE TRACY

Three outstanding cavers who died in 1975 doing what they loved.

Introduction

This is the ninth annual report of the Safety and Techniques Committee of the National Speleological Society on caving accidents in North America. These reports, which have been arranged in chronological order, are intended to be used as potential teaching or training guides and are not attempts to indicate blame or find a scapegoat.

Regretfully, 1975 was distinguished by an unusually large number of fatal accidents. Five cave diving accidents are mentioned here, but as in previous editions of *American Caving Accidents*, this is believed to be only a fraction of the actual number of drownings while scuba diving in caves. There were nine nondiving caving deaths in 1975, including three novices who drowned while exploring caves under flood conditions. Novices were not always the victims in other fatal accidents; two men were crushed to death in separate accidents at the mouths of caves. One of these men was on his first cave trip, but the other had a reputation as an outstanding, hard-pushing caver. Of the three fatal accidents involving vertical caves, one boy was a novice, but another was a skilled caver with over 15 years of vertical experience. Many people have long thought that beginning cavers are most likely to be involved in an accident. This is true if one looks at the overall statistics; however, one cannot maintain, as some have, that only the novice becomes injured while caving.

Allan Haarr furnished copies of most of the reports which were previously printed in grotto newsletters. Don Davison, Jr. offered constructive comments about the analysis of many of the accidents. As in previous editions of *American Caving Accidents*, this report was made possible only because many NSS members reported the accidents so that cavers might learn from the mistakes of others.

Richard L. Breisch
Editor, *American Caving Accidents*
NSS Safety and Techniques Committee

Accident Reports

Previously Unreported 1974 Accidents

Tennessee, cave near Pryor Spring Cave Monday, 19 August 1974

Gerald Moni and Beth Elliot hoped to connect a newly discovered pit with nearby Pryor Spring Cave. As they approached the sink, Moni thought he heard something in the sink, but since they could not identify the sound they passed it off as nothing. Ms. Elliot rappelled in, derigged and started towards the next drop of 40 to 50 feet. She heard a noise but passed it off as dripping water. When she rounded the corner, she spotted a wet, shaking goat. It had fallen down the 34-foot entrance drop but had landed on a mass of rotting branches and hence had received only a minor head cut and a slight leg injury. The young goat was caught and fitted with an improvised harness. Moni ascended the pit and hoisted out the victim.

Analysis: Kids should not be allowed to go caving without at least one parent along.

Previous reports in *American Caving Accidents* have described the rescue of dogs and their companions, but this is the only case of a kid (goat) being rescued. This accident is not included in the summary at the end of this booklet.

Source: Elliot, Beth. (1974) "An Unusual Rescue." *Speleonews.* October issue, p.69.

* * *

Indiana, Buckner Cave Sunday, 27 October 1974

R. J. Blenz received word Monday morning that a group of Indianapolis boys were believed to be lost in Buckner Cave. Blenz and other cavers entered the cave about 8 a.m. David Archer, Steve Ballard, Steve Beatty, Rick Bell, Pete Whitaker and Gary Moos, all between 18 and 21 years old, were found safe an hour later. The group had been in the cave about 24 hours. Moos had the flu and was suffering nausea and severe fatigue, but eventually he made it out under his own power by 11 a.m.

Analysis: When found the group had several dim but serviceable flashlights and a little food. They had tried to find their way out but had given up and decided to wait for rescue. Some members of the group had been to the cave a few weeks before but could not remember the route through the cave.

Source: Anon. (1974) "Buckner Cave Rescue." *Bloomington Indiana Grotto Newsletter.* Vol. 12, No. 1, p.10.

* * *

Indiana, Shaft Cave Sunday, 17 November 1974

Frank Reid and two other Indiana cavers aided six people in exiting Shaft Cave. The people were a few hours late in returning.

Source: Anon. (1974). "Shaft Cave Rescue." *Bloomington Indiana Grotto Newsletter.* Vol. 12, No. 1, p.11.

* * *

Indiana, Coon Cave 1974(?)

A young boy entered a crack in the lower section of Coon Cave and became stranded when his light failed. He was rescued by several Indiana cavers.

Analysis: Inexperience and insufficient light.

Source: Anon. (1974). "Coon Cave Rescue." *Bloomington Indiana Grotto Newsletter.* Vol. 12, No. 1, p.10.

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1975 Accidents

Georgia, Case Cave Saturday, 4 January 1975

Case Cave is not a difficult cave but it does have its hazards. Four inexperienced cavers were about 1000 feet from the entrance when at about 6:30 p.m. first-time caver Gwen Place (23) slipped because of the mud. She slid about 10 feet before her right ankle caught in a crack, stopping her fall just inches from a 30-foot drop. The force of her sudden stop snapped both the bones of her lower leg. Two of her party went for help, while several cavers from another group stayed with her and her companion.

The Dade County Civil Defense was contacted at 7:05 p.m. and were at the cave within 10 minutes. The rescue squad members, who were skilled in both caving and emergency first aid, entered the cave about 7:30 p.m., but were somewhat delayed in reaching the victim since her companions who had gone for help were unable to guide the rescuers to the site of the accident. Because of the type and location of the accident it was necessary to immobilize the broken leg in an air splint and place the victim in a Stokes litter. The injury, a compound fracture with nearly 4 inches of bone protruding from the flesh, was extremely painful to the victim. Ms. Place did not go into severe shock and seemed to suffer very little once the leg had been splinted. She was admitted to a local hospital about 15 minutes past midnight.

Analysis: The immediate cause of the accident was slippery mud and boots. The inexperience of the group prevented them from recognizing the potentially dangerous area. The cavers who went for help should have marked the way carefully so they would have no trouble returning to the victim.

Sources: Report by Foxy Ferguson.
Ferguson, Foxy. (1975) "Compound Fracture, Case Cave." *Huntsville Grotto Newsletter.* Vol. 16, No. 3, pp.27-28.

* * *

Kentucky, Cool Spring Cave January 1975

Three inexperienced cavers, David Philips (22), Mark Philips (18), and Mark Winstead (19), went caving when it was raining. Mark Philips' flashlight gave out and Winstead dropped his into the water. They then tried to leave the cave using their only remaining flashlight. About 300 feet from the entrance they found the exit blocked by rising floodwater. The water rose 18 feet in less than 2 hours, but the three novices were rescued at 3:45 a.m. by cavers from Cadiz, Kentucky.

Analysis: Inexperience allowed the group to enter the cave during bad weather and with inadequate light sources. Had the last light failed, they probably would have drowned in the rising water.

Source: Cravens, Tom. (1975) "Flashlights Give Out as Cave Floods," *NSS News,* Vol. 33, No. 6, p.106.

* * *

West Virginia, Organ Cave Thursday, 30 January 1975

Four young persons entered Organ Cave without permission and equipped with flashlights. They had been in the cave once or twice before and had a slight knowledge of some of the main passages. When they failed to return promptly their companions on the surface sought help. A search group, composed mainly of Greenbriar Grotto members, began sweeping the main passages. They were found about 5 a.m. Friday morning.

Analysis: The group of young persons had insufficient lights and experience. Also they did not pay attention to details of the passage.

Source: Swepston, Ed and M. Dyas (1975) "Search and Rescue in Organ Cave." *D.C. Speleograph.* March issue, pp.16-17.

* * *

West Virginia, Bowden Cave Sunday, 9 February 1975

Barry Baumgardner, M. Johnson, D. Williams, Alan Carpenter and R. Garton constructed a 30-foot ladder from two aluminum ladders 20 feet and 16 feet long. The new ladder was held together with ¼-inch steel angle and 3/8-inch steel bolts. In the Cathedral Room of Bowden Cave the ladder was used to reach a ledge 30 feet above the floor. Several of the party had climbed the ladder without mishap, and a 3/8-inch expansion bolt was placed at the ledge to rig cable ladders and ropes. The ladder was later to be pulled up and erected on the ledge. Carpenter was climbing the ladder and reinforcing the connections with clamps. When he passed the center of the ladder which was 15 feet off the floor, he yelled, "The ladder is bending!" Baumgardner successfully belayed Carpenter thus preventing a fall and possible injury.

Analysis: Inspection of the ladder showed that the bend occurred not at the connection but 2½ feet above it; evidently there was a twisting strain as well as a tensile strain on the ladder. Ladders and scaling poles are strongest (but not necessarily stable) when set up vertically. Cavers should avoid using such devices if they are inclined much from the vertical. Ladders and scaling poles should always be belayed. After one person has gotten to the top, the belay should be from above.

Source: Anon. (1975) "Accident Report." *Karst Caver,* Vol. 9, Nos. 1&2, p.14.

* * *

Indiana, Salamander Cave Saturday, 22 February 1975

More than 2 inches of heavy rains on top of already saturated ground brought widespread cave flooding to the Bloomington, Indiana area. A stream in Salamander Cave normally leaves the cave through a narrow, sinuous canyon just inside the entrance passage. Upstream the passage averages 6 feet in height. 500 feet from the entrance is Breakdown Mountain and the start of 30-foot-high stream passage, which makes this a popular beginners' cave.

Around 1 p.m. three university freshmen, Kim Alan Aldrich (19), Marcia Ann Bott (18), and Terry Lee Yokem (18), entered the cave during the heavy rain. Only Aldrich had any previous caving experience and none were members of any caving organization. Both Aldrich and Yokem were equipped with hard hats and carbide lamps; Ms. Bott carried a large flashlight.

The three were met at the entrance by John Abney and his group which was leaving the cave because of the rising water. They did not heed a warning given by Abney. Another warning was issued by Kathy Hoey, a graduate student who had been studying the aquatic life of the cave. She had entered around 10:15 but was leaving because the water in the passage was boot-top high and becoming muddy. Ms. Hoey later warned another group entering the cave. They left soon after they saw the situation for themselves. The three freshmen, however, continued into the cave.

In the middle of the afternoon the storm intensified, and there were repeated downpours. Abney notified the Indiana State Police about the flooding cave, and they contacted area cavers. Michael Moore and Jim Keith found only 18 inches of air space in the entrance when they checked about 8:15 p.m. At 10:10 p.m. Moore, Keith, and Don Paquette returned to Salamander Cave. Less than 100 feet into the entrance passage they discovered the bodies of Marcia Bott and Kim Aldrich. A very brief search failed to locate the body of Yokem. It was assumed that he had either escaped to the Breakdown Mountain or else his body was farther upstream in the entrance passage. The searchers left to notify the authorities before attempting to remove the bodies. Because of the continued raining and flooding, they were not able to do the recovery until after 8 a.m. the next morning. Yokem's body was found a short distance from his companions'.

Analysis: "The inexperienced spelunkers were warned of the flooding twice while entering the cave. It is impossible to know what really happened, but lack of caving knowledge could have led to the following: As the water began to rise more rapidly they must certainly have become alarmed and perhaps panicked and attempted to escape. Alternatively, as others have done, they could have sought safety at the Breakdown Mountain and then attempted to get out as soon as the first flood crest had passed. In either case, they nearly reached the entrance.

"Approximately one inch of air remained trapped at the 8-foot-high ceiling throughout the flooding, and at least one cave cricket survived there. It would have been impossible, however, for a human to remain at the ceiling at that point. Some of the high spots upstream in the flood passage are higher than the place where the three drowned, but it is not known if these areas trapped air during the flood. It appears that they made no effort, or were unable, to retreat once they reached the final turn in the entrance passage.

"The deaths of Kim Aldrich, Marcia Bott, and Terry Yokem may be attributed to improper preparation for the trip, poor judgement, and panic. Had they waited in the large passage at the Breakdown Mountain for only a few more hours, rescue could have been trivial." (Moore)

Sources: Moore, Michael C. (1975) "Accident Report: Three Drown in Salamander Cave; Four Rescued from Wayne Cave, Monroe County, Indiana." *NSS News.* Vol. 33, No. 4, pp.55-57.

Paquette, Don and Mike Moore (1975) "A Tragic Weekend." *Bloomington Indiana Grotto Newsletter.* Vol. 12, No. 2, pp.4-6.

(numerous newspaper articles)

* * *

Indiana, Wayne Cave Saturday, 22 February 1975

While the tragedy in Salamander Cave was unfolding, nearby Wayne Cave was also being flooded. Wayne Cave is well-known for having a cave stream which rises during heavy rain. With 4.27 miles of passage, this is the longest cave in the county.

Four cavers from Illinois, Paul Homan (37), Bob BonDurant (32), Randall Masterson (26), and Gene Strain (40), entered the cave Saturday. Around midnight the wife of one man notified the police that the group was in the cave. Rescuers managed to enter the cave for about a quarter mile but were unable to contact the four men because of the chest-deep water. By 12:15 p.m. cavers Tom Rea and Kevin Komisarcik were able to get to the Mountain Room where they found the missing group. They reached the surface by 2:30 p.m. Sunday.

Analysis: "The cavers trapped in Wayne Cave followed accepted procedure and sought a high spot to await lower water and rescue. They huddled together to provide heat and rationed their meager food supply. They were cold, wet, and hungry, but had light and otherwise were in good shape when rescued. Although Masterson and Strain were novices, the calm thinking and experience of Homan and BonDurant probably prevented additional disaster on an already tragic weekend." (Moore)

Sources: Moore, Michael C. (1975) "Accident Report: Three Drown in Salamander Cave; Four Rescued from Wayne Cave, Monroe County, Indiana." *NSS News.* Vol. 33, No. 4, pp.55-57.
Paquette, Don and Mike Moore. (1975) "A Tragic Weekend." *Bloomington Indiana Grotto Newsletter.* Vol. 12, No. 2, pp4-6.
(numerous newspaper articles)

* * *

Georgia, Climax Cave Sunday, 9 March 1975

While waiting for others to proceed, one caver attempted a large chimney. When he got near the top he requested information on how to proceed. Since Larry Crapps had climbed the chimney several times before, he climbed up the wall to show the other caver the best way to traverse the side. About 30 feet up, some loose rocks began pouring into Crapps' face and he started a very fast descent of the chimney. He shouted a warning, "Look out!" On the way down he hit 4 or 5 projections with his head, chest and arms, which caused him to be thrown into a sideways fall. He landed with all his weight on one leg. Although he did not require assistance in getting out of the cave, he later needed crutches and a cast for his leg.

Analysis: This injury could probably have been prevented had a belay been used. After the accident the injured caver's pride caused him to refuse a belay or help from another group of cavers. This was very foolish. An injured person should not be permitted to reject available aid.

Source: Crapps, Larry. (1975?) "Accident in Climax." grotto newsletter (?)

* * *

British Columbia, Canada, Bluewater Cave Monday, 24 March 1975

"On the afternoon of March 24, 1975 five loggers, Roger Samuels, Rick Gayton, Wilhelm Evers, Dick Buchanan, and Rob Adams descended the 30-foot Lightening [*sic*] Pit in Bluewater Cave. None of the men were experienced cavers. They rigged the pit with ¾-inch manilla and hand-over-handed down the then raging waterfall. The first man down realized he was in trouble, but they had no prearranged signals, and the roar of the waterfall was too great for them to yell signals. They continued to descend until all were at the bottom unable to ascend. Repeated attempts to ascend only served to tire them. After several hours Adams managed to get to a ledge half way up where he could rest before attempting the top. Adams left the cave at about 4:00 p.m. He returned to the logging camp and managed to get the assistance of about twenty loggers who returned and hauled the men from the cave. All were back at camp by 8:30 p.m." (Shaw)

Analysis: Inexperience in caving techniques caused the men to underestimate the difficulty in doing hand-over-hand climbs, especially under a waterfall. If they had not been able to get out of the cave on the day of their entrapment, the loggers could easily have died of hypothermia during the night.

Sources: Report by Pat Shaw.
Shaw, Pat. (1976) "Bluewater Cave, Vancouver Island." *The Canadian Caver.* Vol. 8, No. 1, pp.31-33.

* * *

Puerto Rico, Rio Camuy Cave Wednesday, 26 March 1975

A party of six cavers descended a pit near the Ventosa Entrance of the Rio Camuy Cave System on the morning of 26 March 1975. They spent their time working on dye tracing and surveying projects. Francis E. McKinney (35) was the last person to ascend the 50-meter pit. About 5 minutes later, near 6:30 p.m., a whizzing noise was heard, followed by a loud crash and then a scream from the bottom of the pit. Steve Williams called to McKinney who answered in a loud voice. Brian Smith immediately left to alert Frosty Miller and Terry Tarkington, who had gone out of the cave already.

It was determined that the main rope had not broken and it was safe to use it for rappelling. Williams descended and found a Jumar ascender attached to the main rope about 23 meters from the floor. The Jumar had a piece of broken polypropylene rope attached to it. Williams found McKinney lying on his right side, resting his head on his right arm and speaking in a loud voice. He was able to describe his own injuries which included a definite break in his left leg and probably in the pelvic region. He also thought he had a possible lower spine injury and possibly a break in either his right arm or wrist since his right hand was going numb.

Help was sought from other cavers in the area as well as medical personnel from Arecibo. For the next 2½ hours McKinney had intermittent pain in the area of his abdomen but none in the chest or stomach. Shortly after 9:00 p.m. he began to have labored short breaths and chest pains. About 5 minutes later his breathing stopped and Williams started mouth-to-mouth resuscitation and heart massage. Frank Shire rappelled down to assist. After about 30 minutes no favorable response was obtained. The body and all gear were removed from the cave by 5 a.m.

Analysis: Francis was the last to climb the pit, so no one saw the accident. However, it is possible to partially reconstruct it:

1. Francis was an experienced vertical caver and had done many pits more difficult than Ventosa. For example, he was the second person down Surprise Pit in Fern Cave.
2. The rope was wet and muddy, both from a constant drip over the lip and from the boots and gear of the five cavers who ascended before him.

3. Francis was using a new (to him) vertical rig of two Jumars with a chest box. He had climbed a clean dry rope for fifty feet in practice three times near Oak Ridge and had done a dirty sixty-foot pit the preceding day. On both occasions he had complained that the lower Jumar was sticking so badly that he had to use both hands to move it.

4. The upper Jumar was found about seventy-five feet above the bottom of the pit. The polypropylene ski rope connecting the Jumar to the foot loop had abraded and failed at the point where it passed through the chest box.

5. Francis, himself, did not know what had happened.

6. Francis disconnected his own box from the rope to help Steve descend.

7. Steve does not remember taking Francis' lower Jumar off.

8. The rope, Bluewater III, was essentially new. There are worn streaks on the rope in the area where Francis fell and occasional heavily worn spots. Had these been caused by hauling gear out they would have been on other parts of the rope, both above and below the section of the fall (considerable rope was on the floor of the pit during the ascents and descents).

9. The teeth of Francis' Jumars contained a lot of mud.

The accident was apparently initiated by the failure of the upper Jumar sling. Polypropylene ski rope has very poor abrasion resistance and broke after rubbing in the chest box. Francis must either have been "thumbing" the lower Jumar or had taken it off to work on it when the upper sling failed. He had a chest loop and extra Jumar in his pack. This safety would have caught him. (This was reconfirmed by actual tests a few days after the accident.) Our reconstruction is that the upper Jumar sling failed while the lower Jumar was being thumbed. We cannot postulate a mechanism which would explain the rope damage found but the damage would seem to rule out the possibility that the lower Jumar was off the rope.

During the rescue itself, those at the top hoped that his injuries were not too serious as he was quite lucid. Steve did not tell us that he found a Jumar 75 feet up as he was trying to keep Francis in an optimistic frame of mind. This he was able to do. His injuries were such that there was no way to save his life. The fall caused a fracture of the sacrum which led to a rupture of the aorta 3.8cm (1.5 inches) long at the time of the autopsy. It must have originally been a puncture wound almost sealed by the bone fragment which caused it and then been enlarged during the removal of the body from the cave since the amount of blood passing through the aorta and the pressure which it is under imply that Francis would have died within five minutes had the original rupture been that large.

What can be learned? Among other things: (1) Loose woven polypropylene ski rope is poor sling material. (2) The ability of Jumars to catch and hold, not merely grip and hold, needs to be evaluated. (3) We need to design a "bendable" stokes litter.

Sources: Miller, F. L., F. W. Shires, T. W. Tarkington, R. L. Wallace, and S. R. Williams. (1975) "Accident Report: Fatality in Rio Camuy System." *NSS News.* Vol. 33, No. 8, pp.132-133.
Several newspaper articles.

* * *

Chiapas, Mexico, Sumidero Yochib April 1975

A group of very experienced cavers from Canada and the United States spent several days attempting to bottom a large cave known as Sumidero Yochib. The cave contains a large river and has waterfalls in some of the pits.

Mike Boon reports on an incident which occurred near the end of the expedition: "Next day I was standing on the shingle at the bottom of the oxbow when there was a sudden impact and Pete [Thompson] landed after a fall later measured at 16 feet. After we had stopped laughing we found that he had sprained his ankle. After a little discussion he decided he wanted to go back to camp before his ankle swelled up, so after I had had a quick look at the last pool, which led almost at once to waterfall number thirteen, we made a three-legged retreat. Pete's ankle was quite sore by the time he got back, though he managed quite well when we replaced ladders with prusik ropes."

Analysis: "General public opnion holds that inexperienced cavers are more accident prone than experienced cavers. Yet Mike Boon and Pete Thompson, both seasoned cavers with over 15 years of experience in caving, were involved in a minor yet potentially disastrous mishap. This accident was due to:

1. Over enthusiasm to bottom the cave, as Pete himself admits, caused him to drop his guard and he therefore failed to evaluate the situation properly.

2. The use of wetsuit mitts while attempting a difficult traverse hindered Pete's ability to obtain a sufficient feel for the rock.

3. Mike Boon's neglection, as lead man, to inform Pete as to the difficulty involved in doing the traverse.

Though time is a major factor in caving, it should not overshadow one's judgement. "Bottoming the cave" should not maintain precedence over safety in caving. As in Pete's case, over enthusiasm to push a cave could have been disastrous. It can also create many other problems such as: people wandering away from the main party without informing them; neglecting to check and maintain gear; not checking hand holds, etc.

Cavers should be fully aware of the situation at hand, the techniques to be used, and the use of their equipment as well as its limitations. Wearing wetsuit mitts, for example, while climbing in caves is hazardous but easily remedied situation if the wearer realizes their disadvantages." (Bray and Sandau)

Source: Boon, Mike. (1975) "Return to Yochib—Part 2," *Canadian Caver.* Vol. 7, No. 1, pp.6-16.

* * *

Wyoming, Horsethief Cave April 1975

Three novices entered Horsethief Cave, but one turned back a short time later because his dog could not handle the cave. When the others did not return within the allotted time, the fellow on the outside went for help. He got his car stuck in a snowdrift but eventually walked to Lovell. Park officials organized a rescue. The other two people were found near the entrance after having finally found the correct way out.

Analysis: The novices learned of the cave through the local grotto, but they did not attend grotto trips nor practice sessions. This grotto now recommends: Never take anyone to a dangerous, complicated, or delicate cave unless you can be reasonably sure they won't go back later and get into or cause trouble.

Source: Report by Mary Alice Chester.

* * *

Florida, Jenny Springs April 1975

Three untrained cave divers lost their lives in a multiple drowning at Jenny Springs when they penetrated 300 feet into the cave without a safety line.

Analysis: At least 18 cave divers have died in this cave, many in multiple drownings. A triple drowning was reported in the 1967 *American Caving Accidents.* Cave diving without proper training and especially without a safety line is suicidal.

Source: Burgess, Robert F. (1976) *The Cave Divers.* New York: Dodd, Mead and Company, 239 p. (see p.212).

* * *

New York, Knox Cave Saturday, 3 May 1975

Raymond and Suzanne Ryan, Glenn Bumpus (21), Jayne Schiff (19), Michael Froehlich, and Anita Sonin began descending the sinkhole entrance of Knox Cave shortly after 8:00 p.m. All but the Ryans were students of the State University of New York at Albany and were novices on their first caving trip. Ice at the bottom of the sinkhole obscured ¾ of the entrance gate. They noted no other ice near the entrance and could not find enough meltwater to fill their carbide lamps. To gain entry into the cave the party began crawling over the top of the gate and down the icy ladder rungs. Four of the party entered and only Schiff and Bumpus still remained outside.

Suddenly and without warning they heard a rushing of air and were pelted with small particles of ice and snow. The cavers called to the two outside but heard only a moan in response. They found that Bumpus and Schiff had been pinned beneath an ice block 8 feet in diameter and 3½ to 4 feet thick, weighing approximately 1 ton. They realized that Bumpus

had been killed instantly. Jayne Schiff was beneath the ice with only her legs visible.

The cavers contacted the sheriff's office and the Berne Ambulance. The sheriff's deputies arrived by 8:30 p.m. Volunteers from the Knox Fire Department broke up the block of ice and removed Schiff. She sustained fractured ribs, a fractured left forearm, a punctured left lung and fractured 5th, 6th, and 7th vertebrae. Her condition was very critical for over a week after the accident but it finally stabilized. She may be partially paralyzed permanently.

Analysis: "No warning signs were available to the group that might have made the accident avoidable and no amount of safety equipment above the adequate supplies at hand would have made any difference.

The source of the ice block remained a problem to the investigators. No clues were available at the time to suggest exactly where it came from. Photos taken during the investigation of the area on the morning after the accident documented the drag marks on the wall about 25 feet above the entrance. It now appears that the block came from an area near the very rim of the sinkhole, close to ground level. It is not known why such a large block of ice formed near the surface and why it did not melt as did the ice deeper in the sink. It may have been covered by a thin layer of mud at the time, making it nearly impossible to see." (Gregg)

Sources: Report by William J. Gregg.

Gregg, William J. "Accident Report, Fatality at Knox." *The Northeastern Caver.* Vol. 6, No. 3, pp.57-59 (summarized in *NSS News,* Vol. 33, No. 8, p. 129)

DeMare, Carol. (1975) "Falling Block of Ice Kills Spelunker Outside Knox Cave; Companion Hurt." *Albany Times-Union,* 4 May 1975.

* * *

West Virginia, Dig Spring Sunday, 11 May 1975

Bill Koerschner and Joe Saunders spent three trips attempting to dig open an entrance at Dig Springs which was blowing air. Saunders describes what took place:

"On May 11th, our fourth visit to the spring, we came armed with a winch and cables to pull a large rock from the entrance. Our working area was an alcove about ten feet long, eight feet wide, and six to eight feet high. Two rather large blocks lay on the ground, damming the spring. These we wished to winch out as a sledge hammer had proven worthless the week before.

"In order to minimize the effect of mud suction, we started digging around the rock's base, which would also give us a better hold with the chains. While we were doing this, Bill got carried away and started to dig away from the target rock, at the base of the blocks forming the right wall. A few minutes after he started digging there, he said, "I hope this thing doesn't fall on me." A minute or two later I heard, and then saw from the corner of my eye, some crumbs of dirt roll down from the side of

the block. I looked up, expecting to see someone standing above us on the small cliff. What I saw instead was the right wall of the alcove toppling toward me. In a split second I jumped for my life toward the outside of the alcove, yelling as I did, 'It's falling, get out!' Bill, who was crouched at the very base of the wall when I yelled, had time to stand up and make a brief move to his left before he was hit. The wall was composed of two 3- to 4-ton blocks with a half ton of smaller stuff on top. With a ripping noise the whole stack toppled. The bottom block was stopped by the target rock, but the upper block slid off the lower one, hitting Bill on the right side of his body, knocking him down.

"I got up, dismissing my minor scrapes, and looked over to Bill. His shirt was in shreds, his shoulder was bent in a grotesque angle, and a deep gouge in his lower right arm showed the tendon or bone. He said something about going to black out, so I left for aid. I got a local [person] to call for an ambulance from Princeton, 15 miles away. While the local waited for the ambulance at my car, I returned to Bill with some clean clothes to cover the wounds with. I covered him with the clothes to keep him warm and minimize shock, and I kept talking to him to keep him with us. About forty minutes after the accident, the ambulance crew arrived. After securing the lower block with a cable, we dug his foot out from the rubble and put him in a stretcher. It took another 30 minutes to carry him back to the road, and about two hours after the accident he was in the hospital. He underwent four or five hours of surgery. His injuries were a broken jaw, broken shoulder, broker lower right arm, and various nerves, muscles, and blood vessels ripped loose from the upper arm. The orthopedic surgeon who worked on Bill described the injuries to the arm as as bad as he's seen for survivors of mining accidents. There is considerable question now as to whether any use of the right arm can be recovered, even with future surgery attempts to put the nerves back in place."

Analysis: Even considering the serious injuries sustained by Bill, both he and I were lucky. If I had not heard the crumbs of dirt rolling, neither or us would had any warning. I would have been struck frontally and Bill would have been pinned or crushed by the lower block. Bill was lucky that the rock hit him while he was standing and that it didn't hit him more on his head. We were also lucky that I could go for help.

"What can we learn from this? Certainly not that digging should be stopped, for part of the essence of caving is digging to new passage. It is rather that entrances feature the more unstable walls and ceilings and cavers should respect potentially unstable rocks. Bill and I got too careless, ceased thinking about collapses. We thought about part of the alcove collapsing after we removed the target rock, but we didn't think it would happen as soon as it did. Perhaps having only two people digging was unwise. We needed a third or fourth person." (Saunders)

Sources: Saunders, Joe. (1975) "Report on the Accident at Dig Spring." *The Tech Troglodyte.* Spring issue, p.5.
Saunders, Joe. (1976) "Near Fatality at Entrance Excavation in West Virginia." *NSS News,* Vol. 34, No. 1, p.10.

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Texas, Dead Deer Cave Saturday, 31 May 1975

Around 5 p.m., on an impulse the owners of Dead Deer Cave decided to check their cave which lies approximately one half mile from their home. They found a motorcycle near the highway and helmets near the entrance. The owners were not worried since many people trespass on their property to visit the cave. Later in the evening they made two more trips to check on the trespassers. At 10 p.m. they contacted the Bexar County Sheriff's Department. At midnight the sheriff's office contacted the San Antonio Civil Defense which in turn contacted caver Chuck Stuehm. By 1:45 a.m. six cavers and four men from the sheriff's department were at the cave.

Greg Passmore and John Graves entered around 2:15 a.m. Graves rigged a rope and took the lead. Passmore found two wallets and an NSS application form at the top of the pit. Graves started climbing down a series of chimneys when he heard someone calling from below. Graves called out, "How many are there?"

"Two, hurry we're in the pit," came a reply.

"Are you hurt?"

"My legs are broken . . . and the other guy's dead."

Both cavers wondered if this were really true or a hoax. Graves scrambled down the rest of the drop and saw a boy hanging in a tangled mass of ropes. Passmore joined Graves and they both saw the other boy lying on the floor of the pit half submerged in water. He was lying on his side and was not wearing a shirt.

Graves rappelled down next to the boy hanging in the ropes and spun him around. Rigormortis had already set in and his face and lips were blue. He was David Scott Brown (16). Graves continued down to Paul H. Hagerty (16) who was shivering violently. Graves attempted to warm up the injured boy by giving him a Levi jacket and an extra carbide lamp. The victim was checked for injuries. He escaped the fall with only a broken leg and a broken jaw. Since it was impossible for Graves to move Hagerty by himself, he excavated a channel to drain some of the water from the pool where the boy was lying.

Passmore left the cave to get assistance, taking the two wallets for identification. Stuehm took charge of the surface aspects of the rescue. The Texas Cave Rescue group and Terry Jones, an experienced mountain climber and paramedic, were contacted for assistance. Explorer Post 700 set up two communications trucks with mobile phones installed in them. These phones were used to contact many cavers throughout Texas. Around 5 a.m. Jones reached the victim with blankets and then requested that an orthopedic surgeon be available on the surface. The Explorer Post ran communication lines from the bottom of the pit to the surface and then to the communication trucks. Ronnie Fiesler in Austin was contacted at 5:15. He gathered ten highly experienced Austin cavers who arrived at 8:30 a.m.

At 6:30 a.m. the medical equipment arrived at the cave. The paramedic administered IV injections. They placed a traction splint on the victim's leg and then placed him in a litter. After the doctor arrived, morphine was given to the victim. With considerable effort, Hagerty

was removed by 12:30 p.m. Sunday and the dead boy by 3:00 p.m.

Analysis: The two boys were inexperienced and had only a vague idea of what is involved in ropework. Only the expert action of many of the rescuers saved Paul Hagerty. At least 34 members of 6 Texas grottos helped in the effort.

Sources: Passmore, Greg. (1975) "The Accident: First Report." *The Texas Caver.* Vol. 20, No. 7, pp.107-109.
Fiesler, Ronnie. (1975) "Second Report." *The Texas Caver.* Vol. 20, No. 7, pp.110-111.

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Washington, Ape Cave Sunday, 22 June 1975

A church group, led by Ed Belz (45), explored Ape Cave, a well-known lava tube. The group was ill-equipped and poorly dressed for this cold cave. Their light sources were inadequate and no one had a helmet.

At about 8 p.m. the group was in the upper portion of the lava tube, just above the large lava falls, when Kathy Taylor (17) fell and hit her head. At first it appeared that a concussion was the most likely injury. There was no bleeding, but the victim was vomiting and complained of a severe headache and dizziness. She was delirious and said she was tired.

Belz and the other members of the group tried to carry Taylor out but could not get her down the lava falls which is almost 10 feet high. Leaving three people with Taylor, Belz proceeded out by himself to get help. He encountered Bill Capron (25) and Barry Leibowitz (25), both NSS members. The two men returned to the injured girl while Belz proceeded to a nearby town and contacted a search and rescue team.

At the accident site, Leibowitz and Capron found the three uninjured young people huddled together with a flashlight. Knowing that a long wait was coming and that hypothermia was a potential problem, the three were sent out after being given some high-energy food and a flashlight with fresh batteries. Coats were taken from the two boys since they would be warm enough on the way out.

The victim was lying on the floor, propped up against the wall. She was cold and felt nauseous. Because of her head injury, she was not given any food. She vomited several times. A pack, the coats, and a knit hat were used in an attempt to keep the victim insulated and warm, yet she began to shiver about an hour later. A short while later about ten members of the rescue team arrived. Ms. Taylor was wrapped in blankets and placed in a Stokes litter. The rescue group depended on Coleman lanterns which proved to be inconvenient. Only one member had a hard hat. The victim was carried out and placed in a waiting ambulance about midnight.

Analysis: It was uncertain whether Kathy Taylor fell because she tripped or blacked out. She has passed out at least once before for an unknown reason. It was later found that she had an abnormal number of blood vessels to the brain and possibly a cerebral hematoma. It may have

been hazardous for her to be caving at all because of this previously undiagnosed condition. A hard hat would have at least reduced her head injuries, though the major problem was not related to the fall. It was not possible for the group to have realized the possible danger, but better equipment would have alleviated the seriousness.
Source: Report by Bill Capron.

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Texas, possibly Dead Deer Cave [?] Thursday, 26 June 1975

Shortly after 3 p.m. Michael Lowrie (17) and David Lanford (16) descended a cave near San Antonio to a depth of 130 feet. They had descended without the use of either ropes or lights. Lowrie jumped the last 12 feet. Lowrie was not able to climb back up the slippery rock; however, Lanford was able to get out and alert the Shavano Park Police who called the Civil Defense rescue team. The boy was hauled out by Rev. Bill Morell and Dick White at about 10 p.m.

Analysis: The two boys had neither rope, lights, nor good sense.

Source: Goode, Jay. (1975) "Teen in Cave Rescued." San Antonio newspaper.

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West Virginia, Barnes Pit Tuesday, 1 July 1975

Several groups of cavers from Ontario, Canada spent a 4-day weekend caving in West Virginia. One group of six cavers planned a short trip on the last day before returning home. They decided to use the 15- to 20-foot entrance drop of Barnes Pit to practice ladder climbing. At approximately 1:15 p.m. George Tracy (28), Marg Saul and Stephanie Merrin prepared to rig the pit. As the women unrolled the 30-foot ladder, Tracy walked to the entrance to look for the best spot to place the ladder.

Suddenly there was a rumble, and Stephanie Merrin saw Tracy falling backwards with arms outstretched as though the ground had been jerked from under his feet. The duration of the rock fall was about 3 to 5 seconds, and it was apparent that large rocks to the right of the entrance had shifted. Tracy was pinned against the solid wall to the left of the entrance hole by a boulder at least 5 feet in circumference, which had caught him mid-chest and abdomen. An upright rock about 7 feet in height appeared to have settled against the right side of the first boulder and seemed to be partly supported by it. The victim's face was white and he was breathing in sharp gasps.

Help was sought immediately from the Marlinton Fire Dept., an ambulance and the Pittsburgh Grotto Rescue List. A jack was placed between the boulder pinning Tracy and the wall beside the entrance hole. Small rocks were wedged in the 5-inch gap created by opening the jaws of the jack to their maximum, but this did not noticeably relieve the

victim who was experiencing increased difficulty in breathing.

One ambulance attendant prepared to administer oxygen but found that the cylinder was empty. A second cylinder was obtained from the ambulance but it leaked due to a missing gasket. Tracy began convulsing. The ambulance attendants did not have any morphine and were not allowed to administer any drugs. Tracy's condition rapidly deteriorated and about 90 minutes after the accident he stopped breathing. Mouth-to-mouth resuscitation was tried unsuccessfully. After several phone calls a doctor and a nurse arrived 2 hours after the accident. The doctor was secured by a safety line and from a distance of 20 feet from the victim pronounced him dead. Finally the body was recovered 6 hours after the accident by using a bulldozer and a GI truck.

Analysis: The written report of the accident gives no indication as to what caused the rock to fall. It seems meaningless to speculate as to whether the cavers should have been able to recognize the unstable condition of the rocks.

The ambulance attendants did not inspire confidence in their knowledge of first aid and it was inexcusable to have only empty or faulty oxygen cylinders in the ambulance. The doctor was very slow in responding to the phone calls but he claimed he did not realize the urgency of the situation. The cavers present realized too late that they had little knowledge of first aid or rescue procedures. Much later it was learned that there was a mine rescue group in the area which could have provided the specialized equipment and knowledge for such an emergency. However, this accident was so severe and the rescue so difficult, that the victim would not have survived no matter how efficient the rescue effort might have been.

Source: Merrin, Stephanie. (1975) "Accident Report." *The Canadian Caver.* Vol. 7, No. 2, pp.3-7.
Report by Allan P. Haarr.

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West Virginia, John Brown's Cave Sunday, 13 July 1975

Ten cavers using flashlights for illumination were leaving John Brown's Cave when Dave Thornton, whose flashlight had gone out, fell trying to cross a pit near the entrance. He was wearing a helmet fastened with a string, and he struck his head several times during the fall. Thornton suffered a fractured lateral projection of the spine. Other members of his group were able to get him out, but he was expected to be off work for 6 to 8 weeks.

Analysis: It is hard to see hazards in poor (or no) light.

Source: True, Fred. (1976) *The Brass Light.* No. 3, pp.28-29.

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West Virginia, Norman's Cave Saturday, 19 July 1975

Bob Boward (28) and Robert Gulden made a sightseeing trip through Norman's Cave. Around 7 p.m. on the way up out of the wet stream passage going into the Entrance Room, Boward slipped as he climbed over a large breakdown block. Boward dislocated his shoulder. His arm was immobilized by tying it to his side with webbing. Because of the pain it took 1½ hours to go the 200 feet to the entrance.

Analysis: The breakdown was very slick. The group was correct in immobilizing the dislocated shoulder before trying to move the victim.

Source: Report by Robert Gulden.

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California, Big Stream Cave July 1975

Bill Devereaux was stunned and lightless after being stuck by a rock which fell down an icy waterfall. He was then inadvertently left behind by companions and suffered serious hypothermia. It appeared doubtful whether he could have climbed out unaided with his 3-Gibbs ascending rig.

Analysis: This information is too sketchy for proper analysis. Supposedly it was reported in more detail in the *Underground Express* of the Willamette Valley Grotto.

Source: Dyas, Mike. (1976) "Local Publications Review." *NSS News.* Vol. 34, No. 2, p.32.

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South Dakota, Jewel Cave First week of August, 1975

While on a cross-country trip, four members of the Mother Lode Grotto and five members of the California Cadet Corps Rifle Team, stopped at Jewel Cave National Monument for 2 days of spelunking tours. Even though this was only Gary Johnson's third cave, he did all right during the first day of caving. But because Johnson was 6 foot 4 inches tall and weighed 240 pounds, his party was concerned about the tight crawlways they planned to explore the second day.

On the second trip Johnson was able to get through Hurricane Corner without difficulty. At the Brain Drain he tried to crawl through on his back. After trying for about a half hour, he started getting cold, so he gave up on getting through and started backing out. He moved back about a foot and a half and then announced he was stuck.

Jack Espinal described the problem: "At this point, Johnson's best friend, Ray Miller, lost control of himself. He started crying and yelling that they should never have come on this trip and that Johnson was going to die in the cave. I think that Johnson started to panic when he heard this. Don Currier started talking to Johnson to calm him down

while I pushed Miller on down the Passage to get him away from Johnson. I told him to get hold of himself and then come back and help us.

"In the meantime we had Johnson try several things to free himself. We had him try and move sideways but he was unable to. We tried to calm him down by talking to him (this might relax his muscles and he would be able to free himself) but this didn't seem to help. We pulled on his legs but this only caused pain in Johnson's rib cage. Finally Johnson's coveralls were cut in order to remove them and give him some room; however, this also failed to help.

"At this point we dispatched a party for help. We were located about forty-five minutes travel time from the elevator entrance to the cave. It took about two hours for help to arrive. During this time every possible thing was done to make Johnson comfortable and to keep him warm. The blanket from the Cave Rescue Bag was placed under Johnson's body as much as possible. The rest of it was draped over him. Several members of the party donated sweatshirts and coats to the cause.

"By this time I noticed that Johnson had started to develop the symptoms of hypothermia. He began shivering and would go into short periods of incoherence. Two carbide lamps were placed close to Johnson's head and upper body in an attempt to increase his heat supply. Johnson said that the light and heat that they produced helped him. We also gave him a couple of candy bars to increase his energy reserve.

"When the rescue party returned with hammers and chisels a knob of calcite crystals (nailhead spar) was chipped away. About seven cubic inches of rock were removed. Johnson then slid his body to the right and freed himself. He then spent about a half an hour resting and drinking hot tomato soup brought in by the rescue party. By this time Johnson was in very good spirits and he moved out of the cave under his own power."

Analysis: Care should be taken when encouraging new cavers into tight squeezes. Should difficulty arise in any emergency situation, any person who panics should be removed quickly from the vicinity of the victim.

First aid for hypothermia should begin early in a rescue. Carbide lamps, hot food, and extra clothing can be used to prevent chilling of the victim.

Source: Espinal, Jack. (1975) "Rescue at Jewel Cave National Monument." *The Valley Caver.* Vol. 14, No. 5, pp.2-5.

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Maryland, Twigg Cave August 1975

Robert Mongold (30 or 31) and his wife, Anita (25 or 26), wanted to obtain clay for modelling. They sneaked into Twigg Cave one night about midnight (the owner of the cave does not grant permission to explore it). Mrs. Mongold originally planned to stay outside but her husband wanted her to see a rock formation in the cave. They climbed down the entrance

fissure on a homemade rope ladder. Only a few hundred feet inside their flashlight stopped working.

Several days later Anita Mongold floundered down a steep, 30-foot incline. Her husband was able to grope his way to her but they could not climb back to the main passage. They spent their time huddling for warmth, drinking cave water, and discussing their favorite foods.

The couple was not soon missed since they were in the habit of going off on extended caving and camping trips without informing anyone of their plans. Eventually Anita Mongold's parents began to search for the couple. Their pickup truck was spotted near the cave. Three members of the Narrows Grotto of the NSS were called in to help search. The grotto members found the couple on Tuesday 19 August 1975. It took several hours to lead the weakened couple out of the cave.

The Mongolds had been in the cave for either 10 or 13 days (their account changed). They were both near starvation. According to the examining doctor, Robert Mongold had lost 21 pounds and was within 2 or 3 days of death. Anita Mongold had lost 26 pounds and the doctor doubted whether she could have lasted another day. The victims thought they had been in the cave about 5 days when rescued.

Analysis: The Mongolds violated the basic rules of carrying three sources of light and informing someone about their whereabouts. If their truck had not been spotted they would almost certainly have perished.

Sources: Richards, Bill. (1975) "Story-Book Rescue in Cave?" *Washington Post.* (22 August 1975), p.C1.

Anon. (1975) "Pair Near Death after 10 Days in Cave." *Washington Star.* (21 August 1975), p.B1.

Dyas, Mike. (1975) " 'Spelunkers' Nearly Starve in Maryland Cave." *NSS News.* Vol. 33, No. 10, p.162 (also in *D.C. Speleograph.* October issue, p.15).

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Alabama, Moates Cave (also known as **Sand Cave** and **Cave Hollow Cave**) Sunday, 17 August 1975

Bill Asherbranner (25) and three companions had lights to explore Moates Cave but did not have any ropes. Asherbranner fell 50 feet and landed in a pool of water 4 feet deep. His companions tried to rescue him with a heavy vine, but Asherbranner, who has only one arm, did not have the strength to hold onto the vine to be pulled out. Two of the men then went for help. Asherbranner was hoisted to safety by the Flint Rescue Squad after 6 p.m., about 4 hours after the fall.

Analysis: The group was clearly unprepared for the cave. Undoubtedly the water reduced the shock of the fall. It is good the group gave up their attempt to rescue their fallen member since they did not have the experience nor equipment to handle it.

Source: Anon. (1975) "Man is Rescued from Cave Fall." *The Decatur Daily.* (18 August 1975).

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Texas, Indian Cave Saturday, 23 August 1975

Indian Cave is entered through a 60-foot pit which drops into a room 45 feet in diameter. The pit is nearly vertical and has no loose rocks in or near the immediate drop, although there are a number of rocks on the floor.

Steve Gutting (22), Ed Gelsone (21), Greg Passmore (17), and April Austin (23), all of the Alamo Grotto, as well as Paul Carey (19), a novice, were using the cave for vertical practice. Around noon Carey climbed out on one of the two ropes rigged in the pit. At 12:18 April Austin was a few feet off the ground on the other rope when Carey accidently broke off an exfoliation formation when he tried using it for a foot hold to get over the lip of the pit. Carey shouted, "Rock!" Gutting and Gelsone ran for cover but were struck with rock fragments.

Ms. Austin was on the rope and was unable to move to safety. After the rockfall she was in a sitting position hanging from her Jumar safety. It was quickly determined that she was seriously injured and could have a broken neck. Gutting called to the surface for a rescue. The cavers decided that they needed to get Ms. Austin off the rope as soon as possible so Gelsone lifted and supported her while Gutting unclipped her Jumars and they lowered her to the floor. She was still unconscious but had a pulse and was breathing without difficulty. She had a laceration on her skull but it was not bleeding. They treated her for shock and called to the surface for more clothing to cover the victim. After 5 minutes Ms. Austin regained consciousness. She complained of general pain all over, especially in her head.

On the surface, Passmore had gone for help but was unable to start Gutting's car, so he ran to the nearest house and called Chuck Stuehm, who in turn contacted two area cavers and Terry Jones, an EMT for the city of San Antonio.

At 12:40 San Antonio firemen arrived at the cave. Terry Jones arrived 3 minutes later. The cavers on the surface took all necessary steps to prevent anything else from falling into the pit. At 1:15 Jones descended into the cave, examined Ms. Austin and described her condition and vital signs to the doctor on the surface. Steve Gutting helped Jones immobilize the victim's neck with a neck collar and apply a dressing to her head injury. A caver came halfway down the pit to a ledge to help in lowering and raising the Stoke's litter. By 2:15 Ms. Austin was on the surface and in the care of the doctors. Her injuries included a fractured skull, a compacted vertebra in her neck, and minor cuts and bruises. She was expected to recover fully.

Analysis: "This accident was indeed freak as this is not a cave of much activity and the force applied to the exfoliated formation (which could not be detected until it broke loose) was much less than the force applied

when we rappelled using this portion of the wall to spring from. If we had not rigged two ropes April would have been in a different position enabling her to get out of the way of the falling rock.

"One distinct fact that this accident has made even more evident is the poor quality hard hats that most cavers wear as head gear. They are for the most part no more than light carriers. Even though the helmet April was wearing failed, it did prevent her from further injury. The impact of the falling formation on April's helmet caused the helmet to be compressed down to the top of her head, and at the same time the poorly constructed helmet liner split apart, letting the helmet come in direct contact with her head. The helmet was of the plastic type construction with a label stating that it passed the ANSI Z89.1 and Z89.2 safety requirements.

"It is very evident that cavers in this area have been depending on helmets of very poor safety standards. The helmet may stop a falling object, but the liners will probably pop apart, leaving you with no protection at all. We firmly believe that this is one area in which cavers should spend some extra money and purchase a helmet that meets the standards of the Mountain Safety Research Company."

Source: Anon. (1975) "Accident Report." *The Texas Caver.* Vol. 20, No. 12, pp.186-187.

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West Virginia, Snedegar-Crookshank Cave Saturday, 30 August 1975

Five people from Pennsylvania including three men, Bill Kent, Bob Andrews and Jay Sidman, and two boys, Scott McIntosh and Bruce Widdows, descended the Crookshank Pit. It is a 100-foot vertical waterfall entrance to the Snedegar-Crookshank System. They planned to make the connection between the two sections of the cave and leave by the Saltpeter Miners Entrance although no one in the party had made the connection before. Andrews and Sidman became soaked in the Rick's Siphon passage and ascended the rope out of the cave. Kent and the boys were unable to find the connection and returned to the pit. The waterfall had increased in size because of rain on the surface. Kent was able to climb out through the waterfall but decided the ascent was too difficult for the boys. Andrews left to find someone who could descend the pit and lead the boys out another entrance.

Meanwhile five cavers from the Met Grotto had entered by the saltpeter entrance and by chance had discovered the boys at the bottom of the Crookshank Entrance. Both boys were suffering from the initial stages of hypothermia and one boy was unable to move his fingers because of the cold. Knowing that any attempt to remove the boys by the pit would involve a wait of at least one hour, it was decided to take them out through the connection to Snedegar's. This involved carrying them through some of the deep pools to prevent further loss of body heat. The exit was completed without major difficulty.

Analysis: "The entire party was under-experienced and under-equipped for this cave. The adult leaders had been told this in at least three separate discussions with different individuals before they made their attempt. In one of these discussions they stated that they 'didn't have time' to become involved with a regular grotto.

The party was unfamiliar with such basic terms as belay and carabiner (though they had some). When told that a belay was a safety rope they said they would tie a safety around their chest.

No safety was used. The party had only one rope.

No padding was used under the rope at the edge of the pit.

No method of communication had been worked out between top and bottom. The boys had no idea of what was happening.

No one in the party had made the connection to Snedegar's before.

No one in the party was familiar with the conditions and effects of exposure. After the boys were out of the cave, some two hours after we found them, we found the adults waiting for someone experienced to show up. Both boys could have been dead by this time.

Failing to find an experienced person, no attempt had been made to alert the county authorities.

The boys were ill equipped for even regular caving; only one had a headlamp, the other a large six-volt flashlight.

It is only through the most fortuitous of circumstances that a fatal accident was avoided. Any one of the errors made could have been disastrous." (Greene)

Sources: Greene, Barry. (1975) "Rescue at Crookshank Cave." *Met Grotto News.* Vol. 25, No. 4, pp.33-34.

Dyas, Mike. (1975) "Three More West Virginia Cave Rescues Chronicled." *D.C. Speleograph.* December issue, p.12.

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Florida, Peacock Sough Saturday, 30 August 1975

When three cave divers reached their turnaround point in Peacock Slough, William Hurst (34) signaled for the other two to leave the cave. Hurst then continued to explore a side tunnel; however, he left a 25-foot gap between a safety line in the tunnel and the line leading out of the cave. Evidently when he returned he could not find the line going to the entrance. His body was recovered early Sunday morning some 10 hours after he drowned.

Analysis: Hurst had about a year and a half of cave diving experience yet he ignored two fundamental rules: never cave dive alone and never leave the safety line. In caving or cave diving, confidence not tempered with caution will often lead to the neglect of essential safety practices, and could result in injury or death.

This was the fifth cave diving fatality in Peacock Slough during 1975; however, we have no information about the other accidents.

Source: Corbin, Will. (1975) "Pollution Director Hurst Drowns in Diving Accident." *Gainesville Sun,* 1 September 1975.

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Alabama, Tumbling Rock Cave Sunday, 7 September 1975

Don Davison, Jr., Cheryl Jones, David Green, and Glenn Cook entered Tumbling Rock at 1:20 p.m. in order to attempt to reach the top of Topless Pit which is about 3800 feet into the cave. Davison and Jones, both experienced vertical cavers, spent several previous trips attempting to aid climb to the top of the dome in hopes of finding new leads. They ascended fixed ropes to their highest belay position, the Crow's Nest, 270 feet above the floor. Meanwhile the others began ferrying previously stockpiled support gear out of the cave. Davison ascended to the 360-foot level and then, belayed by Cheryl Jones, climbed antoher 25 feet. Because of rotten rock and a waterfall, they quit for the day. Davison descended to a ledge 174 feet above the floor, traversed along the ledge using a trolley line, and then descended to the 134-foot ledge. Cheryl Jones prepared to descend from the 174-foot ledge. The rappel line from that ledge was attached with a carabiner to a carabiner chock and then backed to a hexcentric nut in a crack. The carabiner chock was solid against a downward pull, but not against an upward pull.

At about 10 p.m. as Cheryl Jones rappelled below the lip of the 174-foot ledge, the carabiner chock and its backup pulled out. She fell about 40 feet. In the process the rope flipped her upside down, and she banged into the wall. Her fall was arrested by her rack which was bent from the shock after the slack came out of the rope. She hung inverted in the waterfall about 130 feet above the floor. She was unconscious and blood streamed from her head lacerations. Her Fibre-Metal helmet hung by the cord to her Wheat Lamp. Cheryl Jones regained consciousness, and although severely disoriented and dazed, was able to right herself and apply direct pressure to her scalp wound.

Davison was on the 134-foot ledge about 40 feet from the victim. He constructed a 2-to-1 pulley system and was able to pull her about 20 feet and away from the waterfall. She was still somewhat confused but had repositioned her helmet discovering that the lamp lens was fractured. Her neck hurt badly, and she suffered a debilitating injury to her left elbow. Her condition stabilized somewhat. Davison drove two bolts in order to get to Cheryl. After some difficulty when it was necessary to cut the rope she was suspended from, Davison was able to get her to the 134-foot ledge.

Green then returned to the pit and was told to summon the Huntsville Cave, Pit and Cliff Rescue Unit. He was to bring a first-aid kit, 400 feet of Bluewater rope, blankets, and a Stokes litter. The call was received at 12:45 a.m. Monday by W. W. Varnedoe, Jr., chief of the team. Eleven men reached the cave which is about 60 miles from Huntsville by 2:35 a.m. and an hour later they were at the dome.

Meanwhile Davison had treated the injured woman with first-aid, given her a wool sweater, and placed a plastic garbage bag over her legs.

Davison descended to the floor, changed carbide, and then carried food back up to the victim. A carbide lamp was used to provide warmth. When the rescue team arrived, the victim was lowered to the floor and placed in a Stokes litter. The rescue party performed efficiently and got the victim to the entrance by 7 a.m., 9 hours after the accident.

Analysis: "1.) The exact circumstances involved in the failure of the rappel anchor are not known since the route to Gargoyle Ledge has not been reclimbed at this time. 2.) The Davison System seat maintained its position despite the force at the inverted termination of the fall. 3.) The chin strap was forcefully separated from the helmet button, as was the suspension at that point, causing Cheryl's helmet to fall from her head. On the 134-foot ledge, the chin strap, button, and suspension were reunited since no damage had occurred to any of the parts. These facts cause questions to be raised concerning the use of Fibre-metal suspensions and chin straps. 4.) It was pure chance that all the necessary hardware was available for me to use [for the rescue]. 5.) The Stokes litter should have an ensolite pad on the bottom to protect the blankets from water and the victim from heat loss when the litter is set on the ground. 6.) Air splints and cervical collars would be valuable additions to the first aid kit. 7.) The dri-suit and plastic bags enabled the victim to maintain body temperature and eliminated exposure as a complicating condition." (Davison)

"The use of this rappel anchor, while it might have been sound under most circumstances, become unsound when coupled with a fatigued and, hence, less alert caver. Anchors should be chosen with the view that they may not always be treated with due caution." (Varnedoe)

Sources: Davison, Don, Jr. and Cheryl Jones. (1975) "Accident in Tumbling Rock." *The Huntsville Grotto Newsletter.* Vol. 16, No. 6, pp.56-59.

Varnedoe, W. W. Jr. (1975) "Cave, Pit and Cliff Rescue Unit Accident Report." *The Huntsville Grotto Newsletter.* Vol. 16, No. 6, pp.54-56.

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West Virginia, Beacon Cave Saturday, 13 September 1975

At about 2 p.m. four Bluefield College students, Peter Dikternik, Larry Yates (20), Perry Coffey (18) and Jerry Johnson (18) entered Beacon Cave. Dikternik had trouble negotiating the tight spots so he left to wait for the others who promised to be out by 5 p.m. Shortly afterward Yates took a tumble and smashed his flashlight. The other flashlights in the group also began to peter out.

Saturday evening Dikternik reported his friends overdue. The Bluefield Rescue Squad and nine members of the VPI Grotto participated in the search. The cavers were not found that night, and without food or water they huddled together and prayed. At dawn the three noted a beam of light coming thru the bulldozed Hayne's Entrance. Coffey, who is tall but slim, was able to squeeze through the entrance,

but his companions were too large. Coffey located the searchers who passed donuts and water to the trapped students. Other rescuers then led the two out the Beacon Entrance about 23 hours after they had entered.

Analysis: The students were inexperienced and did not have adequate light, food, or other caving gear.

Sources: Report by Lor M. Windle.

Dyas, Mike. (1975) "Three 'Speleo-Boppers' Lost Overnight in West Virginia Cave." *D.C. Speleograph.* November issue, p.19.

Gay, Lance. (1975) "Lost Explorer Finds Cave No Place for Him." *Washington Star.* 15 Sept. 1975, p.B1 (reprinted in *Baltimore Grotto News,* Vol. XV, No. 2, Oct. 1975).

Anon. (1975) "Three College Students Rescued." *Wheeling Intelligencer.* 15 Sept. 1975 (reprinted in *Karst Caver,* Vol. 9, No. 3, p.73).

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Alabama, Schimmel Pit Sunday, 21 September 1975

One Sunday afternoon Bert Grainger (13) and several friends decided to enter Schimmel Pit which consists of a small diameter 30-foot drop to a talus slope leading down about 12 feet to another 15-foot pit. Grainger began to descend the first drop hand-over-hand on a small diameter rope. He was about half way down when the rope broke and he fell. His only injury was a cut lip.

One youth ran for help and notified the police who in turn contacted the Madison County Rescue Squad who called the Cave, Pit and Cliff Rescue Unit. Before the rescue group arrived one of Grainger's companions, a sixteen-year-old girl, chopped down a small tree and inserted it into the pit. Grainger then climbed out and was taken to a hospital.

Analysis: The children were clearly unfamiliar with safe caving techniques. The girl showed great ingenuity in improvising a method for the boy to escape, but such ingenuity could easily have led to a second fall.

Source: Report by Darwin Moss.

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Kentucky, Simpson's Cave Tuesday, 9 October 1975

Johnny Wilson (12) had been to Simpson's Cave two or three times before, but his friend, Scott Trotter (11), had not. They entered the cave after school Tuesday using a lantern for light. When it started flickering they began to run to get out. The two boys fell over a ledge and Trotter injured his nose and Wilson bruised his knee. They were found about midnight by the Somerset-Pulaski County Rescue Squad and Pulaski County Sheriff's officers.

Analysis: Clearly the boys did not have adequate light nor experience for cave exploration.

Source: Mardia, Bill. *Somerset* (Kentucky) *Commonwealth-Journal.* 9 Oct. 1975 (reprinted in part in *COG Squeaks*, Vol. 18, No. 10, October 1975).

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West Virginia, Nutt Cave Saturday, 8 November 1975

Around noon, a group of eight young people from a Romney, West Virginia school for the deaf entered Nutt Cave equipped with flashlights and Butterfly carbide lamps. In the stream passage, they encountered another party, whom they followed through the breakdown maze to the formation rooms in the rear of the cave. Apparently because of the deaf people's handicap in communicating, they were left behind when the other group departed, and were unable to find their way back through the breakdown.

The group pooled their limited number of lights for the use of three of their members. As five students remained, the three were eventually able to get out of the cave—but not until 10 a.m. Sunday. The cave is probably less than 1000 feet in its entirety.

The Franklin Volunteer Fire Department/Rescue Squad notified NSS member Dave Hubbs who was able to find the youths within 15 minutes of entering the cave. The people were unharmed but chilled and frightened and did not realize they had been in the cave over 24 hours.

Analysis: The students were inexperienced and lacked a capable leader. Undoubtedly the deaf students had considerable difficulty communicating among themselves and organizing a concerted search effort. The group which led them to the back of the cave and then left them when they could not keep up is to be condemned.

Source: Dyas, Mike. (1975) "Three More West Virginia Cave Rescues Chronicled." *D.C. Speleograph*, Dec. issue, pp.12-13.

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West Virginia, Schoolhouse Cave Saturday, 29 November 1975

Members of the Boston Grotto had explored Schoolhouse Cave the previous day but had left their ropes in place. A group of five cavers entered at 5:30 a.m. to rerig the cave. Around 12:30 p.m. Warren Heller had completed Leo's Climb near the Judgement Seat and had gotten off rope when the ledge he was standing on gave way. He immediately called, "Rock!" and was able to arrest his sliding fall in about 10 feet. The three cavers below Heller at the top of a 100-foot drop were able to dodge the rock. Carl Traina at the bottom of the pit was unable to completely get out of the way of the rocks. A 75-pound, rectangular rock struck him a glancing blow just below the small of the back. The victim

was fully conscious, coherent, and not bleeding externally but in considerable pain.

A member of a second party which had just entered the cave was sent for help. Twenty-five people, mainly from the Boston and Philadelphia Grottos and the Potomac Speleological Club, were able to get the victim out by 7:30 p.m. This involved raising him in a Stokes litter up three pitches. Traina suffered fractures of the lower sternum and hip ball joint and was expected to be hospitalized about one month.

Analysis: Heller misjudged the condition of the ledge. Possibly more thought about the danger of rock falls by those at both the top and bottom of the pit could have prevented this accident. The rescue was very efficient because of the large number of highly qualified cavers in the area at the time.

Sources: Cullen, James J. (1976) "Accident in Schoolhouse Cave, West Virginia." *NSS News.* Vol. 34, No. 2, p.19.

Ibberson, Dale (1975) "Schoolhouse Rescue, Pendleton Co., W.Va." *York Grotto Newsletter.* Vol. 13, p. 44.

Dyas, Mike. (1976) "Rescue at Schoolhouse Cave." *D.C. Speleograph.* January issue, p.17.

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Florida, Promis Springs Sunday, 30 November 1975

Lewis Holtzendorff (30) and Courtland Smith Jr. were scuba diving to a depth of almost 225 feet in the Promis Springs cave. They were on their way to the surface following the experimental dive when at about 40 feet from the top, Holtzendorff blacked out and fell on Smith. Smith began to buddy-breathe with his diving partner, but also felt he too might be beginning to black out. He swam to the surface and got another tank of compressed air. Holtzendorff could not be resuscitated with the second tank. He died about 6 a.m. while completing decompression.

Analysis: The editor does not know what about the dive was experimental and how this may have influenced the outcome of the accident. Holtzendorff was considered a highly qualified cave diver who had made significant discoveries in numerous Florida caves.

Sources: Vail, Becky (1975) "Valdostan Dies Diving in Cave." *The Valdosta Daily Times.* 1 December 1975.

DeLoach, Paul (1976) "Lewis Holtzendorff." *Cave Diving Section Newsletter.* Winter issue, pp.57-58.

Anon. (1976) "Lewis Holtzendorff, NSS 14831." *NSS News.* Vol. 34, No. 5, p.76.

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Texas, Pumkin Cave 1975

A Laredo Speleological Society member fell 50 feet to his death in the entrance pit of Pumkin Cave. The iron stake to which his rope was tied broke off as he began descending into the pit.

Analysis: Although this information is very sketchy, the accident was attributed to carelessness, unnecessary haste, and not using a belay. If the tie-off point is at all questionable, the rope should be tied to 2 or more independent points.

Source: Morris, Neal. (1975) "TSA BOG." *The Texas Caver.* Vol. 20, No. 10, pp.153-155.

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West Virginia, Bowden Cave 1975

Three novices from Columbus, Ohio, Jon and Ronnie Lucio and Jeff Thompson, intended to traverse from the main entrance of Bowden Cave to the upper entrance No. 3. The latter is a small opening above a fissure, reached by a rather long crawl from the cave's complex upstream area. They tried two passages unsuccessfully but in the process became soaking wet from stomach crawls in mud. Realizing they were near exhaustion to the point of being clumsy, they had no choice but to rest. Since the floor was quite damp, they stood from about 6 p.m. to 6 a.m. rather than risk losing body heat into the floor. In the morning they started exploring again, hoping that the sun would make the entrance easier to find. The group was found about 50 feet from entrance No. 3 by members of the Monongahela Grotto.

Analysis: The rescue had been delayed by a register note left by the lost group indicating their plan to exit by the main entrance; hence, the entrance No. 3 area was the last to be searched.

The lost group was systematically checking out the passages and had only two more to check when they were found. They fully realized the dangers of hypothermia and decided to rest and conserve energy after they recognized the first signs of hypothermia. It is not clear whether standing up all night is a good way to conserve body heat.

Sources: Report by Jon and Ronnie Lucio and Jeff Thompson.
Dyas, Mike. (1975) "Three More West Virginia Cave Rescues Chronicled." *D.C. Speleograph,* Dec. issue, pp.12-13.

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San Luis Potosi, Mexico, La Hoya de las Conchas 1975

Julia James, Neil Montgomery, Tracy and Shelia Johnson, and Bill Stone had gone down ten drops to a depth of 175 meters in la Hoya de las Conchas. As Sheila Johnson was making a difficult traverse, a foothold broke. She flipped twice in the air and landed in a shallow pool 5 meters

below. She received facial injuries, and rescue operations were begun immediately. In 5½ hours the group pulled her up all the drops using a haul line, a belay line, and a separate climbing line for assistance.

Analysis: "There is no question that the pitch Sheila fell on, though climbable, should have had a handline. The team's shortage of rope (which ultimately stopped further exploration at -500m) was a thin excuse. Everyone's climbing ability must be considered, not just that of the best climber, who is usually in the lead deciding whether to rig or not. The cave's depth and wetness, and the team's shortage of personnel all counselled prudence. Few accidents have yet occurred in American deep caves, but it is much to their credit that the rescue team got Sheila out so quickly—and no small part of this credit goes to the Australian cavers. Also of note is the fact that Sheila's helmet, a construction type with elastic chin strap, flew off her head in mid-fall. Under the centrifugal force of a fall the chin strap will stretch, and such a helmet will leave the head. Sheila was lucky." (Sprouse)

Source: Sprouse, Peter (1976) "Mexico." *NSS News.* Vol. 34, No. 3, pp.51-52.

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Indiana, Buckner Cave 1975

Indiana University biology professor David Dilcher (39), his wife Katherine (38), their son and daughter, Peter (9) and Ann (7) and Mark Davis (9) became lost while exploring Buckner Cave. They had never been in the cave before and became lost while trying to follow a map of the cave. Mark Davis's mother notified the police when her son and the Dilchers did not return Thursday evening. Rescuers found the group Friday about 11 hours after they had entered. They were waiting for rescuers about half way around a commonly travelled loop.

Analysis: The group attempted to rely on a map rather than their power of observation.

Source: Newspaper clipping.

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Indiana, unidentified cave 1975(?)

Roger Hitterman (18), Perry Haeberlein (17) and Robert Lavey (17) entered a cave near Ramsey around 4:30 p.m. About 2½ hours later as they were leaving, a rock slide started at the entrance. Hitterman was able to get out before the main slide trapped his two companions in the entrance. He was unable to move the large rocks and therefore sought assistance. The State Police, Ohio Valley Rescue officials, the Ramsey Volunteer Fire Department, Harrison County sheriff's deputies and

numerous local residents responded. By 10 p.m. rescue workers had pierced the wall and the boys crawled to safety unharmed.

Analysis: Police were unable to confirm whether Hitterman may have started the slide by grabbing loose rocks. In any event not enough care was taken in an unsafe area.

Source: *Jeffersonville* (Indiana) *Evening News* clipping.

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If you ever get trapped in a flooded cave, you have the rest of your life to get out.

Reportedly overheard at
1974 NSS Convention

Summary

This issue of *American Caving Accidents* contains the reports of 42 incidents involving 86 persons.

The summary tables have been divided into two parts. The first part gives statistics on the type of cave accidents. For each accident report there is one entry under situation, month, and day of the week. Classification of accidents by cause and contributory cause is open to a lot of subjective interpretation of the individual reports since often an accident occurred only after a combination of events had taken place.

The second part of the summary tables deals with the accident victims. In each category, there is one entry for each victim.

Suggestions for improvement or modification of the summary or any part of this report are welcome and should be addressed to the National Speleological Society, Safety and Techniques Committee, Cave Avenue, Huntsville, Alabama 35810.

ACCIDENTS	1967-1975	1975
Situation		
General	117	24
Vertical	85	15
Diving	18	3
Immediate Cause		
Fall	74	13
Falling rock or object	22	6
Failure of rappel or prusik	18	2
Stumble	14	4
Exposure and/or exhaustion	11	1
Burns	6	0
Asphyxiation	3	0
Illness	6	1
Drowning	24	4
Animal attacks	1	0

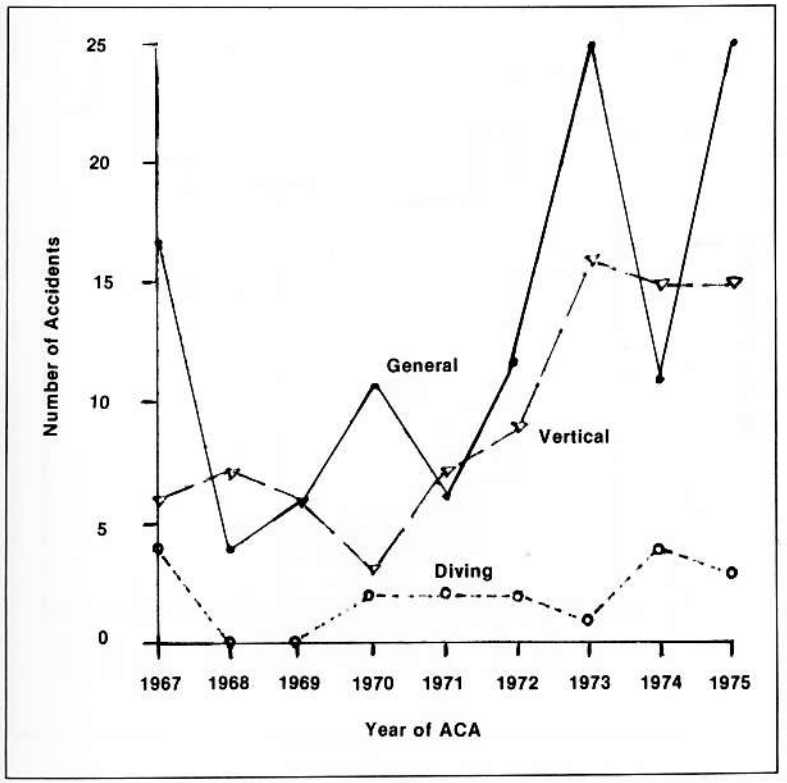
	1967–1975	1975
Contributory Causes		
Climbing unroped	32	9
Caving alone	4	1
Exceeding avilities (inexperience)	81	16
Inadequate equipment	43	9
Worn equipment	7	1
Bad weather (including flooding)	13	5
Exposure and/or exhaustion	16	6
Loosing way	28	11
Light failure	17	6
Party too large	6	0
Party separated	7	2
Getting stuck	20	6
Hurry	2	0
Poor judgement	34	9
Month		
January	15	3
February	14	3
March	21	3
April	16	3
May	17	3
June	16	2
July	13	4
August	16	6
September	12	3
October	19	2
November	23	4
December	20	0
Unknown	13	6
Day of Week		
Monday	9	1
Tuesday	5	2
Wednesday	12	1
Thursday	6	2
Friday	16	0
Saturday	66	14
Sunday	60	11
Unknown	33	11
ACCIDENT VICTIMS		
Sex		
Male	263	55
Female	35	11
Unknown	32	20

	1967–1975	1975
Age of Individuals		
"Boys"	11	6
Under 15	19	8
15-20	94	15
"Young or college age"	26	10
21-25	47	7
26-30	23	6
31-35	11	4
Over 35	13	4
Unknown	70	26
Affiliation with Caving Group		
Unaffiliated	148	49
Member of caving group	71	13
Unknown	88	24
Estimate of Experience		
None or little	177	62
Moderate	23	3
Experienced	48	10
Unknown	59	11

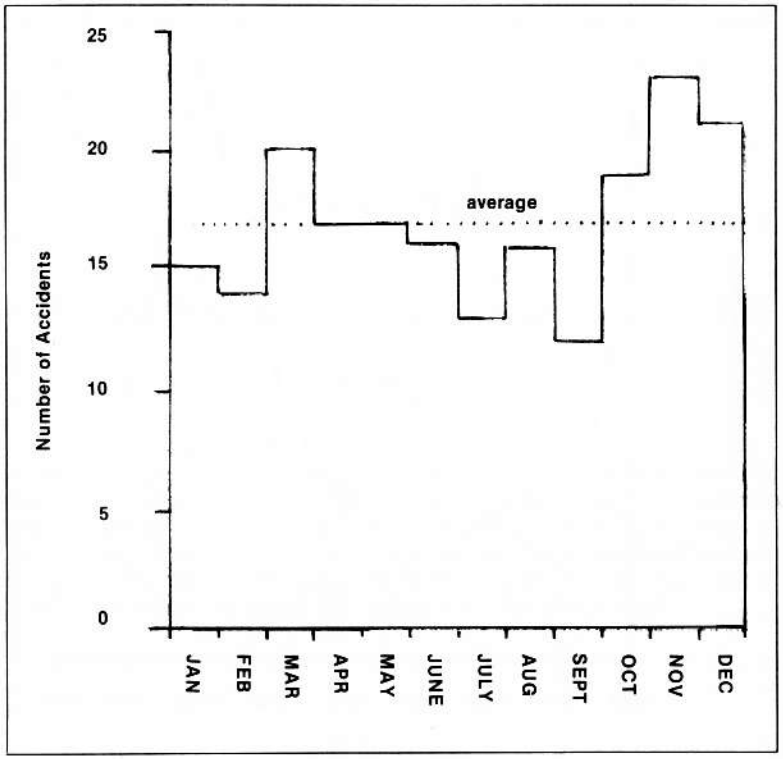
Appendix

Graphical Presentation of the Cave Accident Statistics

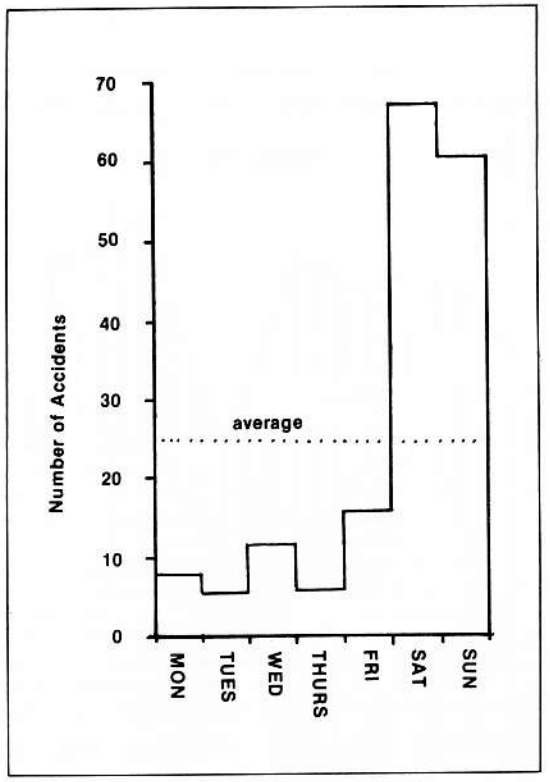
These graphs are based on the nine issues of ACA between 1967 and 1975. Accidents for which we did not have certain data were omitted in the compilation of that data. For example, if it was known that an accident occurred in April but the date or the day of the week was not known, then that accident is used in the compilation of accidents by month but not in the compilation of data by day of the week.



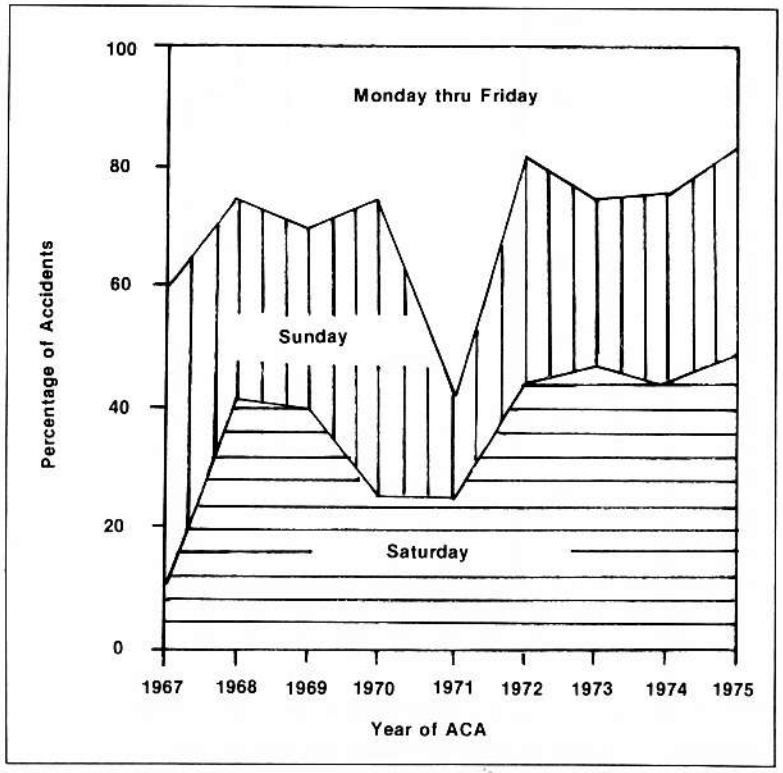
Graph 1. The number of cave accidents by situation. The rise in the number of accidents *may* be an artifact of the reporting efficiency. As stated previously, there were many diving accidents which were not reported in ACA. Roughly 40 to 45 percent of the non-cave diving accidents were while vertical caving.



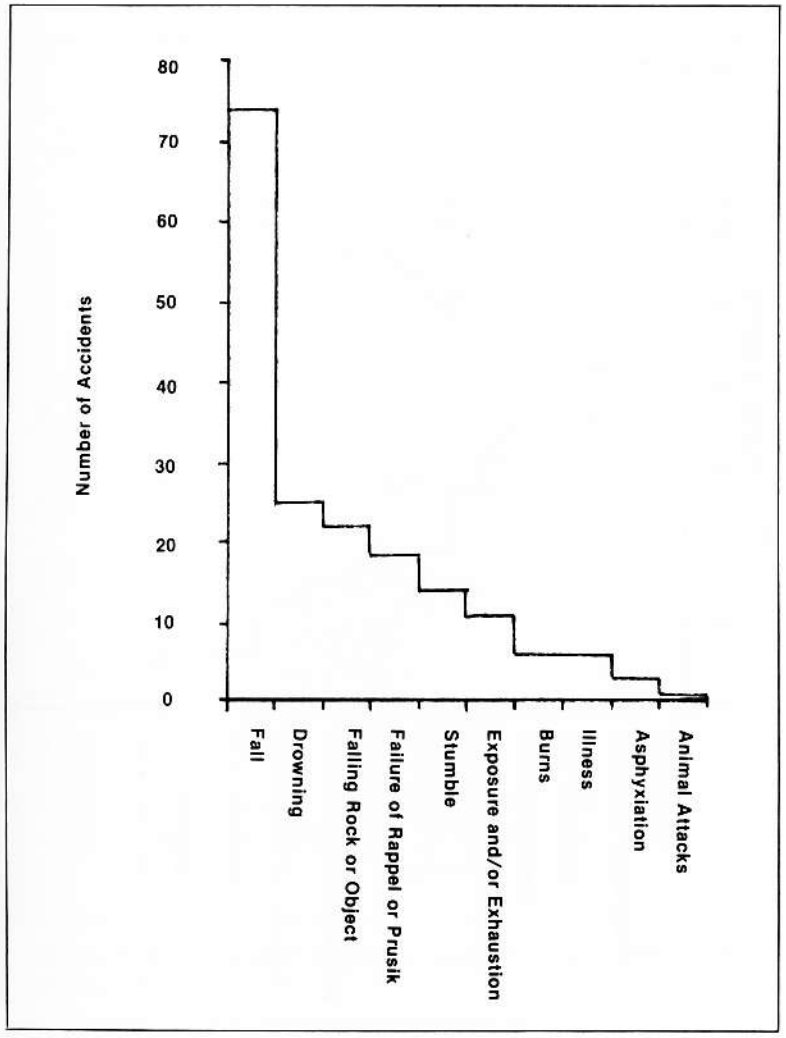
Graph 2. Cave accidents by month of the year. The cave accident rate is slightly lower than average in summer and slightly higher in fall.



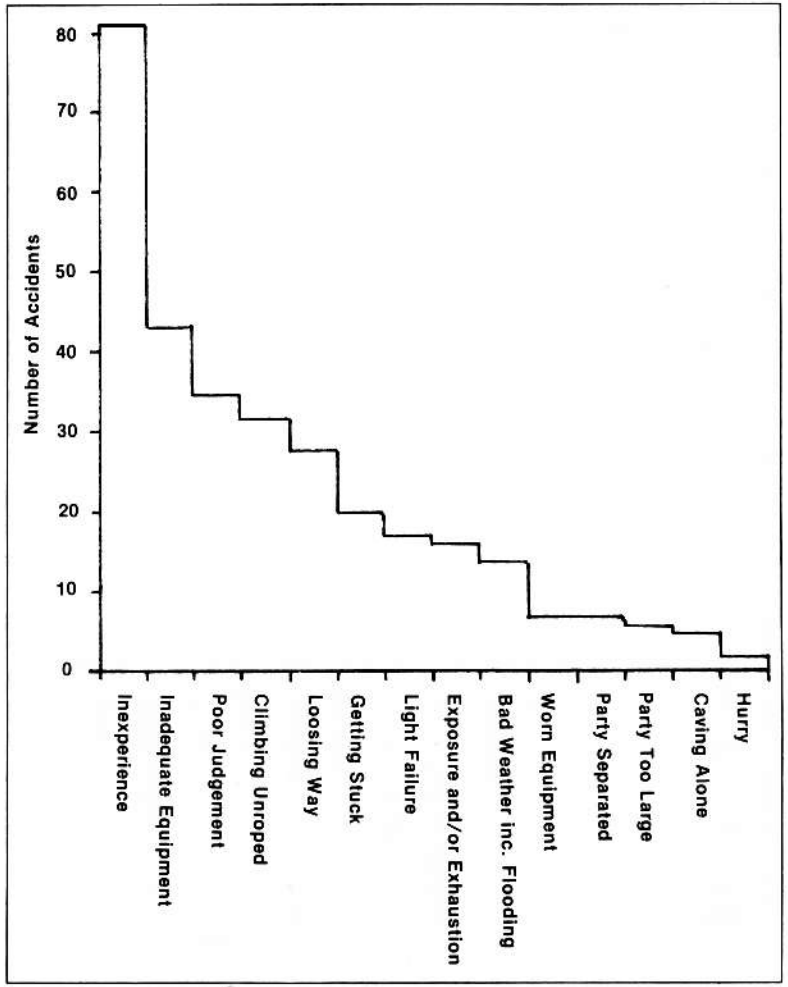
Graph 3. Cave accidents by day of the week (1). Cave rescue teams should note that 73% of the cave accidents happen on weekends.



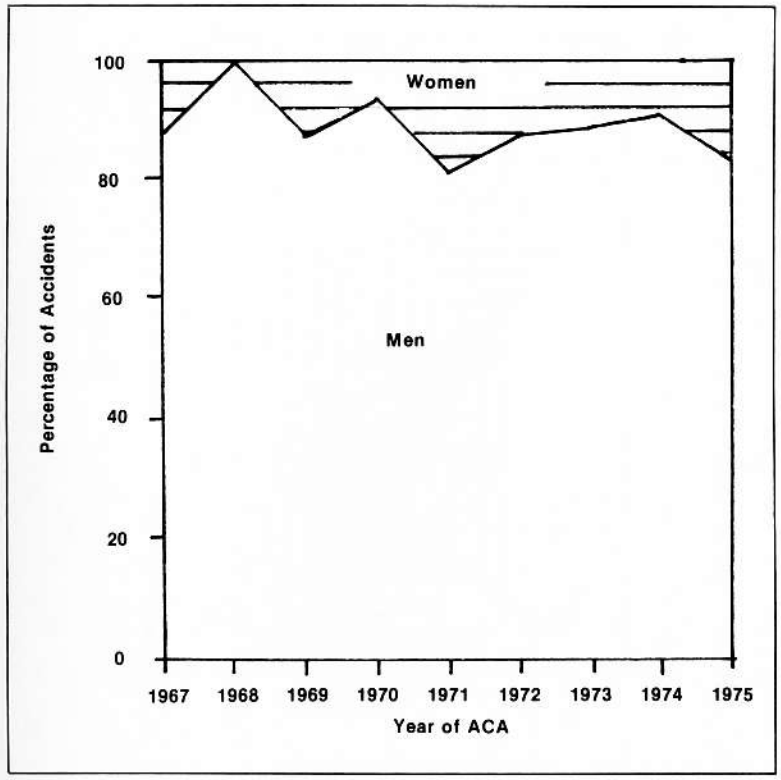
Graph 4. Cave accidents by day of the week (2). The high incidence of weekend cave accidents has held for all but one year since the Safety and Techniques Committee began publishing ACA.



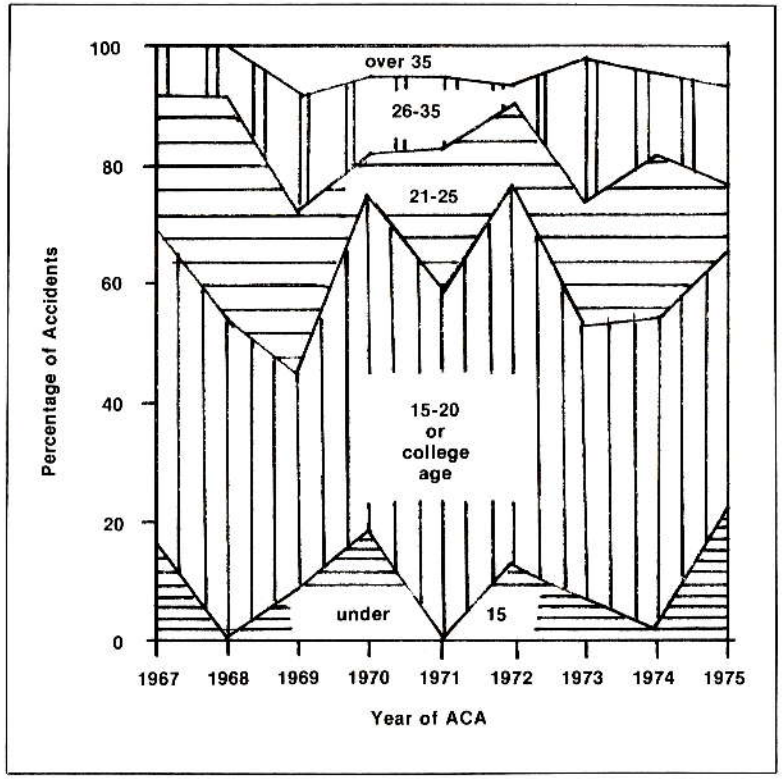
Graph 5. Immediate causes of caving accidents. Falls are by far the major cause of cave accidents.



Graph 6. Contributory causes of caving accidents. Most accidents happen because of inexperience.



Graph 7. Percentage of victims by sex. Men have 88% of the caving accidents.



Graph 8. Age of cave accident victims. Two thirds of all cave accident victims are between the ages of 15 and 25.