AMERICAN CAVING ACCIDENTS 1967-1970

REPORTS OF
THE NATIONAL SPELEOLOGICAL SOCIETY

SPELEOBOOKS PRESS

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INTRODUCTION

This reprint of the 1967 to 1970 issues of **American Caving Accidents** is being produced in order to make more available the lessons learned during that period about safety in cave exploration. It is likely that many readers of this reprint are not themselves 'cavers', but rather are experienced in the mountains or other environments. They will undoubtedly recognize analogous situations and, I regret to say, find the often tragic results not entirely unexpected. But if we are to avoid learning only by our own mistakes, and to learn something from the experiences of others, accident reports and analyses are essential. These were prepared in that spirit.

Published separately, each report had its own Introduction and Summary. These are consolidated in this reprint; probably the best Introduction is a selection from the original publications:

AMERICAN CAVING ACCIDENTS - 1967

"A primary and continuing function of the Safety Committee shall be to assemble and disseminate information on caving accidents in the United States. The project is planned along the lines of the American Alpine Club's excellent report **Accidents in American Mountaineering**, wherein careful descriptions are given of each accident, followed by an analysis as to probable cause and possible prevention of similar occurrences. (NSS NEWS, April 1958).

"That stated goal of over ten years ago has been reached with this first publication of American Caving Accidents - 1967. And, as projected in 1958, we have unabashedly imitated the style and format used by the American Alpine Club. We shall hope that they will accept this as the compliment it is meant to be.

"The purpose of publishing accounts of accidents is, of course, to contribute to the prevention of accidents. By learning more about the situations that lead to accidents, it is possible to identify weaknesses in techniques, equipment and organization, to which attention should be given. Awareness of dangers goes a long way towards surmounting them.

"Accounts of many of the accidents reported here have appeared elsewhere, but it serves a useful purpose to gather them together in a continually available publication. Reports of most major caving accidents appear in the NSS NEWS. Reporting only major accidents, however, gives a distorted picture of the hazards of caving; there are many more minor accidents and incidents, and many of these are very instructive. Eventually, some line will have to be drawn between the trivial and the significant; in this first report, every accident that someone thought important enough to bring to the attention of the Safety Committee has been reported. We fully realize that the reporting of caving accidents has been very irregular and that we have probably received reports on only a fraction of the less-major accidents that have occurred. We hope that having these compilations appear regularly will encourage complete and accurate records of caving accidents.

"Accident locations are identified by State and cave name. The states are arranged geographically, approximately by caving areas from East to West.

"Having already borrowed so much from the American Alpine Club, we have not hesitated to adapt their statistical tabulations to the needs of caving. Only a few changes have been made to make the categories apply more accurately to the caving situation. The tabulation with this report looks empty, but, unfortunately, it will fill with time and better reporting. . . .

"This first venture into presenting an annual accident report is the beginning of our learning process on how to write such reports, assemble meaningful statistical summaries, and interpret information which may serve to make caving a safer but not less enjoyable activity. The reader's comments and suggestions, toward this goal, would be appreciated. . . ."

AMERICAN CAVING ACCIDENTS - 1968

"This, the second in the series of reports on caving accidents, follows closely the approach taken by American Caving Accidents - 1967. Again, all accidents - both major and trivial which are in the files of the NSS Safety Committee for 1968, are reported and analysed. Insufficient time has passed since the appearance of the report of accidents during 1967 to fully evaluate the initial decisions we have made concerning content, analyses and style but it was thought more important, in the interests of caving safety, to make this information available as quickly as possible.

"If, on the basis of the number of accidents reported, it is possible to make a comparison between 1967 and 1968, it would appear that there was a larger proportion of "vertical" accidents during 1968. It is widely recognized that interest in vertical caving has been increasing steadily as better techniques and equipment have been developed, but that all too frequently training and/or experience turn out to be insufficient. This is reflected in the statistics for 1968; indeed, the "typical" accident during that year happened to a young, male, inexperienced caver, not affiliated with any formal caving group, who fell (or had something fall upon him), during the winter months.

"Inexperience is the dominant contributory cause of cave accidents in both 1967 and 1968. It appears that one consequence of the increase in cave exploration activities among individuals associated with groups having considerable experience, is the stimulation of like attempts by persons who don't know what they are doing. While the competent groups cannot be held directly responsible for this, they must nevertheless assume a degree of responsibility for protecting the inexperienced from themselves. It is not just a coincidence that in 1968 the NSS and the Boy Scouts of America jointly adopted a Policy Statement on Cave Exploring for Scouts (NSS NEWS, Vol. 26, No. 12, Dec. 1968, pp 204-206). It is our regret that many young people stimulated to visit a cave by hearsay or friends will not have been exposed to either an experienced group or the Boy Scout policy.

"The division of caving into general, vertical and diving in the Summary has been done under the impression that within the activity of cave exploration there has arisen the two "specialties," both possessing additional hazards. In regard to this, as well as for the whole report, we again indicate our interest in the readers' comments and suggestions for making these reports serve their intended purpose - increased safety, and hence enjoyment, in cave exploration."

AMERICAN CAVING ACCIDENTS - 1969

"This third compilation of caving accidents by the Safety and Techniques Committee of the National Speleological Society brings us up-to-date with the

available information. The reports for 1967, 1968, and now 1969, form the basis, and probably establish assorted precedents for future issues of American Caving Accidents. We hope that our readers have found them informative, sobering and suggestive of steps that might be taken to keep caving both enjoyable and safe.

"As always (we can now say), the majority of accidents happen to "cavers" with little or no caving experience. Obviously training - or even the emulation of experienced individuals - plays an important role in reducing the frequency of accidents. Some of the "incidents" that have occurred, however, still suggest that it is worthwhile for organized caving groups to have well organized training programs.

"The 1967, 1968 and 1969 reports have been prepared and published in rapid succession. There has been little time for receiving and considering comments and suggestions on format and style, and hence these have changed little. We have, however, heard a few responses, both "pro" and "con". Those "pro" simply welcome the appearance of a long needed publication of reports and analyses of caving accidents. Those "con" have felt that the reports have not been detailed enough, or that the analyses have not placed "blame" where it belongs.

"In answer to the first criticism, I would only say that the reports are prepared on the basis of the available information, and I accept responsibility for ordering this into a finished report. It is also fair to say that no report could be detailed enough; ultimately, one would have to relive the experience, which is generally not recommended. The second criticism raises a different question. The analyses are written by individuals who place individual value judgements on the causes and consequences of accidents. I do not think it possible for everyone to agree on the analysis of an accident, nor do I think it desirable. As far as the information is complete, the reader can provide his own analysis - but remember that this probably complements - not replaces - the published analysis. Secondly, unless one considers an accident as planned, there is no such word as "blame"; an accident is the result of inexperience, carelessness, or events beyond one's powers. We certainly regret their occurrence but the message of these reports is that something can be learned from accidents which will reduce their future probability. This is, in fact, the only reason for the existence of **American Caving Accidents**. . .

AMERICAN CAVING ACCIDENTS - 1970

"In reviewing the reports on caving accidents during 1970, no particular trends are apparent, unlike previous years when vertical-caving accidents seemed to dominate. If anything the typical 1970 incident involved inexperienced cavers getting stuck or lost in a cave, or an experienced caver suffering a minor mishap due mostly to poor judgment. . .

"As in previous years, it is felt that reporting of cave accidents is still incomplete. Enough "rumors" of unreported accidents have been heard to suggest that the incidence implied by these reports should be nearly doubled. It is known that one very serious accident during 1970 remains unreported because of private and official embarrassment. While such a response is understandable, it should also be recognized that reporting an accident may prevent another. . . ."

The National Speleological Society is continuing to publish American Caving Accidents. The 1971 issue has appeared and those for 1972 and 1973 are close to publication. As has always been the case, the accuracy of these and future reports

is dependent upon the receipt of information about accidents. Forms for reporting caving accidents are available, free, from the National Speleological Society, Cave Avenue, Huntsville, Alabama 35810.

October, 1974

Rane L. Curl
NSS Safety Committee
Chairman, 1957-1962 and
1967-1970.
NSS President, 1970-1974.

1967 ACCIDENT REPORTS

New York, Church Cave: On 4 September, Ernst Kastning (23), Rodger Smith (22), Frank Vacante (28), Wayne Foote (33) and Thomas Foote (5) visited Church Cave to continue work on a mapping project. At about 1:30 p.m. they reached the Register Room, where Vacante and both Footes waited while Kastning and Smith continued mapping into a narrow passage.

Wayne Foote decided to look for other leads from the room so commenced to climb along the walls. From a ledge 4 feet above the floor, he reached another ledge about 5 feet higher and attempted to "retable." The upper ledge, a slab about 5x2x1 feet, came free and fell "without a sound;" Foote found himself standing on the floor of the room with the slab at his feet. Foote was uninjured except for scratches on his chin and throat, and a bruise on his chest.

The party was unable to move the rock in order to recover two packs upon which it had fallen.

Source: Wayne Foote

Analysis: (Foote) The writer used to hear a saying that a rock falls in a cave once every 10,000 years. Whether this is myth or fact, it is certainly true that in the comparatively short time a caver is under any particular rock it is unlikely to fall. On the other hand, a rock that would not fall by itself for another hundred years might fall on a caver if he put his weight on it. Therefore, potential breakdown in the wall or roof should be treated with due respect, and not touched when there is someone below it.

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New York, Knox Cave: On 7 May, Dale Crim (19), Victor Baker (22), Ernst Kastning (23) and three others, were visiting Knox Cave during a field trip sponsored by the Northeastern Regional Organization of the National Speleological Society. At about 12:30 p.m., Crim entered a narrow passage, when his feet swung free and he was suspended in a standing position, unable to descend farther or climb out. Although he was not wedged in the aperture, companions found him too heavy to lift manually.

Fearing that Crim might suffer from exposure, Kastning left the cave and contacted the State Police for assistance at about 1:20 p.m. Meanwhile, Baker improvised a rope hoist, tied it beneath Crim's shoulders, and pulled him to safety shortly before the State Police and rescue vehicles arrived.

Source: Newspaper clipping

Analysis: The problem was not immediately critical because Crim was not injured. The party probably sought assistance early with the 1965 exposure-death of a caver in a New York cave in mind.

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New York, Knox Cave: On 16 September, Donald Wagner (24) fell between 10 and 15 feet while climbing up the "Great Divide" in Knox Cave, during his first trip to

a wild cave. Hedwig Miller (25), the only other person in the party, had intended to show Wagner the "Alabaster Room."

During Wagner's fall down the fissure, his head struck the walls at least twice; the first impact removed his carbide lamp from his hard hat, dented and marked the upper right side of the hat's shell, detached the plastic rivet connections holding the chinstrap and plastic suspension to the left and front sides of the hat, and finally removed it. The second impact gave Wagner a gash on the upper-right side of his scalp. He was unconscious for a few seconds during and after the fall, and then disoriented momentarily. Because of fear over possible back injury, Wagner was made comfortable and Miller left the cave for assistance.

The Knox Fire Dept. finally responded and, with their assistance, Wagner left the cave. He received seven stitches for the scalp injury and later reported being "foggy" for a month afterward and also requiring treatment for a hematoma developing from back bruises.

Source: Hedwig Miller and Donald Wagner.

Analysis: (Miller) "I should certainly have belayed Wagner up the climb, and should have gotten more people for the trip. The failure of Wagner's fiberglass helmet suggests that cavers using these should switch to something sturdier, or else modify their fiberglass helmets so that the chinstrap is much more securely attached, and fill the space between the shell and suspension with crushable foam."

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Pennsylvania, Carnegie Cave: On Sunday, 9 July, Jerry Kyle (16), Charles Richter (16), and Nancy Vanderlafske (17) visited Carnegie Cave. All were inexperienced, only Kyle having been caving a few times previously.

The entrance to Carnegie is a 36-inch, tar lined drain pipe, 150 feet long, passing under Interstate 81. The three met another group of novice cavers coming out of the cave when they arrived. Someone from this group, whose ages ranged from 15 to 20 years, left two candles burning in the middle of the drain pipe.

The three passed the candles on their way through the conduit without disturbing them, but it is possible that one of the party could have kicked over one or both of the candles upon entering the cave. Approximately 15 minutes later they started to return, and smelled smoke. Upon reaching the conduit the group saw a wall of fire blazing before them in their only avenue of escape from the cave.

Richter became terrorized and started crawling through the pipe into the flames. He continued on and out the conduit despite Kyle and Verderlafske shouting and warning him not to go. A nearby resident saw black smoke pouring from the pipe, and then Richter emerged and fell to the ground, his clothes on fire. The local police and fire departments arrived quickly and Richter was rushed to a hospital.

Meanwhile, the other two retreated as far back into the main part of the cave as possible, to await help. About three hours later, the fire having burned itself out, firemen, and cavers who had been called to the scene, found the two safe and brought them out.

Richter died three days later from second and third degree burns over 59% of his body.

Source: (York Grotto Newsletter, June-July 1967)

Analysis: The accident seems improbable, but there have actually been numerous caving accidents due to fire fed by dumped fuels, escaping acetylene, etc. It is possible that if an older and/or more experienced person had been present, Richter could have been stopped from entering the fire.

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West Virginia, Cass Cave: On 23 November, at 1 p.m., Frank Ahern, Eric Smith, Benny Stone, Bonnie-Jo Grieve, Mary Cole and Pam Riley, all about 20 to 23 years old, entered Cass Cave and rigged from the "belay loft" for the 180 foot descent into the big-room.

By 2:30, Smith and Ahern had rappelled down, with belays, Grieve followed, but her belay and rappell lines twisted, stopping her descent about half-way. She found herself suspended by her belay which constricted her around her chest. Those at the top could not see what had happened; those at the bottom had no means to help; the waterfall in the room prevented voice communications.

Finally, Stone lowered a third rope and descended to give assistance. He found Grieve too exhausted to help herself so asked those at the top to find help. He struggled with the problem for an hour or two, became exhausted, and prusikked to the bottom. Smith then ascended, freed Grieve's belay line, and prusikked in tandem with her for a couple of hours. Eventually, the ropes became too snarled for further progress. After five hours hanging on rope, Grieve was lowered to the bottom by rappel (brake bar) controlled from below.

Smith ascended and found Aage Sandqvist, Mike Balister and John Payne had arrived from Green Bank, where Riley had sought help. Cole descended with comfortable slings for Grieve; Ahern and Stone ascended to provide man-power at the top, and Grieve was pulled out. A ladder provided by the rescuers was used by the others.

Source: Benny Stone (Cornell Univ. Student Grotto Newsletter); Mike Balister and John Payne.

Analysis: (Balister) None of the women in this party had had sufficient vertical caving experience--they had only been caving two or three times. Deep pits should not be attempted by inexperienced people. This party, if they had had any sense, would have tried an easier cave.

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West Virginia, Overholt Blowing Cave: At about 3 p.m. on Saturday, 25 February, Ralph Bucca (20) and Jon Lock (19) commenced an exploration in Overholt Blowing Cave. In mid winter the water temperature is very low; the outside temperature was 6 degrees below freezing. The pair wore slacks and long-sleeved shirts with Air Force exposure suits over them. Over these suits they had an additional pair of slacks and a jacket. They wore hard hats and had adequate primary and back-up lighting. Mr. McKeever, the cave's owner, had advised them not to go due to high water and cold, but did not forbid them entry.

At the Dardanelles (some 3300 feet in), a low stream crawl about 500 feet long, Bucca's exposure suit began to take water, either due to looseness or rips. The pair proceeded to the Mountain Room and about 1000 feet beyond, when Bucca began to feel the effects of the cold water; numb hands and feet. They commenced

to leave. At the Dardanelles, Lock also got wet for the same reasons as Bucca. As their progress toward the entrance continued, the cold took a firmer grip upon Bucca.

In Lydia's Lake he stumbled and fell many times. Lock gave continual encouragement to Bucca, who was now "completely numb and stiff;" he crawled the last 1000 feet to the entrance with much difficulty. This was at 11-12 p.m. Lock partly carried and dragged Bucca to a shed where he changed their clothes and cooked some soup. Bucca, however, remained unconscious. Lock then sought out the assistance of Mr. McKeever and together they carried Bucca to the house.

Lock and McKeever revived Bucca, but in a state of delirium he burned himself upon the hot stove. Finally, about two hours after entering the house, he recovered sufficiently to talk about the incident.

Source: Ralph Bucca, G. Dallas McKeever.

Analysis: Bucca could not have been more than minutes away from death by hypothermia.

(Bucca) "Overholt is an exhausting cave under ideal conditions. The combination of extremely cold weather and the failure of the suits to keep dry defeated us more than anything else. I suggest a tougher suit with a different neck enclosure would make the difference between comfortable caving and needless exposure in a cave such as this."

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Virginia, Breathing Cave: On 28 May, at about 12:30 p.m., a party of six cavers, Phil Gettel (25), Lee Gettel (23), Jim Young (17), Joe Chiara (15), Dale Ibberson (20) and Jay Herbein (33), entered Breathing Cave for a planned trip through the New Section to the waterfall. All but two of the party had been in the cave several times before. They proceeded slowly, exploring side passages, and reached the Cathedral Passage shortly before 2 p.m.

The Cathedral Passage is a canyon 300 feet long, with a high ceiling. There are two routes: the lower route, usually involving crawling and wet passages, is most frequently used; the upper route involves "canyon hopping" and some chimneying as several connections to the lower levels, about 50 feet below are crossed. The party chose the upper route.

The party began crossing the canyon past the "splattermite" climb. Four persons had already reached the end when Chiara started across. He was straddling the canyon, using ledges on both sides for footholds, when he apparently lost his footing and fell 50 feet to the lower level. The only sound he made was a brief "uh," at which Ibberson saw him falling. No one saw the cause of the fall. The time was 2:00 p.m.

Young and Phil and Lee Gettel descended to Chiara and determined that he was badly injured. Herbein started for the surface for assistance while the others tried to make Chiara comfortable. Herbein, after asking cavers from another part at the surface to contact the Potomac Speleological Club fieldhouse, and the Cave Rescue Communications Network, returned with a rope, a blanket and a plastic sheet.

Chiara's breathing became fainter and fainter until, at 4:15 p.m., no chest movement or heart beat could be heard or felt. Artificial respiration efforts had no apparent effect. Lee Gettel and Ibberson had left the cave earlier. Some time after Chiara's apparent death the others left too, only Young remaining to direct the subsequent rescue parties.

Rescue groups started arriving shortly after 5 p.m. The recovery started at 7:30 p.m., and was completed by 11:45 p.m.

The Bath County Coroner stated that death resulted from concussion, plus a possible broken neck and internal injuries. There were extensive other injuries, including cuts, fractured wrist and dislocated leg.

Source: Phil and Lee Gettel, Jay Herbein, Dale Ibberson and Jim Young (York Grotto Newsletter, April-May 1967).

Analysis: (Bob Thrun) "The MSA Comfo Cap provided no head protection, even though the chinstrap held it on. The nature of the injuries were such that the boy would have died even with better head protection. Others wearing similar hard hats should be aware that they function mainly as a lamp carrier, rather than as a head protector.

"Are we overestimating our novices? We should always watch and guard our companions, especially if they are much less experienced than we are. Many are unsure and shaky when they encounter a tough cave or a tricky climb for the first time. Chiara was neither skilled nor experienced. Most parties going through Breathing Cave take a route along the floor in the passage where he fell."

"Are we underestimating our caves? Breathing is considered fairly easy and many take novices to it. There are some who delight in taking novices through caves that are considered much more difficult. The boy was twenty minutes into the cave; it took over four hours to carry the body out, and it was handled roughly in the process. Carrying a live person out gently would have been almost impossible. It might have been necessary to set up a hospital room in the cave. This is a cave that is considered **easy**! (The Potomac Caver, June 1967).

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Virginia, Staunton Quarry Cave: On 26 July, blasting with dynamite at the Valley Stone Quarry near Staunton broke into a cave passage that was previously unknown. On Saturday, 29 July - three days later - a group of four quarry employees entered the cave, shortly after 7:30 p.m. They were Charles Vaught (28), John Miller (18), Johnny Branner (24), and David Price (21).

The four men, carrying ropes and flashlights, had gone about 70 feet into the cave when they noticed the air becoming "foul." They began breathing faster and decided to leave. Branner and Price made it back to the entrance but Vaught and Miller were overcome by fumes. Rescue operations were initiated.

One member of the Staunton Rescue Squad, Melville Fitzgerald (49) who reached the scene quickly, attempted to enter the cave. He reached the room where the victims were lying and reported that one was still breathing, but was himself nearly overcome, escaping very narrowly.

The cave was ventilated artificially and, at about 10 p.m., the bodies of Vaught and Miller were removed.

Source: Newspaper clipping.

Analysis: Dangerous gases - most likely including carbon monoxide - were left in the cave by the blast, and natural ventilation had not removed them in three days. The quarry supervisor stated that he had warned the men about this.

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Florida, Jenny Spring: On 20 December, John Alston (18), Pete Mitchell (21), Richard Ross (18), and Al Moody (22) went skin diving in Jenny Spring near Trenton, Florida.

Their bodies, except that of Moody, were found late that day 400 feet back from the entrance at a depth of about 70 feet.

Source: Newspaper clipping.

Analysis: It is not known what went wrong. Cave diving remains one of the most hazardous sports.

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Florida (Caves): On 9 March Bobby Biel (12) and Allan Mathis (11) were badly burned while exploring some caves in a field near North Miami Beach. Gasoline fumes in one of the caves ignited when the youngsters struck a match to look inside.

Source: Newspaper clipping.

Analysis: The nature of these "caves" is not known, but clearly poor judgment caused the injuries.

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Georgia (Caves): On 20 August, three brothers, Larry (16), Ronnie (14) and Kenny Lunsford (10), set out to explore a cave near Ringgold, Ga. They carried a kerosene lantern but left their matches at the entrance.

Their absence was noted by their parents at 5 p.m. that day and, shortly before midnight, the three were rescued by searchers about half a mile inside the cave.

Source: Newspaper clipping.

Analysis: Inexperience, and improper equipment.

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Indiana, Freeman Pit: On 29 October, Robert Rogers, Phil Chupp, Don Paquette, Mike Bledsoe and Richard Wood descended Freeman Pit at about 8 a.m. All were experienced and were using nylon rope, nylon webbing slings, and proper headgear. There are no passages at the bottom of the pit.

Rogers ascended first. About halfway up (50 feet) he dislodged some loose material - probably mostly earth - which struck Chupp on the head, Chupp was not wearing his hard hat.

Rogers completed his ascent, and Chupp and the others followed without incident. Subsequently, Chupp was taken to the hospital and seven stitches were required for scalp injuries.

Source: R. Blenz (Windy City Speleonews, Vol. 7, No. 6, Dec. 1967).

Analysis: If those at the bottom could not get away from the base of the pit, the danger of falling materials was inescapable. It is then obvious that Chupp should not have removed his hard hat.

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Indiana, Ginger Pit: On 29 October, at about 2 p.m., Mike Bledsoe, Mark Murphy, and Richard Wood descended Ginger Pit (36 feet deep) using a handline, which is sufficient in this cave. There are no passages at the bottom.

Ascent was aided with Jumars. The first man up, dislodged a large rock at the edge of the pit which fell and struck Bledsoe on the head. He was wearing a hard hat. The rock punctured his hat and cut his head, but he was able to ascend without assistance.

Source: Richard Blenz (loc. cit.).

Analysis: (Blenz) Bledsoe would undoubtedly have been killed without his helmet as the heavy rock fell directly onto his head. (See previous report).

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Indiana, Wayne Cave: On 3 November Melvin Hunsucker (21), Jerry Long (20) and Max Miller (18) entered Wayne Cave at about 6:30 p.m. At about 1 a.m., 4 November, Hunsucker became caught by loose rock in a small passageway. Unable to free him, Long went for help while Miller stayed with Hunsucker. Richard Powell was contacted in Bloomington and he called out a rescue group. The rescue party met Miller and Hunsucker coming out at about 3:40 a.m., Miller having been able to free Hunsucker at about 2:30 a.m.

Source: Richard Powell

Analysis: Although no injuries resulted, it was probably wise for the party to have contacted a rescue group.

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Iowa, Level Crevice Cave: On 5 March, David Barbian (23) and 8 male companions from Loras College attempted to enter Level Crevice Cave by means of its only entrance, a 90 foot mine shaft. At about 2:30 p.m., they lowered into the shaft a 75 foot nylon rope tied to a 50 foot sisal rope, both 3/8 inch. Barbian started to descend hand-over-hand, bracing his feet on the sides as best he could. He had descended between ten and twenty feet when he lost his hold and fell the remaining distance to the bottom of the shaft.

Barbian was rescued by the Dubuque Fire Dept. He suffered abrasions and concussions to the head and face, a broken femur and other injuries.

Source: John Johnson

Analysis: All members of the party were inexperienced and had no knowledge of the equipment required for such a descent.

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Missouri (Caves?): On 10 May, Craig Dowell (14) and two brothers, Billy (10) and Joey Hoag (13) were reported to have been seen about 4:30 p.m. carrying a shovel and a flashlight in the vicinity of a cave recently uncovered by construction workers. They were never seen again. A massive search of all caves in the area, by experienced cave explorers, under the direction of William Karras, turned up no trace of the missing boys.

Source: Newspaper clippings.

Analysis: The concensus is that, with a high probability, the three boys were lost in a cave - but could not be found despite the effort expended. If true, this stands as unique in cave rescue efforts, but not at all unusual in the annals of mountaineering accidents.

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Missouri, Shower Pit: On 9 July, a group of twelve cavers rigged the entrance to Shower Pit with a rappel rope, belay rope and a cable ladder. Chuck Curran, Chuck Murray, and Chuck Blumentritt had rappelled in and Curran and Murray had climbed out, when Ann Shallert, belayed by Curran, commenced her rappel, and fell.

Apparently, the cause of the fall was a small amount of slack in the rappel line at the start of the descent. Schallert moved down about two feet on footholds with little weight supported by the rappel line. At the actual pit edge, she leaned backwards into rappel position but the slack, plus the stretch in the nylon rope, allowed her to swing too far backwards and down, necessitating her being caught by her belayer.

As she fell, her last foothold caught her foot and held it, causing a badly sprained ankle.

Source: Robert Clark (SLUG Newsletter)

Analysis: (Clark) Had she not been belayed, she could easily have fallen the full fifty feet.

The injury was rather fortuitous, but even a small amount of slack in a rappel line can be dangerous. Slack, rope elasticity and belayer resiliency make the "first step" a long one. In addition, too much reliance on "footholds" in a rappel can lead not only to such an accident as this, but also makes the descent uneven, and increases the likelihood of dislodging rocks upon those below.

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Missouri, Potter's Cave: On 22 January, Terry Kaufman (15) and Margaret Reese (16) entered Potter's Cave with five others of about the same age. After some exploration, the five left the cave, believing that Kaufman and Reese had already left.

About 19 hours later, the two were brought out of the cave by police and deputy sheriffs. Kaufman told rescuers that the candle they carried was accidentally extinguished and that they had no matches.

Source: Tom Schriever

Analysis: The pair were obviously ill equipped, at least in regard to having proper illumination.

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Oklahoma (Cave): On 15 January, while exploring with three friends, Lyndal Rozelle (16) broke his leg by jumping from a tunnel, 15 feet to a room below.

His friends called a rescue group, who splinted Rozelle's leg and lifted him from the room in a harness. However, he had to crawl 350 yards unassisted because of the smallness of the passage to the entrance.

Source: Tom Schriever

Analysis: Rozelle exercised poor judgment. Jumping is always hazardous, and more so when relatively isolated from assistance.

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New Mexico, Vanishing River Cave: On 4 September, a speleological study party of four, Richard Breisch, Douglas Evans, Ellsworth Rolfs, and Loren Bolinger all highly experienced vertical cavers, found and entered Vanishing River Cave on the second day of an expedition into the Guadalupe Mountains. The party had inspected a 40 foot pit the previous day, their first day out.

At Vanishing River Cave the party rigged the pit entrance and descended to the bottom - 350 feet below the surface. They then ascended to a first level about 100 feet below the surface. Evans then ascended to the surface with prusik knots. He apparently cleared the entrance and announced that the weather was getting bad and rain was starting. Bolinger started to coil 600 feet of rope from below, while Breisch and Rolfs, 25 feet below, assisted, when falling debris was heard and Bolinger saw Evans falling from the entrance.

Evans landed on the 100 foot level. Rolfs, a Red Cross First Aid Instructor, attended to Evans while Breisch ascended to the surface, threw down some clothing for the injured man, and went for help. Evans had deep lacerations on the side and back of the head, and he complained of severe back and pelvis pain. His helmet lining had separated from the plastic shell, which was poorly designed for caving use.

After giving what assistance he could, Bolinger ascended to the surface to set a signal fire. At 6:30 p.m., 1½ hours after the accident, Evans stopped breathing and Rolfs started artificial respiration. A few minutes later Evans' heart stopped and Rolfs commenced closed-chest heart massage. After one hour, without response, Rolfs stopped his effort (7:25 p.m.). At 8:40 p.m., Rolfs ascended to the surface because rain was threatening and the cave was in danger of being flooded.

Because of the isolated location, the recovery operation was protracted. At 8:45 a.m. (5 September) Breisch returned with the rescue party. At 11:45 a.m., Evans' body had been raised to the surface. It was not until midnight that day that the group reached a roadhead.

(While ascending, one of Bolinger's sling ropes broke at about 30 feet from the surface. He was able to re-rig and complete his ascent).

Source: Loren Bolinger (Windy City Speleonews, Vol. 7, No. 5, October 1967).

Analysis: (Bolinger) "Our personal conclusion about the accident is that a combination of wet rock, leaves, and moss, the steep angle of the funnel surrounding the entrance, and the lack of a safety line after the prusiks were removed from the main line were contributing factors in Evans' fall."

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1968 ACCIDENT REPORTS

New York, McFail's Cave: On 16 March at about 10:00 a.m., Gerald Alderman (20), Ronald Soren (23), Andrew Smith (19) and Michael Geilman (20) entered the Ack's Shack entrance to McFail's Cave. This consists of a sinkhole (fenced, and posted against tresspassing) with a man-sized hole in the bottom which opens into a 8x15 foot pit 45 feet deep. At the bottom a fissure opens out into a second pit 40 feet deep but only 2 feet wide in the center, narrowing to one foot or less at each end. A crawlway out of a small room at the bottom connects to the main passages. In wet weather a stream enters the pit as a waterfall about 10 feet below the top and flows through a crawlway at the base of the second drop. On this date there was still considerable snow and ice on the ground, but the temperature was above freezing during the day.

The group did not explore far into the cave as they started out at about 1:30 p.m. They found that the volume of the waterfall in the upper pit had increased and the wet, cold and constricted lower pit gave them considerable trouble. Finally Soren reached the surface and went for aid to a nearby farm. The Carlisle Fire Department was telephoned at about 3:30 p.m. and were joined at the cave by firemen from Cobleskill and Central Bridge and state police from Duanesburg.

A fireman was lowered into the upper pit and assisted Smith and Geilman to the surface. Soren went down to tie a rope to Alderman, who was now alone in the lower pit, hollering to be pulled out. Soren came back saying that he had passed the rope to Alderman, but wasn't sure whether he had tied it on or not. Soren, Geilman and Smith were taken to the Cobleskill Community Hospital and admitted in "satisfactory" condition.

The firemen pulled on the rope **possibly** tied to Alderman until it became taut. They then tied it to a tree. A fireman went into the pit again and tried, unsuccessfully, to squeeze into the lower pit. He could see Alderman below him on the rope, which had pulled him into the narrow part of the lower pit. His hard hat had tipped forward and water was dripping onto his face. Alderman's responses were weaker. The time was about 4:00 p.m. The fireman was hauled out exhausted and a smaller person was sought to descend to Alderman. An attempt to reduce the flow of water in the upper pit, by piling logs, shoveling snow and some bull-dozing had no apparent effect.

At about 5:00 p.m., a local boy, Teddy Langenbahn (17), volunteered to go down, was put into a wet-suit, and lowered into the cave. He found himself dangling in the waterfall and asked to be pulled up. After warming near a fire on the surface, he agreed to try again. This time he was lowered to the bottom of the first pit, saw Alderman, and tried to pull the rope away from the crack, without success. He called for slack, and Alderman immediately dropped downward; he called for the rope to be pulled up, and Alderman moved up into the crack again. Langenbahn returned to the surface and Steve Coon (16) was lowered in, also in the wet-suit. Coon dropped quickly below Alderman, who was now white and stiff, pushed his body out from the crack, and guided it to the surface as he was himself pulled up. It was 6:10 p.m. Alderman was examined immediately by a doctor, who estimated that he had died 1½ to 2 hours previously. A coroner's examination confirmed that death was due to exposure.

Source: Wayne Foote and Alan Myers

Analysis: None of the four had any known association with experienced cavers or cave groups. How much their inexperience contributed to the consequence is hard

to say, but clearly they had attempted a descent and ascent which was beyond their abilities, especially under winter conditions. Experienced cavers have recently had the extreme dangers of exposure (hypothermia) brought to their attention by several accidents, and would probably have acted specifically against this threat under the circumstances.

For reasons unknown, the Northeastern Regional Cave Rescue Organization was not contacted, although they are listed with the State Police. Through a circuitous route the State Police did finally, but too late, reach some experienced cavers.

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Pennsylvania, Wind (Cold) Cave: On 21 October a party of eight, including Robert Preyer (23) and Ted Lenz and David Voegeli (both about 19) visited Wind Cave, which is unusual for being developed in schist as the result of slumping. They entered the cave at about 10:00 a.m.

At about 11:00 a.m., Preyer, attempting to squeeze through a narrow passage to the rear of the south passage, became stuck with Lenz and Voegeli on the far side and could not release himself. A rescue squad was called for aid and tools. He was released with the use of hammer and chisel.

Source: Robert Preyer

Analysis: A minor incident, but one which could have been serious deeper within a difficult cave. Preyer attributes the situation to "overweight and overconfidence."

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West Virginia, Cass Cave: On 16 March a group of 8 people associated with the Explorer's Club of Pittsburgh entered Cass Cave at about 2:30 p.m. They were David Walsh (20), the trip leader, Rita Ernst (21), Phyllis Gable (21), Mike Adams (19), Norm Snyder, Sandi Zubritzky (20), Ray Enyeart (23) and Denny Callihan (22). All the group had some climbing experience; five had been in caves previously.

The 200 foot drop into the big-room was rigged with a cable ladder and belay. Two members of the party remained above while the other six rappelled down in front of the waterfall that drops into the room. Due to recent rains, the streams and waterfall in the cave were moderately high, causing everyone to be soaked by the time they reached bottom.

The events of the next 12 hours are confused. The six that had descended did some exploration and finally returned to the ladder. One person ascended on belay in about a half-hour; a belayer descended, and then he and three others ascended in times ranging from one to two hours. Difficulties were experienced with signalling (whistles were used); exposure (the spray from the fall drenched and chilled everyone); entanglement of the ladder and the belay rope; and fatigue. Finally, at 2:30 a.m. (17 March) only Enyeart and Snyder remained at the bottom. The ladder and rope were pulled up to disentangle them.

The two at the bottom checked now and then, until 6:00 a.m., for the ladder and rope, and finally moved away from the falls and got some sleep. Snyder also spent some 3 hours exploring while Enyeart tried to sleep. At 11:30 a.m., the ladder and rope were lowered. Enyeart tied in to the belay line and proceeded to climb. Despite signals given by Snyder, the belay line remained slack. Enyeart noticed this when he was 15 to 20 feet from the floor, started back down, slipped and fell.

Enyeart attempted again to climb, receiving tension on this time, but was unable to proceed. Inspection showed a bad bump on his knee and it was decided that he would have to be pulled out. Snyder tied into the belay and ascended, planning to arrange the necessary rescue.

Meanwhile, after the ladder and rope had tangled and been pulled up, those on top decided that help was necessary. The three girls left the cave and contacted John Payne and Mike Balister from the National Radio Astronomy Observatory. Snyder found them there when he reached the top of the ladder. Payne and Balister, not having block and tackle available, suggested that the Cave Rescue Communications Network be called. Either Payne or Balister descended to keep Enyeart company, while everyone else left the cave for assistance leaving one of the Pittsburgh group at the belay point. A rubber bag containing a sleeping bag, stove, food, and a "walkie-talkie" were lowered but were never received, as it tangled with the ladder.

The CRCN was contacted at 4:15 p.m., arrived at the cave at 8:00 p.m., removed the tangled rigging, and Tom Vigour rappelled in with food, extra clothing and the harness. All three were pulled up without incident and all were out of the cave by 1:00 a.m. Monday morning (18 March).

Source: Ed Bauer, Rita Ernst, Norman Snyder (NETHERWORLD NEWS, April 1968).

Analysis: (Bauer) My analysis of the situation is that the leader of the Pittsburgh Explorers trip, Dave Walsh, used extremely poor judgement in bringing his group into Cass Cave. Many were inexperienced in such a difficult cave as Cass. Regardless of the experience, an attempt at the drop under such wet circumstances appears very foolhardy. The point of original rigging indicated the leader's unfamiliarity with the cave, and was probably greatly responsible for much of the difficulty.

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West Virginia, Elkhorn Mountain Cave: On 16 March seven cavers from the George Washington Student Grotto (NSS) descended the 140 foot entrance pit of Elkhorn, using brake-bars on 7/16 inch Goldline. At about 4:00 p.m., Warren Bogardus (25), George Rabchevsky (30) and Warren Broughton (21) met at the rope to ascend. Bogardus was up in 30 minutes using two Jumar ascenders. Rabchevsky followed, but could not get over the first ledge, about ten feet up. He decided to descend but could release only one ascender from the rope. Finally, he got into body-rappel, cut the sling to the stuck ascender, and descended.

Broughton then ascended using a Jumar for a seat sling and a prusik knot for his feet. He reached the top in 35 minutes. Meanwhile, Michael Tepping (23) had hurt his knee when he slipped while jumping a stream in the lower cave passages. It became evident to the group that both Rabchevsky and Tepping would have to be pulled to the surface.

Paul Broughton (23) next followed his brother Warren to the surface using a two-point prusik system. About half way up, the lower polyethylene prusik snapped, but he safely switched to a spare manila set. The time was now 6:30 p.m., it was cold and raining, and the three on the surface were soaked and shivering.

Rabchevsky was secured to the rope, along with the end of another 150 foot Goldline to be used to pull the main rope down again. The three on the surface tried to pull Rabchevsky up, but the rope caught in a crevice. Another attempt to pull Leonard LeRoy (20) out (he being much lighter) was also unsuccessful. It was

decided to go for help.

Bogardus and Warren Broughton drove to a telephone and called the Petersburg fire department. By 9:30 p.m., about ten volunteers were at the cave. One of those in the cave had attempted to ascend using Bachmann knots, but this had failed. It was decided to simply pull the four to the surface. Warren Broughton rapelled in half way to provide communications and guide the rope. Connie Wong (20) was pulled out, then various packs, followed by Tepping and LeRoy. Broughton was pulled to the surface on the end of the lower rope. By midnight, everybody was out of the cave.

Source: Warren Broughton

Analysis: (Warren Broughton) Where was the problem? Michael obviously needed to be pulled out. The others lacked adequate training and the cave proved too much for their limited exposure to vertical caving. Because of this, the Grotto will institute training and testing sessions involving various problems which may be encountered in caving. These sessions will be mandatory for those who want to do vertical caves.

The Grotto was fortunate that no one was seriously hurt and the trip can best be considered as a learning experience for each of us.

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Indiana, Coon's Cave: On 8 December a party of two experienced cavers, Gene Jurgonski (35) and Larry Reece (25), and six novices, Mark Armstrong (16), Russ Anderson (17), Roger Gillies (17), Jim Roach (15), Paul Blum (16) and Pat Moore (17), visited Coon's Cave. They entered at 10:30 a.m. and at 11:00 a.m. were descending a breakdown slope; Jurgonski had descended a 10 foot chimney at the base of the slope and was in the lower passage, Blum was working his way down the chimney, and the remainder were on the slope when a block weighing about 20 pounds was dislodged and rolled toward the chimney.

Gillies attempted to stop the rock but only slowed it. A warning was shouted to Blum, who jumped aside as the rock fell, grazing his back as it passed. The trip continued but it was discovered on the following day that Gillies had broken his finger.

Source: Larry Reece

Analysis: (Reece) The experienced cavers should probably have given closer supervision to the others. In addition, the group was too large, causing persons to be crowded too closely together in an area of unstable rocks.

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Indiana, Freeman's Pit: On 30 November, William Shaw (20) and Jay Arnold (23) free-rapelled the 97 foot Freeman's Pit. Arnold, an experienced caver, had his own prusik slings (polypropylene) for ascending, but had borrowed a manila set for Shaw. This was Shaw's second pit descent. Freeman's Pit has no passages, so they soon prepared to ascend.

With assistance from Arnold, Shaw tied in with the manila slings, ascended ten feet, found he was being choked by his chest sling, descended, and adjusted his sling. At this point it was decided that Arnold should ascend first with Shaw following. Arnold started up and Shaw followed about 20 feet below. At 50 feet,

Shaw found his knots slipping on the clean, dry Goldline rope and, on advice from Arnold, attempted to double his knots. He began to have difficulty with the chest sling which was restricting circulation in his arms and, becoming desperate, loosened his knots and started to descend nearly in free-fall. His chest knot grabbed when he was about five feet from the floor. "Half in a state of shock, after fumbling for what seemed like hours, I untied myself and fell from the rope. I got up and staggered into the corner and collapsed." (Shaw)

Arnold descended and, after Shaw had rested and indicated his willingness to try again, Arnold tied in with the manila knots, but was unable to climb above ten feet due to their slipping. He again descended and sent Shaw up using the polypropylene knots. Shaw reached the surface in 20 minutes without serious difficulty, lowered the slings to Arnold, who also ascended easily.

Source: William Shaw and Jay Arnold

Analysis: (Arnold) I should have been suspect of the poor condition of the manila slings I had borrowed for Bill's use. I have not used manila slings in several years, precisely because of bad incidents involving old, swollen and limp slings. I borrowed these because I felt that we should both be independently equipped. Proper equipment could have averted the incident, a common story in most cave rescues.

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Indiana, Gory Hole: On 17 November Charles Steele (20), James Hauser (20), Ted Petranoff (19), Robert Flume (19) and Barry McCabe (20), members of the Indiana University Spelunking Club, rapelled into Gory Hole, a 148 foot pit, at about 2:00 p.m. After some exploration and photography at the bottom, they proceeded to leave the pit at 5:45 p.m. Hauser, Petranoff, McCabe and Flume ascended by prusiking. While untying at the surface, Flume dislodged a rock weighing about one pound which fell into the pit and struck Steele near the back of his hard hat. This occurred at 7:15 p.m.

Steele was knocked momentarily unconscious but soon called for help. Hauser descended at 7:30 p.m. and found Steele bleeding badly from a head wound. Hauser stayed with Steele and administered first aid while Petranoff went for assistance.

At 8:15 p.m. Petranoff telephoned Richard Powell in Bloomington, and then went to secure bandages, returning to the cave at 8:45 p.m. Powell notified the Indiana State Police, requesting a patrol car at the scene; then phoned John Bassett and Richard Blenz for further assistance. Bassett picked up Ted Wilson and Powell, while Blenz contacted Don Carty; both groups headed for the cave with ropes, field telephones and personal equipment, arriving, along with Trooper George Abbott, at about 9:00 p.m.

By 10:30 p.m. the telephone was in use and the pit had been rigged with a hauling line over a block fixed above the pit. Steele was tied into his swiss-seat and a chest harness together with a second safety line. He was pulled to the surface at 10:45 p.m., being able to give some assistance himself when the ropes became slightly twisted. Steele was taken to the hospital at Bedford while the rescuers cleared and left the pit by 1:45 a.m.

Steele required several stitches on two lacerations adjacent to the occipital foramen. X-rays showed a chipped skull.

Source: Richard Powell and Charles Steele

Analysis: (Powell) Steele should not have been at the direct bottom of the pit while Flume was climbing or resting (unrigging) at the top. Steele could have been killed by the falling rock. He was saved mostly by his hard hat. The back of the hat was punctured with a hole about one-half inch in diameter, with shattered prongs of fiber-glass radiating from the hole. The fact that Flume yelled "rock" may have helped prepare Steele for the blow in that he apparently was hunched up, perhaps preventing a broken neck.

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Indiana, Shaft Cave: On 8 December, Ron Plew (19) and Steve Kontos (19) entered Shaft Cave using a homemade rope ladder constructed from wood rungs tied to ½ inch manila rope. They lowered another manila rope to use as a handline but it had tangled with the ladder and had been dropped into the pit.

Kontos had difficulty while descending because the ladder was twisted around itself. Plew also encountered difficulty and Kontos climbed part way to assist him. They finally both got safely to the bottom but a third companion declined to follow.

After resting at the bottom, they both attempted to ascend but were defeated by the twisted section of ladder. At this point, by coincidence, a group from the Central Indiana Grotto (NSS) arrived at the cave. Larry Reece having had the most vertical experience, rappelled into the pit to assess the situation. An attempt to have Plew climb the ladder on belay failed so the ladder was removed from the pit.

Reece then gave Kontos instructions on using Jumar ascenders and started him up the rope, following on prusiks in case he encountered difficulties. This worked easily so Reece descended and sent Plew up in the same fashion.

Source: Larry Reece

Analysis: (Reece) The rescue was necessary because the people involved did not know what they were doing. They overestimated their ability, possibly because they had not been associated with any formal caving organization. These are the type of people who make the newspapers and give caving a bad name. The only way to prevent this type of incident is to reach these people and train them before they have a chance to get into trouble.

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Indiana, Shaft Cave: On 28 December Chad Hall (16?), a member of Explorer Scout Post 288, attempted to enter Shaft Cave, a 74 foot pit, hand-over-hand on a 3/8 inch knotted rope. At 3:10 p.m. he lost his hold and fell an unknown distance.

He was rescued by members of the Bloomington Grotto of the National Speleological Society and was out of the cave by 6:15 p.m. He suffered fractured spine, jaw and ankle, as well as concussion and lacerations.

Source: Tom Rea

Analysis: (Rea) This accident was caused by bad judgement on the part of the boy and the Scout leader. Anyone who has ever tried to climb a rope knows it is impossible to climb 74 feet on a thin rope, even with knots.

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Missouri, Indian Cave: On 24 March three soldiers from Fort Leonard Wood, PFC. Stephen Lasky (20), PFC David Box (20) and SP4 Alfred Purswell (21) signed out to go caving. None had had previous caving experience or training. When they became overdue (near noon) the Army instituted a search and found their borrowed car parked near Indian Cave. A tentative search by Army personnel found some of the men's clothing in the cave, but did not find the men.

The Provost Marshall's Office at Fort Leonard Wood contacted Jerry Vineyard of the Missouri Geological Survey, who in turn contacted members of the Missouri School of Mines Spelunkers Club. The first call was received at 1:15 p.m. 25 March. A rescue party of seven arrived at the cave at 2:45 p.m. Nick Tibbs had been appointed the rescue group leader. Lt. Williams in charge of Army operations at the cave, gave the rescue group full control of all operations in the cave.

The search party entered the cave at 3:00 p.m., divided into two groups to search various leads, and met again in a small room where a scarf had been found. One group then left the cave to request further assistance, while the other pushed into a low crawl. This was at 6:30 p.m. The three soldiers were found, unhurt, in a large passage beyond the low crawl. Rescuers and rescued were out of the cave by 8:25 p.m.

Source: MSM SPELUNKERS, Vol. 11, No. 2, 1968, pp 19-24.

Analysis: A typical search and rescue operation. The lost men had, fortunately, not got into any serious difficulty and still had some light left in their flashlights.

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Texas, Dead Deer Cave: On 10 January at 4:30 p.m. five boys, all inexperienced and not affiliated with any caving club, entered Dead Deer Cave. Permission from the owner had not been obtained nor was anyone told of their plans.

Dead Deer is a pit cave, the first 30 feet of which is easily climbed. At the 30 foot level is a large, extremely muddy room beyond which climbing equipment is necessary. All five boys descended to this room. Three of them, Steve Cartwright (16), Mike Bowman (17) and Tommy Nairn (16) slid or climbed hand-over-hand down a manila rope to a ledge 35 feet below. The other two, Larry Gaskin (16) and Tommy Rohrbach remained above. Below the ledge the wall can be climbed without equipment to get into a large room.

After some exploration the boys attempted to climb the rope but found it too slick with mud. The two above also attempted to pull one of the boys out; again, the rope was too slick. At 7:30 p.m., Gaskin left the cave for help; Rohrbach stayed to keep the three trapped boys company. The Sheriff's department was notified at 8:15 p.m., who in turn notified a Civil Defense unit, who notified Alamo Grotto (NSS) at 8:30 p.m.

The rescue group rigged a rope and three cable ladders. Butch Summar descended to instruct the boys in ladder climbing; Dick White and Courtney Pennington remained at the top to belay and assist. Everyone was out of the cave by 11:15 p.m.

Source: Luther Bundrant

Analysis: The boys were trapped because of bad judgement due to inexperience. This has happened before in the same cave, and will probably happen again because the cave is so close to San Antonio.

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Arizona, Onyx Cave: On 4 October Truman Kellam (21) led three companions, Robert Pfister, Philip Shoff and Mathew Scoble (all about 20) on an exploration into Onyx Cave. All were inexperienced; this was the first cave trip for Pfister, the second for Shoff, and Scoble had been in Onyx only a few times previously. Kellam had been caving for one year, but not with any organized group. All wore hard hats with carbide lamps and they carried 100 feet of new 5/8 inch hemp rope.

They entered the cave at about 5:30 p.m., crossed the 15 foot deep "Gorge" and continued to the left around the "Loop". Scoble and Kellam went down a small crawlway that came out in the side of a 150 foot shaft know as the "Hell Hole". Wall-writing indicated it to be 300 feet deep, but Kellam took this to be exaggerated and concluded that it was only about 30 feet.

The rope was knotted every three feet and tied in. Kellam backed over the edge of the pit, using the rope for a hand-hold. Only a few feet below the edge he could find no foot-holds, tried to climb up again, lost his hold and fell 150 feet to the bottom. This was at about 8:45 p.m. After determining that Kellam was still alive the other three left the cave for help.

The Santa Cruz County Sheriff was notified, who in turn called Sgt. Ted Brandes, Head of the Pima County Sheriff's Department Volunteer Search and Rescue Team. Brandes contacted the Southern Arizona Rescue Association (SARA). Members of both rescue groups, including one non-caver doctor, reached the cave, rigged both the Gorge and the Hell Hole, and had a man down to Kellam by about 3:00 a.m. At this time Kellam was still conscious and could talk coherently. Apparent injuries were a broken arm, broken leg and severe lacerations about the head. Medical and rescue supplies were being assembled when, between 6:00 and 7:00 a.m., it was determined that Kellam was dead.

Kellam's body was removed from the cave at about 5:00 p.m. the day following his fall. The cause of death was probably internal injuries.

Source: Jerry Hassemer

Analysis: Inexperience and poor judgement.

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Puerto Rico, Rio Camuy Cave: On Sunday, 23 June, a group of about 15 people - men, women, and children - visited this cave in connection with the filming of a documentary picture. To enter, it was necessary for the group to don life preservers and wade or swim, with the aid of a life-line, to a landing in the National Geographic Hall.

While the group was leaving the cave, the water suddenly rose waist-deep in the period of a few minutes. Although most retreated to higher levels in the Hall, five persons went ahead and attempted to swim to the entrance. Four made it.

Hector Buesco (32), was swept away from the life-line by the current, along the bottom of the Tres Pueblos Sinkhole, and into the downstream entrance to the cave system. He was holding onto, but not wearing, a life preserver. An extensive search of the downstream portion of the cave failed to discover any sign of Buesco and he was presumed drowned.

Source: Russell Gurnee

Analyses: (Gurnee) Rio Camuy Cave can be dangerous and treacherous. The river is hardly predictable and certainly is no place for novices or mere visitors to enter without equipment and proper guidance. The first step toward this tragedy was

taken when the group entered the cave with only life jackets and a life-line; tethered boats should have been used for the traverse to the first upstream landing. The second step was five persons leaving the cave without the permission of the leader. The third and most tragic step, was that not everyone wore their life-jackets while in the water. Buesco might possibly have been able to climb above the water, (in the dark) if he had worn his.

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1969 ACCIDENT REPORTS

New York, Bull Mine: On the weekend of 22 November, Walter Kersavage (22), a physical education teacher from the McQuade Foundation Home for Children, led a group of 15 children on an outing to Bull Mine Mountain. Kersavage attempted to enter one of the abandoned mine shafts in the vicinity by climbing down a ½-inch rope hand-over-hand. At about 3:00 P.M., he lost his grip and fell nearly 100 feet to his death.

Source: Newspaper Clipping

Analysis: Inexperience and lack of knowledge of equipment necessary for such a descent. Compare the Level Crevice (Iowa) accident in 1967.

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New York, Ellenville Ice Caves: On 11 April, six boys, accompanied by the mother of two of them, visited the Ice Caves Mountain tourist attraction. After touring the area by the public paths during the morning, three of the boys, Ted Wunderlich, Jr. (17), Michael Wunderlich (9) and John Boudion (16) went off to explore on their own.

Going to the end of the "crystal chasm", they left the fenced area and, ignoring warning signs, walked to a cave-like entrance. Ted walked in first, shining a flashlight. Police subsequently said that when the boys were about 25 feet into the narrow cave, Michael darted in front of his brother and stepped off a ledge into total blackness. The boy plunged 40 feet down a two-to-three foot opening and landed in an underground stream. His body was recovered later that day.

Source: Newspaper clipping

Analysis: Inexperience and carelessness.

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Pennsylvania, Big Ridge Cave: On 25 May Tom O'Holleran (18), Orville Ormsby (24), and Del Myers (20) descended into Big Ridge Cave by rappel and proceeded toward the squeeze in the stream passage. Enroute, one must descend a slopping fissure.

While climbing down the fissure, O'Holleran slipped and slid 8 feet to the bottom, landing on his feet. In the process he struck his knee painfully against the wall. The party then left the cave. It was subsequently discovered that O'Holleran's knee was not just bruised, but deeply cut. Eight stitches were required to close the wound, and an artery had been nearly cut.

Source: Del Myers (Nittany Grotto News, Jan-Feb 1970).

Analysis: O'Holleran, who had only started caving a few months previously, was apparently unaccustomed to scrambling on muddy and insecure slopes. Only more care in moving could have prevented the accident. He was fortunate in an artery **not** being severed, as a more elaborate rescue probably then would have been necessary.

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Pennsylvania, Schofer Cave: On 7 December, Robert (33) and Joan Feuer (23), led a party of about twenty students to two beginner's caves: Dragon and Schofer. Five persons, having missed their departure, went to South Temple Cave, and then to Schofer to catch up with the main group.

The late group waited in the cave at an entrance to the Big Room. Gilbert D'Alonzo (22) stood at the entrance to the room, a slot opening some six feet above the floor. He spoke to a member of the main group, who swung a light toward him: D'Alonzo asked him to move the light, stepped backwards, and fell headfirst into the room.

D'Alonzo wore sneakers (contrary to instructions) and, like the others in his group, wore no hard hat. He was found unconscious and bleeding from his face, with other cuts.

D'Alonzo was assisted out of the cave, falling into unconsciousness at intervals, suffering from concussion. Eventually, he was treated for cuts and a broken nose.

Source: Robert and Joan Feuer

Analysis: Inexperience and carelessness. Additional supervision would have been desirable.

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West Virginia, Cass Cave: On 7 March a group of four attempted to descend into the Big Room in Cass Cave. Larry Stuart (30?) rappelled first but their new rope twisted below him into a knot he could not clear. Rescuers were called.

After Stuart had hung 3 to 4 hours a few feet off the bottom, he was pulled up at about 8 p.m.

Source: M. Balister

Analysis: (Balister) "usual problem. Most experienced person (Stuart) was not in position to help himself. Luckily, water level was low for this time of year; if the water had been normal, Stuart would have been in ice-cold water all the time. He was not wearing an exposure suit."

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Georgia, Ellison's Cave: In August, a party of eight cavers from the Florida State Cave Club (an NSS chapter) visited Ellison's Cave and four of the group descended the 125-foot Warm-up Pit. After some exploration at the bottom, they started back up.

The second to start to ascend, Janice Thomson (19) had some difficulty with her chest harness and came back down. Another member of the group then ascended, following which Thomson started up again. She climbed without a light because her carbide lamp was lo and she did not have an electrical unit. At about half-way up, her prusik knots began to slip. She replaced one with a spare from her pack and the others with knots lowered from above and sent up by Susan Scott (19) who was still waiting at the bottom of the pit.

After re-rigging, Thomson found that she could not remove the ineffective chest knot because she could not transfer her weight entirely from it to the new knot. Consequently, Scott climbed on a second rope hung in the pit until she was level with Thomson, and then proceeded to cut the interfering prusik sling with the flame of her carbide lamp. This was accomplished successfully, and both Thomson and Scott ascended the pit without further difficulty.

Source: Janice Thomson, David Thomson, and Susan Scott (Florida State Caver, 19 October 1969)

Analysis: (J. Thomson) "The direct causes of my trouble on the rope were my own inexperience in vertical caving and the fact that I had not tested my equipment before the trip began. Although I had done some rope work before this trip, borrowing someone else's equipment, this was my first pit in a cave. This was also my first set of vertical equipment, patterned after others, but untested. In both cases I must speak for myself only as all the other members who did vertical work on this trip were experienced.

Since this incident, and mainly because of it, plus the fact that we have many new members now interested in vertical caving, our grotto has begun vertical instruction, including supervised practice on a rope, lectures with emphasis on caving safety, and inspection of equipment both initially and before entering a pit."

(Although no accident occurred, this is an instructive incident and is included in these reports because of the sensible analysis - and consequences - of the event.)

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Georgia, Ellison's Cave: On 22 November Erick Foote (27), Penny Foote (22), Charles Horton (20), Steve Hudson (19), Don Hunter (21), George Morris (30), Allen Padgett (19) and Wade Padgett (16) entered Ellison's Cave for the purposes of installing a gate at the keyhole passage and to replace the register at the bottom of the 510 foot (free drop) Fantastic Pit. The Footes, Morris, and both Padgetts had more than two years caving experience. Horton and Hunter had not previously descended Fantastic Pit, but only Horton planned to on this trip. Allen Padgett had been to the bottom four times and, after the pit was rigged, was the first to descend. Horton was to follow.

At about 3:00 p.m. Horton started down using a rack with five bars, and Swiss Seat, and also wore a prusik harness with attached Jumar for safety, if needed. He was properly clothed and wore gloves.

His initial descent was slow and somewhat difficult, so he unclipped the fifth bar and was able to proceed more smoothly. Somewhat below 100 feet down he speeded up to avoid some of the spray from the waterfall in the pit. About halfway down, he attempted to control his descent by both pushing the rope around his hip and by jamming the bars on his rack. Both efforts were unsuccessful and, in essence, he fell the last 300 feet in an uncontrolled rappel.

Horton called out "belay!" at least twice at from 50 to 100 feet from the floor. Allen Padgett, who had taken the slack rope with him to one side of the pit, attempted a bottom-belay, but this was only partly effective and Horton hit bottom heels first, then struck the canteen on his left side. His head went back and his hardhat (with chinstrap) flew off. The remaining stretch in the rope immediately up-ended him, leaving him hanging hips-up and only partly in contact with the floor with his legs folded over in front, touching behind his head and shoulders.

Padgett reports that Horton was unconscious when he reached him and released him from the rope, but he came-to in less than a minute and complained of a pain in his left hip. There being no obvious broken bones, Padgett signalled "emergency" by whistle, and was able to help him hobble behind a large rock to escape the wind and the spray. They concluded that Horton must have a severely bruised left hip and thigh and, shortly thereafter, decided that he would have to be lifted out of the pit and cave.

Meanwhile, Hunter, at the top of the pit, heard Horton's cry, and the emergency

whistle and immediately got the others who were working at the Keyhole. After the situation had been discussed up and down the pit, it was decided to pull Horton up directly (there being six people at the top). The rope was re-rigged for lifting, using the rigging point carabiner as a pully, two jumars on the pit side as clamps and safetys (fastened to back-up belts) and another jumar, with seat slings attached, to be used for hauling. Horton, who could now assist himself, tied his own prusik knots to attach himself to the rope by Swiss-seat and chest harness. Padgett wrapped him in a space blanket for warmth and protection from the spray. At about 3:48 p.m., the pull began, Padgett holding Horton out of the waterfall as long as possible acrc .s the Balcony Room while one (Penny Foote) held the clamp jumar gates open (but ready to release them if needed). The rope was then held by these two jumars while that on the hauling slings was slid back again. In this way Horton was lifted to the top in 25 minutes, and moved to a safe place where he was given dry clothes, covered with a space blanket, and carbide lights were placed under the blanket for warmth. By this time he was unable to walk or even to support his own weight, and suffered intense pain in his lower back and pelvic region. He was given hot soup and hot chocolate.

By 4:35 p.m. the pit was re-rigged and Allen Padgett came up, Horton having been moved through the Keyhole to the 18 foot Second-Bypass drop. In order, the Second-Bypass drop and the First-Bypass drop (26 feet) were rigged much as for the pit, and Horton had been pulled above these by 7:50 p.m. The 125-foot Warm-up Pit was surmounted in the same fashion. Horton was carried piggy-back by Hudson through the Agony and, finally, pulled up the 15 foot entrance climb which Morris and Penny Foote had gone ahead (via the second entrance) to rig the ropes. Horton was out of the cave at approximately 10:20 p.m.

Everyone left the mountain in a Bronco. Horton was transferred to another car, received immediate treatment for pain at the LaFayette Hospital, and was finally admitted to the Tanner Memorial Hospital in Carrolton at about 2:00 a.m.

Other than minor cuts and bruises, X-rays showed Horton had a cracked vertabrae, and left pubic bone. He was released from the hospital in eight days.

Source: Marion A. Smith (information provided by members in the group).

Analysis: (Smith) Because of the speed Horton had attained, the angle of the rope, and lack of time, the bottom-belay was only partly effective. However this belay, the subsequent use of space-blankets, the strong party that was available, and the presence of sufficient equipment - as well as the Bronco at the entrance - all contributed to an efficient and safe rescue. This might not have been the case, however, if Horton's injuries had been more severe.

There is a question whether Horton was sufficiently experienced for Fantastic Pit. His longest previous rappel and prusik had been a 238 foot drop, but he had only started caving four months before. It had been felt by the others that he had previously shown sufficient skill, but it is difficult to judge when a person is "ready" to do a long drop.

There is the possibility, to which Horton admits, that he momentarily "froze"; there is also the possibility that the fourth bar on his rack would not slide up properly (this appeared to be so when the rack was subsequently inspected).

What must be done in the future is to require that anyone attempting either Fantastic Pit or the 440 foot Incredible Pit be required to have considerably more vertical experience than did Horton. This, of course, cannot absolutely prevent an accident, but it would certainly improve the odds. It is ironic that Chuck Horton was hurt on a trip to make Ellison's Cave more safe by the installation of a gate.

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Alabama, Engle Double Pit (AL266): On the afternoon of 7 December Steve Wiggins (19), Bob Blake (23) and Leslie Powell (30) rappelled into the 230 foot entrance pit to Engle Double. They did not remain in the cave long, Wiggins ascending first. Blake followed, using a single foot loop and a swiss-seat with Jumars. The seat sling was fastened with a locking carabiner and connected to the Jumar with 5/16 inch nylon rope. This piece of rope had been in fairly frequent use for about two years and looked worn.

At only 30 feet from the pit top, one strand of the seat-to-jumar rope broke. Blake prusiked down about five feet to a ledge and replaced the worn piece of rope. Unfortunately, in attaching the new rope it was necessary to open the carabiner gate. Either due to his fatigue or an oversight, or movements in maneuvering on the ledge, the gate did not relock, or became unlocked. When Blake started to ascend again the gate opened and a side loop of the swiss-seat dropped out of a carabiner. He was now held by one foot loop and a long loop under one knee. Holding himself upright against the rope, he called to Wiggins, who lowered a rope to provide a chest-loop belay. After 25 minutes he was able to swing over to another ledge, precarious and sloping, where he waited while Wiggins went for assistance.

Four hours after the rope first broke, Blake was rescued from the pit by the Cave, Pit and Cliff Unit (Huntsville Grotto, NSS) of the Madison County Rescue Squad. Powell was also hauled up from the bottom.

Source: William Varnedoe, Jr.

Analysis: A near miss, but one worth reporting. Blake's life was saved by experience and presence of mind. The lesson to be learned is to very carefully inspect your climbing equipment **before** it wears out in a pit.

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Iowa, McCabe Crevice: On 29 June, Robert Norman (24?) and several companions visited McCabe Crevice near Dubuque. None had much caving experience or contact with organized groups. It was subsequently discovered that they also thought they were entering a different cave, which they had visited previously.

Norman, carrying only a weak flashlight, proceeded but fifteen feet into the cave when he fell into a 20 foot pit in the passage. He suffered two fractures of the left arm and a compression fracture of the first lumbar vertebrae. Norman was removed from the pit by the Dubuque Fire Department and hospitalized.

Source: John W. Johnson

Analysis: (Johnson) Although these people had been in one or two other caves, they were not prepared for caving; neglected basic safety rules of caving, and succeeded in alienating the landowner (they had been denied permission to enter the cave).

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Missouri, Rimstone River Cave: On 6 December Terry Pitchford (23), Ron Kistner (18), Gary Schaecher (22), Bob Bennecke (20) and Ron Bennecke (18) entered Rimstone River Cave at about 11 a.m. for the purpose of mapping an upstream side passage. The weather was cold with several inches of snow on the ground. Showers were forecast; this was taken into consideration as it was known that large portions of the cave flooded in heavy rains.

At about 2 p.m. the party reached the side passage (a mile in) and placed their inflatable boats about 40 feet above water. After surveying about 3000 feet of the passage, at 6:25 p.m., they noticed that the stream volume had increased considerably. While discussing whether or not they should head out or continue to survey, the water was observed to rise 4 inches. They decided to head farther in where the ceiling was high and large dry ledges could be found.

Hurrying on, they encountered difficulty with high water, deep pools and falls. The water temperature had dropped to about 35°F. At about 6:50 p.m. Bob Bennecke slipped and fell when a shale ledge broke. His knee cap was exposed and he bled profusely but the group continued on until they reached what appeared to be a safe area. Kistner and Ron Bennecke went on to look for a possible second entrance as passages in the area were known to be near the surface. Bob Bennecke's cut was bandaged.

After the exploring party returned, unsuccessful, at about 1 a.m., it was decided that they should try to leave the cave; if they had not returned by 6 a.m., the remaining three would follow. Pitchford, Schaecher and Bob Bennecke slept fitfully and then started out at 6 a.m. The last bit of passage prior to reaching the boat had only six inches of air space. The others had gone ahead. Near the entrance they had to climb a 35 foot ladder up through what had become a roaring torrent.

They reached the surface at 11 a.m. Kistner and Ron Bennecke had contacted other cavers and a back-up crew was ready to start out if the three had not appeared by noon.

Source: Gary Schaecher

Analysis: (Schaecher) The cause of the accident was excessive speed in traversing a passage with tricky footing. The only possible preventative measure would have been a better respect for melting snow, which it turned out was the cause of the water rise. It was, of course, very fortunate that the injury did not incapacitate Bob Bennecke, necessitating his being carried.

Plans have been made for placing survival kits in areas of the cave where teams may become trapped by high water. Also, stricter limits on trips into caves that flood will be set when weather conditions are poor.

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Wyoming, Big Horn Caverns: On 18 June a crowd was gathered at the entrance to Big Horn Caverns during the annual National Speleological Society Convention. A treasure hunt was in progress and several small caving parties were coming and going. The entrance is a funnel shaped sinkhole leading into a fissure 64 feet deep, with much loose rock around the edge. The pit was rigged with four ropes and a ladder all of which converged at the base. All were in use at this time. A crowd had gathered at the base of the pit waiting to ascend, and there was much confusion and poor communication with the surface.

Roswell Jones (32) on belay, was about halfway up the ladder. He was having trouble because some of the rungs had slipped. It was about 3:00 p.m. as Warren Lewis (53) went in using a rappel rack. As he backed over the edge, the rope did not feed smoothly through the six brake bars. He spread the bars widely apart; the friction was suddenly reduced and he fell backward into the pit.

As he fell, he kicked loose several large rocks. He struck the brake bars upward with both hands until they grabbed the rope and checked his fall. As his fall was arrested, he struck Jones. Their combined weight caused the ladder rungs to slip

six feet down the cables. Neither was seriously injured.

The rocks which had been dislodged ricocheted off the walls and ledges, falling among the crowd at the bottom of the pit. They scrambled for safety under the overhang. One piece weighing about twenty-five pounds struck Mrs. Natalie Carty a glancing blow on the shoulder, knocking her down and causing severe pain. Others were struck by falling debris but were uninjured, perhaps because all were wearing hard hats.

Mrs. Carty was moved to a safer place and the shoulder was examined. Gradually the intense pain subsided and she chose to climb out of the pit. After the ladder was replaced she went up, on belay, and was taken to Lovell Hospital. Her shoulder was found to be badly bruised, but not broken.

Source: Warren Lewis, Roswell Jones, and numerous observers.

Analysis: (Lewis) "I was incautious in approaching the sloping edge without maintaining full control of the rope. In my twenty-five foot fall, I seriously endangered other cavers. The danger was aggravated by the congestion in the pit, which exposed many people to falling rocks. Only those climbing, or preparing to climb, should have been in the open area. A belay or safety would have prevented the fall."

The Convention Field Trip differed in two aspects from the usual trip; many people were involved, and there was no check on the techniques used, or the proficiency of the cavers. Often small groups could not "cave" together. It seems imperative that under those circumstances only the highest standards of technique and proficiency be exhibited. It would appear that the "rules" for a large convention trip must be more strict than those for smaller groups.

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Washington, Dynamited Cave: Dave Albert was taking photographs in Dynamited Cave when his strobe-flash unit exploded. A sharp explosion was heard, the case was split lengthwise, the lens and lamp-tube were blown forward, and the f/number calculator struck Albert on his hard hat and glasses frame.

Prior to use, the unit had been carried in a sealed ammunition can for about an hour. The can also contained some used carbide, from which acetylene was still being produced. Apparently, the strobe unit developed an explosive gas mixture within its case which was ignited when the camera shutter, synced to the strobe, was tripped.

Source: Dave Albert (**Speleograph**, Vol. 5, No. 11, Nov. 1969).

Analysis: Although no injury resulted, this incident is reported here because a repetition of the circumstances leading to the accident is very likely and the resulting danger of major eye injury is very great. As has been previously noted, **fire is a major cave hazard.**

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1970 ACCIDENT REPORTS

New York, Knox Cave: On 11 January a group of 31 men, women and children from Massachusetts, including both experienced and novice cavers, visited Knox Cave. Eighteen of the group went through the "gunbarrel" (a keyhole passage about 18 inches in diameter and 60 feet long) to visit the wild sections of this once commercial cave. Later some of the others also crawled through the "gunbarrel" but not finding the first group returned. The last of these, Peter Viens (14), was within 8 feet of coming out of the crawl when his knee and leg became wedged in the narrow floor crevice. This was at about 1:30 p.m.

Efforts were made to free Viens from both sides but because he complained when an attempt was made to forcibly remove his leg from the crevice outside help was sought. The Police and Fire Department were summoned and freed the boy at about 8:30 p.m. He was not injured.

Source: Newspaper clipping. Paul Dower.

Analysis: Although no one was injured, 18 of the group were trapped behind Viens for **seven hours**. The possibility of further injury to others, exposure hazard in the low cave temperature, or panic, make this incident worth reporting. Viens was presumed trapped because of inexperience, fright and being overweight. See the 1967 reports for other incidents in Knox Cave.

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Pennsylvania, Dreibelbus Cave: On 27 April Michael Sperow (17) was trapped in a cave for 8 hours when he slipped and his foot wedged in a narrow crevice. He was removed, exhausted but uninjured, by State Police and a large group (65!) of rescuers.

Source: Newspaper clipping.

Analysis: Inexperience. Compare previous report.

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West Virginia, The Hole: On 1 August a party of three, John Rutherford (39), Lynn Vinzant (21) and Roger Ohman (20), the first two experienced cavers, were surveying in Gibb's South Maze of The Hole and were in a narrow deep canyon when the sound of approaching water was heard. Vinzant and Ohman left immediately for higher ground but Rutherford, out of scientific curiosity, stayed to observe the water come. Finally, however, the roar became so loud that he hastily retreated and, in so doing, sprained his ankle badly.

With the assistance of the other members of the group, Rutherford was helped the nearly mile-long route out of the cave.

Source: John Rutherford

Analysis: (Rutherford) Panic leads to haste, a frequent cause of accidents. (Compare the similar accident in Rimstone River Cave (1969), also due to haste in retreating before rising water.) In the present instance, it had rained outside but

the water actually rose only about one foot in the period of a minute. To have avoided this accident, Rutherford subsequently suggested: "1. Start for higher ground immediately (as the others did); 2. Don't panic; or 3. Stay and watch.*"

A more serious injury would have necessitated a long and difficult rescue operation. (*If the water had risen **three** feet, staying and watching might have been disasterous.)

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West Virginia, Greenbriar Caverns: On 24 October Chuck Pluckett, Doug Rhodes (26), Linda Starr, Hans Wackerle, John Walker, and Gerry Wilson were surveying in the Master's Cave section of Greenbriar Caverns. They reached the end of a crawlway that opened into a larger passage about ten feet above its floor. Rhodes attempted to climb down and had just about abandoned the climb as too dangerous when his left foot slipped and he fell face-downward onto breakdown. During the fall his hard hat came off, despite an elastic chin strap.

Rhodes got off the rock that was pressing into his chest and sat down in great pain. He was unable to answer the calls of his companions for some minutes. They were able to reach Rhodes by another route and Walker left the cave for a chest bandage and blanket. Soon thereafter, however, Rhodes decided to try walking out. He found the trip out slow and very painful, his companions helping him every step of the way.

When taken to the hospital, Rhodes was found to have a broken sternum (breastbone) and cuts on his head and leg that had not been noticed earlier.

Source: Doug Rhodes

Analysis: (Rhodes) The fall itself confirms that I was taking unnecessary risks, but I had been in similar positions many times before without difficulty. A belay would have prevented the injury but a belay is seldom used while inspecting a climb.

Once again the lack of protection by the standard caving helmet has been shown; a miner's hat is not adequate protection for caving. New cavers should be encouraged to get a hard hat with a crushable lining and nonstretch chin strap.

The only injury of which I was aware was my chest. At the hospital blood was noticed on my scalp and a bad laceration on my leg. If a caver receives a serious injury, a complete examination should be made immediately to locate any other injuries.

The actions of my caving party during this emergency were outstanding. To them I owe apologies for screwing up the trip and deep appreciation for the help given when I needed it.

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West Virginia, Overholt Blowing Cave: At about 9 a.m. on 12 July, three boys, Bill Beck, Tom McLaughin and Lynn Reed, all 17, entered Overholt Blowing Cave. They were each wearing swimming trunks and thin shirts and had two flashlights and one carbide lamp.

At about 10 p.m. that day, Mike Balister at nearby Green Bank received a telephone call informing him that the boys had not returned. A crowd had gathered around the entrance to the cave when he arrived, but no attempt to enter had been made. Balister and Tom Dunbrack donned rubber suits and went up the stream passage until they found the boys sitting in the dark 3000 feet from the entrance. They were very cold but not injured and were able to leave the cave.

Source: Mike Balister

Analysis: (Balister) They were three boys who had done some caving but had had no contact with any other cavers so were unaware of the simplest rules that it is necessary to follow to explore caves safely. The only thing they did right was that McLaughin told his father which cave they were going to. The other boys would not have been missed for some time as their parents were away.

They had not carried spare batteries for their flashlights and a glass jar of carbide they had taken with them had fallen into the stream in the cave.

Compare the near fatality by hypothermia, in Overholt Blowing Cave (1967), of a caver who was much better prepared than these three boys.

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West Virginia, Cassell's Pit: On 7 March two moderately experienced cavers from California, John Shimmin and Don MacKenzie (both 22) visited Cassell's Pit. At about 5 p.m. Shimmin rappelled into the 96 foot entrance pit despite an abnormally large waterfall in the pit due to recent wet weather. MacKenzie did not descend.

When Shimmin attempted to prusik-climb out of the pit, he was driven back by the deluge of very cold water descending upon him. For hours thereafter Shimmin and MacKenzie communicated by notes lowered into the pit. At one point MacKenzie lowered a small gasoline stove to Shimmin. For some reason MacKenzie did not go for assistance.

At about noon the following day, a party of four cavers, including Mike Balister who has often been involved in cave rescues in the area, arrived at the cave and found MacKenzie still waiting. When told of the situation, they lowered a dry-suit to Shimmin and instructed him to put it on and tie himself to the end of the rope. They then pulled him out of the pit. He was not injured.

Source: Mike Balister

Analysis: (Balister) Shimmin used poor judgment in descending the pit under the very wet conditions present. In any event, a ladder would have been the only way to get out of the pit at that time.

Neither had obtained permission to enter the cave. If MacKenzie had also descended, a rescue might have been long delayed since they probably did not know the cave well enough to find the Windy entrance. If there had been no one at the top, our party might have concluded that an experienced group had entered the pit and were proceeding out another entrance.

Although they were in fact not injured, MacKenzie should have sought assistance as soon as it was clear that Shimmin could not ascend on his own.

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Florida, Little River Springs: On 25 January two men, Al Oliver and Aaron McKnight, both 20, drowned while SCUBA diving in Little River Springs.

Source: Newspaper clipping.

Analysis: It was concluded that they miscalculated the air they had left in their tanks. Cave diving remains a most hazardous sport.

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Alabama, Natural Well (Ala.5): On 22 March a group of six Texas cavers, Jim Jarl (22), Janet Lewis (20), Logan McNatt (23), Kathryn Moet (21), Peter Strickland (25) and Joe Sumbera (25), all students from Southwest State College, San Marcos, Texas, arrived at the 185-foot deep pit called Natural Well. At about 2 p.m., one male member of the party having descended, Lewis started her descent.

She started over the lip of the pit with five brake-bars on a rack. She had not yet placed her entire weight on the rappelling device and had to feed the rope. She took one bar off the rack and then stepped over the edge, immediately falling out of control down the rope. She tried to control her rappel and apparently was partially successful. She also was struck a glancing blow by a ledge about 150-160 feet down, probably slowing her descent. The man on the bottom, hearing her scream, raced to the rope, arriving just as she fell upon the talus slope on the bottom.

By chance, Darwin Moss, coordinator for the Cave Pit Cliff Rescue unit of the Madison County Rescue Squad, was on the trail to Natural Well at the time of the fall, and was at the pit within five minutes. Not being equipped for caving, he sent Strickland, probably the most experienced of the Texas group, down the pit with extra seat and chest slings. It was then ascertained that Lewis had suffered only bruises and abrasions.

She was pulled out of the pit with the aid of members of Huntsville Grotto who had by that time arrived. Having fallen at 2 p.m., Lewis was raised from the pit by 3 p.m., in the hospital at 3:15, and released at 3:50.

Source: Darwin Moss

Analysis: (Moss) Lewis was considered by the others in her party as capable of making the descent. In my opinion, she committed an error in removing the fifth bar from her rack before putting her full weight on the rope. Also, a bottom belay would have stopped her rapid descent. Compare the similar accident in Fantastic Pit in 1969.

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Alabama, Guess Creek Cave (AL 593): On 9 August two boys, Craig Spencer (20) and Richard Nelson (14) were lost in Guess Creek Cave for almost 12 hours, although never more than 1000 feet from the entrance. As it was known what cave they had gone to, they were finally found by two local youths just prior to the arrival of members of Huntsville Grotto Rescue Team. The younger boy was badly frightened, but they were not injured.

Source: William Varnedoe

Analysis: (Varnedoe) They had forgotten where to climb up from the stream passage to the entrance room. The cause of the incident was lack of experience and knowledge of cave exploring techniques, and insufficient "looking back". Their one light, a 6-volt "radar light", was inadequate, but was still functioning.

All parties were informed of the Huntsville Grotto meeting times and place and invited to attend, and to pass the word so that others will learn proper methods before entering caves.

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Missouri, Little Mammoth Cave: On 15 March a group of three experienced cavers entered Little Mammoth Cave, turned into the Rimstone River passage 0.7 mile in, and proceeded to crawl for some distance before turning back because of possible rain outside (portions of the passage flood during heavy storms). On their way out of the crawl they came upon a youth about 20 years old whose carbide light failed just as they reached him. Although he had a can of carbide with him, he did not know how to change the carbide in his lamp. He told the following story:

He was with a group that had taken the main stream passage, but had twisted his knee and decided to turn back. The group refused to turn back with him, nor would anyone of them accompany him out. On the way out alone, he mistakenly turned into the Rimstone River passage and was, when found, starting to crawl, although he had not had to crawl on the way in.

He was helped safely out of the cave.

Source: Jim Buss

Analysis: The accident was a twisted knee but the potential accident was far worse, save for the chance presence of other cavers. At the point the boy's light failed - in the wrong passage - he had behind him a tricky ledge and before him a long, difficult crawl. The group he had entered the cave with had acted in a thoughtless and callous manner, endangering the safety, and possibly the life, of one of their companions.

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Colorado, Groaning Cave: On 3 April Don Davis (31) and Dave Harrison (19) decided to attempt to reach Groaning Cave on the rim of Deep Creek Canyon. As they had decided this enroute, they did not have a key to the cave gate (although it was readily available to them) and would have to use the "By-Pass Chimney" entrance. At 2:40 p.m., they left their Jeep and began the 6-mile snowshoe/backpack hike to the cave. At nightfall they were still 1½ miles from the cave and so bivouacked on the snow (clear night - minus 3° F).

They reached the cave at 12:30 p.m. on 4 April and, after eating, they proceeded to a remote portion of the cave where they explored virgin passage (see NSS NEWS, June 1971). At 8 p.m. they started out and at 10 p.m. returned to the Bypass Chimney. Davis was tired after the strenuous winter hike and 7½ hours of hard caving. As he was climbing the chimney he misjudged a hold and fell about 6 feet. In attempting to catch himself, his left arm was twisted up and around, causing an incapacitating pain that later proved to be a shoulder dislocation.

Because a fracture was feared, and his arm could not be moved without causing extreme pain, no manipulation was attempted. Harrison brought down food, water and their sleeping bags and stayed with Davis until dawn, when he set out on snowshoes for help. Davis was left alone for 12 hours until help arrived, but with his clothing and two sleeping bags and adequate food, water and light, he did not suffer from shock although he could not sleep.

Rescue came about 8 p.m., 5 April with 13 men including Harrison and men from the U.S.F.S., Garfield Co. Sheriff's Dept., State Highway Patrol, and Aspen Rescue Group. A Sno-Cat and 3 snowmobiles were used to reach within a few hundred feet of the cave. Davis was given pain-killers, his arm was splinted, the gate was unlocked, and he was able to reach the vehicles with some assistance and belays on the snow-slope outside. While on the way, the heavy splint, combined with the effects of the drugs he had been given, caused the dislocation to snap into place, correcting the acute aspect of the injury. By midnight the rescue party was back on the Deep Creek road.

Source: Don Davis

Analysis: (Davis) I regard fatigue as the main cause of the mishap. Lack of a belay could be considered contributory, but the chimney is no worse than many that are routinely done without rope. A larger party would have provided a greater safety factor, but in this instance the actual course of events would probably have been no better with a bigger group.

We could have obtained the key so that the bypass need not have been used, or we could have belayed the climb. In general, it would have been safer to have avoided combining the physical strain and isolation of winter mountaineering with strenuous caving.

I would advise all cavers to carry strong pain-killers as a routine precaution. It helps, in cave rescues, for the injured person to assist in his own rescue. Such drugs as codeine may prevent the victim from being immobilized by pain alone. They may also permit correction of a dislocation by alleviating intense pain and relaxing muscle spasm. Such drugs must be obtained by prescription and should be used only in accord with medical advice as they may also impair alertness and judgment.

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Idaho, Papoose Cave: On 29 May Jerry Thornton (25) and a 13 year old companion, known only as Joel, visited Papoose Cave. While Thornton had moderate caving experience, Joel was a novice. They reached the 40 foot pit at about 2:30 p.m. and found the waterfall running at higher than normal flow. Nevertheless, they descended the pit using a ladder, but then decided to turn back because of extreme water conditions.

Thornton ascended the pit, but Joel was unable to do so, even though belayed. This was the situation at 3 p.m. when four members of the Cascade Grotto (NSS) arrived, descended the pit, and provided Joel with additional clothing as he was extremely cold. Another attempt by Joel to ascend the ladder was unsuccessful. Thornton left the cave at this time.

When additional cavers arrived (Xandu Grotto, NSS) it was decided to remove Joel directly via a nearby dry 50 foot pit. A counterbalance pully system was rigged in the pit and Joel was successfully raised up the pit and helped out of the cave. All were out by midnight.

Source: David Mischke

Analysis: (Mischke) The party of two was too weak and ill equipped to attempt this cave. On that day, novices had no business below the 40 foot pit. In addition, Joel was wearing cotton instead of wool clothing, cowboy boots, and a metal hard hat without chin strap. The actions of the first group to arrive, sharing clothing and body heat, very possibly prevented Joel from dying from hypothermia.

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SUMMARY

The summary table gives the number of individuals directly injured or involved in an accident or incident. Thus, if one member of a caving party was injured in a fall, only he or she was included, but if a party of three gets lost, three cases of "loosing way" are entered. A lot of the interpretations of individual reports are subjective so the summary has the most meaning, in the long run, to show the relative importance of causes, experience, etc.

Caving has been divided into general, vertical and diving categories because vertical and diving specialties possess additional hazards not found in general caving. The Immediate Cause of "Stumble" and the Contributory Causes of "Hurry" and "Poor Judgement" were added in the 1970 report. Lack of data in earlier reports is indicated by a dash.

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.

SUMMARY TABLE

Situation	1967	1968	1969	1970	1967-70
General	17	5	5	11	38
Vertical	6	7	7	7	23
Diving	4	0	0	2	6
Immediate Cause					
Fall	6	4	7	2	20
Falling rock or object	3	2	1	0	6
Failure of rappel or prusik	1	1	3	0	5
Stumble	-	-	-	2	2
Exposure and/or exhaustion	1	2	0	5	8
Burns	3	0	0	0	3
Asphyxiation	2	0	0	0	2
Illness	0	0	0	0	0
Drowning	4	1	0	2	7
Contributory Causes					
Climbing unroped	3	1	0	2	6
Caving alone	0	0	0	0	0
Exceeding abilities (inexperience)	12	6	7	3	29
Inadequate equipment	2	3	5	3	14
Worn equipment	0	1	1	0	2
Bad weather (including flooding)	1	1	2	2	6
Exposure and/or exhaustion	1	2	0	2	5
Loosing way	2	0	0	3	5
Light failure	2	0	0	4	6
Party too large	0	1	1	1	3
Partty separated	0	0	1	2	3
Getting stuck	2	2	0	2	6
Hurry	-	-	-	1	1
Poor judgment	-	-	-	1	1
Age of Individuals					
Under 15	4	0	1	3	8
15-20	11	6	3	8	28
"Young, or college age"	1	0	1	1	3
21-25	5	4	3	1	14
26-30	1	1	1	1	4
31-35	1	0	1	1	3
Over 35	0	0	1	1	2
Unknown	4	0	1	0	5
Affiliation with Caving Group					
Unaffiliated	7	7	3	11	29
Not stated	18	1	3	0	22
Member of Caving Group	2	5	4	5	12
Estimate of Experience					
None or little	14	8	5	8	36
Moderate	2	2	2	1	7
Experienced	2	0	1	4	7
Unknown	9	1	1	2	13
Month					
January	3	0	0	1	4
February	1	0	0	0	1
March	3	4	1	3	11
April	0	0	1	2	3
May	2	0	1	1	4
June	0	0	4	0	4
July	4	0	0	3	7
August	3	0	1	3	7
September	3	0	0	0	3
October	2	2	0	1	5
November	2	2	1	0	6
December	4	3	3	0	10

NSS POLICY FOR CAVE CONSERVATION

The National Speleological Society believes: That caves have unique scientific, recreational, and scenic values; That these values are endangered by both carelessness and intentional vandalism; That these values once gone, cannot be recovered; and that the responsibility for protecting caves must be assumed by those who study and enjoy them.

Accordingly, the intention of the Society is to work for the preservation of caves with a realistic policy supported by effective programs for: the encouragement of self-discipline among cavers; education and research concerning the causes and prevention of cave damage; and special projects, including co-operation with other groups similarly dedicated to the conservation of natural areas. Specifically:

All contents of a cave—formations, life, and loose deposits—are significant for its enjoyment and interpretation. Therefore, caving parties should leave a cave as they find it. They should provide means for the removal of waste; limit marking to a few, small and removable signs as are needed for surveys; and, especially, exercise extreme care not to accidentally break or soil formations, disturb life forms or unnecessarily increase the number of disfiguring paths through an area.

Scientific collection is professional, selective and minimal. The collecting of mineral or biological material for display purposes, including previously broken or dead specimens, is never justified, as it encourages others to collect and destroys the interest of the cave.

The Society encourages projects such as: establishing cave preserves; placing entrance gates where appropriate; opposing the sale of speleothems; supporting effective protective measures; cleaning and restoring over-used caves; cooperating with private cave owners by providing knowledge about their cave and assisting them in protecting their cave and property from damage during cave visits, and encouraging commercial cave owners to make use of their opportunity to aid the public in understanding caves and the importance of their conservation.

Where there is reason to believe that publication of cave locations will lead to vandalism before adequate protection can be established, the Society will oppose such publication.

It is the duty of every Society member to take personal responsibility for spreading a consciousness of the cave conservation problem to each potential user of caves. Without this, the beauty and value of our caves will not long remain with us.

NOTES