

NSS NEWS

March 2008, Part 2



AMERICAN CAVING ACCIDENTS 2006

**American Caving Accidents
2006**

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ACA 2006

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NSS News

American Caving Accidents

March 2008

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Front Cover

NCRC students practice transporting a patient during the 2007 NCRC week long practice. Photograph Copyright © 2007 Jansen Cardy.

Back Cover

Top: Students carrying a SKED litter during a mock rescue exercise at the 2007 NCRC National Seminar. Photograph Copyright © 2007 Jansen Cardy.

Lower: The slow negotiating of the litter in tight, narrow passage during the 2007 NCRC National Seminar. Photograph Copyright © 2007 Jansen Cardy.

An Overview of the 2006 Incidents

American Caving Accidents (ACA) is the journal of record for caving accidents and safety incidents in the United States and North America. This issue contains reports for incidents that occurred in 2006. Following the custom of previous issues, the reports have been separated into two general categories: regular caving and cave diving, and then further classified by result or outcome and by causes and contributing factors. The cave diving incidents are grouped separately, and an overview is presented at the end of this section.

Since 1994, we have used the category "difficulty on rope" to encompass such problems as becoming stuck at the lip of a pit, clothing or hair caught in the rappel device, jammed rappel safety, or simply becoming unable to ascend or descend. Our intent is to better describe these situations, which might otherwise be lumped under "stuck", "trapped and/or stranded", or perhaps "equipment problem".

In reporting the number of incidents versus NSS membership totals, only caving incidents involving fatalities, injury, or aid were included. The reader should also be aware that the members of the National Speleological Society constitute only a portion of the population of active cavers. Further, not all incidents are reported to *ACA*. Therefore these numbers should not be considered reliable indicators of accident rates for caving or used to draw conclusions about the relative degree of risk or danger involved in caving.

Incident Results

Fatalities

On average there are three or four fatal caving accidents in North America each year. When incidents involving untrained and inadequately equipped spelunkers¹ are excluded, the average drops to one or two fatal accidents per year.

There were four reported fatalities in 2006, all in November and December. The first was in Rio Camoy, Puerto Rico where a highly trained NCRC instructor was leading a tourist group. In high water and on a tether, he slipped over a waterfall and drown while being suspended by the rope. In Sloans Valley Cave a group went caving as part of an annual event but with no

helmets. During an exposed exit climb that some refused to try, one member fell. The third was during a large training session at Hoya de Guaguas, San Luis Potosí, Mexico, where a senior instructor became detached from the rope during the entrance rappel. The last fatality resulted when a local artifact gatherer found a new cave to him and decided to hand-over-hand down the entrance pit while leaving his flashlight on the surface.

Additionally there were three fatalities in the caving-related incidents area. Ski patrollers at a California ski run were adjusting a protective fence around a known gas vent when the snow collapsed and two fell in. A third went down to help and was overcome by fumes.

In addition to the incidents just described, there was a fatal cave diving accident that is described below.

Injury and Aid

Incidents in this category resulted in injury to one or more people, who then required help to exit the cave. While many of these incidents involved rescue call-outs and outside assistance, others were resolved by the cavers themselves without calling for rescue.

Once again caver falls (13) were the leading cause of injury and

**NSS Membership and
Number of Incidents**

Year	Members	Incidents
1986	6741	45
1987	7203	48
1988	7873	49
1989	8514	51
1990	9028	55
1991	9777	54
1992	10492	60
1993	11164	64
1994	11460	57
1995	11836	44
1996	11140	43
1997	11470	43
1998	11685	32
1999	12098	44
2000	11773	40
2001	11967	34
2002	12261	31
2003	12264	35
2004	12020	23
2005	11658	26
2006	11664	32

Only incidents resulting in aid, injury, or fatality are included. Membership figures include all classes of membership.

¹ In the US, "cavers" generally consider "spelunkers" to be people who have no real knowledge or understanding of caves and caving safety, but who decide to enter a cave anyway, usually without proper equipment.

rescue. Two resulted in death, two becoming stuck, and the others required rescue efforts. Included in these are cavers hand-over-handing up or down ropes and falls from where a belay would have avoided the incident. Some of the exposures were significant.

With the thousands of trips each year and the wet and sometimes slippery conditions, it is inevitable that slips and falls will happen. Six trips are in this category, including Wind Cave, Hurricane Cave, Raccoon Mountain Caverns, Rockhouse Cave, Dam #4 Cave, and Fitton Cave.

However, some of the falls in 2006 were due to very poor decisions. A spelunker slipped while hand-over-handing up a rope in Turtle Graveyard Cave and fell. The other hand-over-hand incident was a fatality.

In Crooked Creek Ice Cave, rock fall caused a serious injury that was quickly addressed and efficiently executed by the highly trained members of the caving party and rescue personnel. Also a rock fell in Church Mountain Cave causing a caver to break a leg. The cause of the rock fall is not known.

The other injury and aid incidents include coming off rope (Indecision Cave), hypothermia in (Sloans Valley Cave), and being stuck on rope causing harness suspension trauma and hypothermia (Viking Cave).

Aid, No Injury

Most incidents in this category are rescues of individuals that cavers often refer to as "spelunkers" who are typically poorly equipped and inexperienced, and are often stranded when they break or lose their flashlights, run out of batteries, descend pits hand-over-hand, or get lost. Sometimes, however, even experienced and properly equipped cavers fall ill and need assistance, or are trapped by rock fall or flooded passage.

There are eleven incidents in this category. Six trips either ran out of light (Lost Creek Cave), became lost (Snail Shell Cave, Fitton Cave, Peppersauce Cave) or were just "very over due" (Pettijohns Cave). A caver in Airman's Cave just could not get out until the rescue provided incentive.

Two rescues were due to cavers having trouble on rope and needing outside assistance. A hard-to-negotiate lip and exhaustion stopped one caver in Bear Hollow Rift. Another caver at South Pittsburg Pit became inverted on rope and needed to be hauled out.

Two short falls resulted in the person becoming stuck and needing to be extracted (Glade Cave and Clay Cave).

In Sharps Cave two people were too tired and big to get back up the entrance climb by themselves.

Injury, No Aid

These incidents resulted in injuries ranging from scrapes and bruises to sprained ankles and broken legs. In each case, the victim was able to exit the cave with minimal assistance from members of the caving party. Four incidents are in this group.

One fall (Wind Cave) was a true accident as previous members of the same party had used the rock as a handhold before it broke for the unlucky person.

In Bigfoot Cave, a multi-ton rock on a main trail rolled with a caver below. Despite breaking his leg and being pinned, the caver was able to be freed, exit the cave, and complete the multi-mile hike to the vehicles. In Hawaii, a caver near a known

entrance, stepped in the tall grass, broke a ledge, and discovered another entrance in the fall. In Fitton Cave, a caver broke an ankle upon landing from a short, four-foot jump down.

No Consequence

These incidents are typically of the "near miss" category. They are included so that the reader will be aware of the many things that can go wrong on a caving trip. Examples include carabineers or maillon links coming unscrewed while on rope, rock fall incidents and passage collapses not resulting in injury or requiring aid, and individuals or groups who become lost or stranded, but who are eventually able to find their way out or resolve their difficulties without assistance.

There were no such reports in 2006.

Incident Types

Acetylene-related

No burns, explosions, or other acetylene-related incidents were reported for 2006. It may be that the wide availability of affordable, high-quality electric headlamps has largely displaced carbide lights in US caving.

Bad Air

None of the caving accidents and incidents reported in this issue involved bad air. One caving-related incident involving asphyxiation occurred in April 2006 when three ski patrollers fell into a gas vent. At least one was overcome by bad air, but falls contributed to the deaths of the other two.

To learn more about the dangers and signs of bad air in caves, see Bill Mixon's article in the April 2000 *ACA*, and Bill Elliott's article in the December, 1997, *ACA*.

Caver Fall

Falls remain the leading type of safety incident or accident in caving, accounting for a large proportion of reported injuries and rescues. Fifteen out of 31 reported incidents for 2006 involved falls. Many of the incidents could have been prevented by the use of a belay. Cavers should consider using a belay whenever the exposure of a climb or traverse is greater than a body length, and a belay should always be used when climbing or descending a cable ladder.

Cavers also fall on occasion while moving through "horizontal" passages, accounting for a number of accidents reported in this issue. Cavers can reduce the risk of falls by wearing sturdy boots with lug soles and maintaining "three points of contact" while moving through uneven terrain.

Difficulty on Rope or Ladder

This category includes cavers who become stranded on rope and require assistance, or who experience significant difficulties and require assistance to complete their ascent or descent. The South Pittsburg Pit and Viking Cave incidents are included here.

Cavers involved in these incidents are often relatively inexperienced and sometimes unfamiliar with their gear. Others may be experienced cavers who are simply out of practice or out of shape. Some incidents occur when cavers are unable to deal with situations such as crossing the lip of a pit with weight on the rope below, crossing an undercut or overhanging lip, changing from rappel to ascent and vice versa, or climbing a cable ladder.

Competent cavers must master their systems and know how their equipment works. With practice, skilled cavers can perform a change-over in less than 60 seconds. Spend some time practicing; it could save your life.

Drowning

Drowning incidents are infrequent in "dry caving," but have occurred when cavers became trapped by flooding or when they attempted to free-dive through sumped passages. One caver died while crossing an underground river in Rio Camoy and drown, suspended by a belay line, after being washed over a waterfall.

Equipment Problem

This catch-all category includes rigging failures, slipping ascenders, light failure, rope failure, and misuse or lack of equipment. There were no reported incidents of this type for 2006.

Exhaustion

Exhaustion is a contributing factor in a wide variety of incidents in 2006. Cavers became exhausted while climbing on rope, trying to correct problems on rope, and on long trips. Exhaustion effects the decision-making process and often leads to incidents that are reported in other categories. The Bear Hollow Rift incident was a combination of exhaustion, improper equipment, and poor physical fitness. Exhaustion also led to the Sloans Valley water incident.

Flooding

The lesson taught by flood entrapments is simple: pay attention to the weather conditions. Check the forecast for the caving area, and be alert for the possibility of flooding. If the cave is known to flood and you do not have a clear forecast, go somewhere else. It is just not worth the risk of entrapment, rescue, media attention, closed caves, injury, or death. For more on the dangers of water caves, see George Dasher's editorial in the June 2003 *ACA*.

Hypothermia

Hypothermia is usually a secondary result in the reported incidents, occurring subsequent to cavers becoming injured, stranded, or trapped in a cave. There were several incidents in 2006 involving lost or stranded cavers in which some of those rescued required treatment for hypothermia. Remember: hypothermia can kill you all by itself, but it also impairs your thinking and judgment, making potentially deadly mistakes more likely.

Hypothermia was a complicating factor in several reported incidents involving cavers stuck in crevices or trapped by rock fall or negotiating water. Cavers on rope, traversing long stretches of water, and being stuck are included in this category in 2006.

Illness

There were no reported incidents of histoplasmosis infections due to caving in 2006. There were also no reported incidents where illness was a contributing factor to another kind of incident.

Lost

Most of these incidents involve untrained and ill-equipped cavers, spelunkers, or novices with little experience. Many escalate to the "stranded" category when the batteries run out or flashlights get broken. When found, lost cavers often require treatment for hypothermia, sometimes including hospitalization.

The two spelunkers in Snail Shell Cave fit this description. However in Fitton Cave the cavers became lost after they became separated from the main group.

Rock fall

Rock fall incidents accounted for several serious accidents and incidents during the reporting period, resulting in injuries and rescues as well as one case of entrapment. The most notable rock fall incidents were those in which cavers were pinned or trapped in caves.

The rock fall accident in Crooked Creek Ice Cave in September caused a serious injury that was quickly reacted to by the other members of the team.

The Wind Cave incident is included in both the caver fall and rock fall categories since the handhold that broke was the rock that knocked the caver unconscious. The caver was able to complete the trip after resting and recovering. The rock fall in Bighorn Cave could have been much worse.

Stuck

Getting stuck is usually not much of a problem for experienced cavers. Most of us have been stuck in a tight passage at some point, and have learned that a calm head and careful movement can usually remedy the situation. Sometimes, however, extracting a stuck caver from a tight passage or crevice can be extremely difficult. In 2006, however, all three incidents of getting stuck involved short falls into tight passages where help was needed to remove the person.

Trapped/Stranded

This category is used to describe incidents in which the caver or cavers were prevented from exiting the cave by rock fall, light failure, lack of equipment, equipment failure, or other causes. In many of the reported incidents, "spelunkers" became stranded due to inexperience, inadequate equipment and/or poor judgment. The two cavers in Sharps Cave became stranded when they could not climb out of the entrance. The spelunkers in Lost Creek Cave ran out of light.

An incident occurred when two people hand-over-handed down a rope into a 30-foot pit in Alabama and were unable to get back up. This would be under "caving-related" in an Alabama state publication because the "cave" does not meet the 50-foot Alabama minimum.

Other

This catch-all category includes sinkhole collapse, cuts by sharp rocks, dislocated shoulders, twisted ankles and other joint injuries, animal attacks, and other incidents not covered above, including drug labs, explosives, or bodies found in caves. The Elkhorn Mountain Cave incident is categorised here.

Caving Accident and Incident Statistics 1986–2006

Result of Incident

Result	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06
Fatality	4	3	4	1	4	6	5	5	1	2	1	4	4	4	2	5	2	6	3	0	4
Injury and Aid	10	15	11	16	18	16	17	22	19	17	16	22	14	14	20	11	15	9	7	8	13
Aid, no Injury	21	15	20	20	23	20	28	33	26	17	16	13	12	18	15	13	8	14	12	8	11
Injury, no Aid	10	15	14	14	10	12	10	4	11	8	10	4	2	8	3	5	6	6	0	10	4
No Consequence	19	16	12	21	9	12	16	3	20	12	11	4	8	3	1	2	4	5	1	0	1
Total	64	64	61	72	64	66	76	67	77	56	54	47	40	47	41	36	35	40	23	26	32

Incidents

Involving Fatality, Injury, or Aid	45	48	49	51	55	54	60	64	57	44	43	43	32	44	40	34	31	35	23	26	32
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Incident Type

Type	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06
Caver Fall	25	14	20	19	22	22	22	19	20	15	21	27	15	20	17	13	20	14	5	10	11
Trapped/Stranded	-	-	-	-	-	-	-	1	13	18	18	13	9	17	14	9	10	15	6	5	6
Difficulty on Rope	-	-	-	-	-	-	-	-	11	4	6	5	1	4	3	1	5	5	1	2	2
Rockfall	12	17	7	11	11	12	16	11	12	10	5	5	2	4	2	3	3	5	3	7	4
Lost	8	5	3	9	4	3	4	5	12	7	4	5	3	3	3	1	1	5	4	2	3
Flooding	1	3	3	4	2	2	1	3	1	4	5	2	1	4	1	1	0	6	1	0	0
Hypothermia	1	2	0	5	0	2	4	0	3	6	6	2	2	2	3	1	1	3	0	1	2
Illness	0	0	2	3	2	1	0	3	3	0	1	1	8	0	2	2	2	1	2	2	0
Exhaustion	0	1	1	3	0	2	4	2	4	1	4	1	1	2	3	1	2	1	0	0	2
Drowning	1	2	0	2	2	2	2	0	0	0	1	0	0	1	0	1	0	3	1	0	1
Stuck	3	1	0	1	1	3	5	5	2	1	2	0	1	5	3	5	0	1	6	3	2
Bad Air	3	2	1	1	1	2	1	1	2	2	1	0	1	0	1	0	0	0	0	0	0
Acetylene-related	3	0	1	1	0	0	0	1	3	0	1	0	0	0	0	0	0	0	0	0	0
Equipment	14	17	20	20	23	21	20	11	11	4	4	2	1	0	0	3	2	0	0	0	4
Other	3	4	8	6	8	4	5	4	6	6	3	2	3	2	3	3	2	1	1	1	1

Caving-related

Incidents	-	-	-	-	-	2	1	0	2	0	1	1	5	2	11	2	9	4	19	9	8
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Cave Diving Incidents

Result	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06
Fatality	7	5	9	4	8	2	5	4	6	5	2	2	0	5	7	9	3	5	6	2	1
Injury and Aid	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1
Aid, no Injury	1	0	0	0	0	1	1	0	0	1	0	0	0	1	0	0	1	0	0	0	0
Injury, no Aid	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
No Consequence	1	2	1	1	0	5	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Total Diving Incidents	9	7	10	5	8	8	7	4	7	6	2	2	1	7	8	9	4	5	7	4	2

2006 Reported Caving Accidents and Incidents

32 caving incidents reported

Date	Cave	Location	Result	Incident Type
January 6	Wind Cave	North Carolina	injury, no aid	caver fall, knocked unconscious
January 24	Lost Creek Cave	Georgia	aid, no injury	stranded, inadequate equipment
February 8	Hurricane Cave	Georgia	injury and aid	caver fall, hypothermia
February 8	Mana Nui Cave	Hawaii	injury, no aid	caver fall
March 4	Sharps Cave	West Virginia	aid, no injury	stranded, exhaustion, inadequate equipment
March 5	Raccoon Mountain Caverns	Tennessee	injury and aid	caver fall, dislocated ankle
March 16	Indecision Cave	Arizona	injury and aid	caver fall
April 16	Elkhorn Mountain Cave	West Virginia	aid, no injury	other
April 18	Rockhouse Cave	Missouri	injury and aid	caver fall
May 7	Tongue River Cave	Wyoming	injury and aid	caver fall
May 14	unnamed cave on Green Mountain	Alabama	aid, no injury	stranded in pit, descended hand-over-hand
May 27	Sloans Valley Cave	Kentucky	injury and aid	stranded, hypothermia
June 13	Snail Shell Cave	Tennessee	aid, no injury	lost, stranded
July 2	Airmans Cave	Texas	aid, no injury	stranded
July 9	Dam #4 Cave	Maryland	injury and aid	caver fall
August 4	Glade Cave	Virginia	aid, no injury	stuck, exhaustion
August 5	Church Mountain Cave	Virginia	injury and aid	rock fall, broken leg
August 12	Fitton Cave	Arkansas	aid, no injury	lost
August 17	Peppersauce Cave	Arizona	aid, no injury	lost
August 19	Bigfoot Cave	California	injury, no aid	rock fall, passage collapse, broken leg
September 4	Langdons Cave	Indiana	injury and aid	stranded in pit, inadequate equipment
September 16	Crooked Creek Ice Cave	Kentucky	injury and aid	rock fall
September 18	Fitton Cave	Arkansas	injury and aid	caver fall, broken ankle
November 19	Rio Camoy, Cueva Resurgencia	Puerto Rico	fatality	drowning
November 23	Clay Cave	West Virginia	aid, no injury	stuck
November 25	Bear Hollow Rift	Alabama	aid, no injury	stranded in pit, exhaustion
November 25	Sloans Valley Cave	Kentucky	fatality	caver fall, climbing without belay, no helmet
December 2	Viking Cave	Alabama	injury and aid	stranded on rope, exhaustion, suspension trauma
December 2	Pettijohns Cave	Georgia	aid, no injury	exceeded return time
December 7	South Pittsburg Pit	Tennessee	aid, no injury	stranded on rope, exhaustion
December 9	Hoya de las Guaguas	SLP, Mexico	fatality	caver fall, lost attachment to rappel device during descent
December 10	Turtle Graveyard Cave	Tennessee	injury and aid	caver fall, climbing hand-over-hand, inadequate equipment
December 29	Antonia Pit	Missouri	fatality	caver fall, climbing hand-over-hand, inadequate equipment

2006 Reported Cave Diving Accidents and Incidents

2 incidents reported

Date	Cave	Location	Result	Incident Type
June 14	Blue Springs	Florida	injury and aid	free-diving in cave entrance, breathed from air pocket, lost consciousness
July 15	unnamed cave, Chassahowitzka River	Florida	fatality	inadequate equipment, free-diving in cave

2006 Reported Caving Related Incidents

7 incidents reported

Date	Cave	Location	Result	Incident Type
March 4	sea cave at Sunset Cliffs	California	aid, no injury	surfer washed into sea cave, stranded
April 6	Volcanic vent near Mammoth Lakes	California	multiple fatalities	asphyxiation, fell into volcanic vent containing bad air
April 8	Rt 276 Quarry, Cliff Face	North Carolina	aid, no injury	stranded on rope
April 21	unnamed cave	Tobago	fatality	cause unknown
July 14	Two Door Cave	Hawaii	aid, no injury	kayakers stranded in sea cave
August 12	Rustyfeets Cave	Georgia	aid, no injury	dog rescued from pit
August 30	unspecified cave near Radcliff	Kentucky	aid, no injury	horse rescued from pit

Acknowledgments

As always, we are all indebted to the people who have contributed reports for this issue. Their willingness to share their experiences makes *ACA* a valuable resource for all cavers. Several notable correspondents have contributed a substantial portion of the material for these reports. They include: John LaMar Cole, George Dasher, Cindy Heazlit, Buddy Lane, Mark Minton, Bill Putnam, and Pat Seiser. Many valuable comments, corrections, and suggestions were provided by reviewers George Dasher, John Gookin, Kris Green, Bob Rodgers, and Forrest Wilson. Additional proofreading assistance was provided by George Dasher and Kris Green.

Acronyms and Explanations

2 meter SAR radio	Search and Rescue radios in the 155 megahertz to 170 megahertz range
CPR	Cardio Pulmonary Resuscitation
Ferno Litter	Hard plastic rescue stretcher used to transport patients over rough terrain
Junkin Litter	A rescue stretcher used to transport patients over rough terrain
KED	Spine-immobilization device wrapped around the the patient torso and back of head
MA	Mechanical Advantage. Used in rope, technical hauling systems
Puka	Ceiling collapse in a lava tube forming an entrance
SAR	Search and Rescue
SKED	Plastic rescue stretcher wrapped around the patient used to transport over rough terrain
Stokes Litter	Aluminum or hard plastic rescue stretcher used to transport patients over rough terrain
Z-rig	A rescue haul technique that allows rescuers to raise or belay a patient

2006 Caving Accident and Incident Reports

6 January

Wind Cave, North Carolina caver fall, injury, no aid

On January 6th, at 10 AM, Jonathan Mays (31) Scott Bosworth, Cato and Chris Holler, and Chris McGrath entered Wind Cave to inventory wintering bats for the North Carolina Wildlife Resources Commission. The cave is located high on a ridge requiring a steep one-quarter-mile climb through a boulder field. Beyond the entrance is an 18-foot-long belly crawl with a sinuous turn just before a tight squeeze into the first room, Pipistrelle Hall. This is followed by a 12-foot climb to Kentucky Canyon. Upon returning, Jonathan (who was second to last) was told of an easier way to get down. He was directed to ledge near the ceiling that the cavers had used as a hand hold to lower their bodies down for a flat, soft landing. The ledge felt solid and since three cavers heavier than Jonathan had just used it, he started to do the same. As he started to lower himself down, the ledge broke with a loud pop, causing his legs to go horizontal with a four foot section of ledge falling over him weighing about 70 pounds.

The fall was about eight feet and Jonathan was able to shove the rock away from his face about two feet above the floor. He landed on his tail bone and left side, and the rock slammed into his right knee. The others raced over to help. Jonathan wanted to get out of the fall zone, but the others wanted him to stay still. Jonathan tried walking unaided for a few steps, felt faint but could not vocalize it, and sat back down against the wall. He was unconscious for about 20 seconds while his hisses, gurgles and mutterings became intelligible. His left elbow and right knee were bruised, he had the wind knocked out of him, and he had blurry vision. His blank stare soon focused into recognition and his short term memory returned. The team moved him out of the rock fall zone once it was determined that nothing was broken, and the fifth team member was allowed to down climb the old way to assist. After a short recovery period, Jonathan received water and some summer sausage which caused an immediate energy return.

Jonathan was able to convince the team that he was all right and they could continue the bat survey, but said if he felt the least bit weak or hurt they would abort. As the day progressed, Jonathan felt much better and they completed the Wind Cave bat survey and three additional cave surveys.

In the following days, no bones were determined to be broken.

Scott McCrea, *Cave Chat*, 13 January 2006

Jonathan Mays, *Incident Report*, 15 July 2006

Comments: The adrenalin spike and drop from the fall might have caused the dizziness and consciousness loss. Watch your teammates closely when they have sustained a "mechanism of injury."

24 January

Lost Creek Cave, Georgia stranded, inadequate equipment, no injury, aid

Five men and a puppy became stranded in Lost Creek Cave after their flashlights died. It was said that they had been in the cave many times before and "knew what they were doing." Ty Johnson, Syrus Gordy III, Kenneth Eares, Bradley White, another man, and a puppy had gone to the cave after work. Around midnight, the families realized they were together and, after asking around, found they had said they "were going caving". Syrus Gordy Jr. found the dog's leash and other items outside the entrance, and the Walker County Cliff-Cave Rescue was called at 1 AM.

The Walker County team established entrance control and started a hasty search at 3:52 AM, breaking into sub-teams inside the cave for a systematic check. A phone was established at the first junction. The spelunkers were located at 4:45 AM and they were out by 5 PM after 15 hours in the cave. Their two flashlights had died.

Kelly Jackson, *Catoosa County News*, "trapped (sic) in cave rescued." 26 January 2006.

Diane Cousineau, *Incident Report*, 27 January 2006

Stump Martin, *Chattanooga Times Free Press*, "5 people, puppy rescued after stranded in cave." 26 January 2006

Comments: After two hours, when they were a long way from the entrance, the second of the spelunkers' two small flashlights died and. A clue found during the search was a pile of dog poop.

8 February

Hurricane Cave, Georgia caver fall, hypothermia, injury, aid

While on a 14-person trip (4 adults and 10 children) by the Georgia Department of Human Resources, a 16-year-old boy fell about 300 feet inside Hurricane Cave. One of the leaders said that the cave was slick, and after slipping and falling, the boy complained of neck pains and could not move his extremities. He also had a concussion and was becoming hypothermic. The call went out at 2:30 PM and the Dade County Mountain Rescue team, and the Walker County Cave-Cliff Rescue team responded.

Access to the cave is through a 165-foot-long culvert beneath Interstate 59. The boy was packaged in a Junkin litter with warm blankets and transported by helicopter when he reached the surface.

Stump Martin, *Chattanooga Time Free Press*, "Teen rescued after caving at Rising Fawn." 9 February 2006

Diane Cousineau, *Incident Report*, 9 February 2006

unattributed, *Dade County (GA) Sentinel*, "Caver Rescued After Fall." 15 February 2006

Comments: It was noted that a SKED or other plastic litter would have worked better. The helicopter transport was because of the boy's hypothermia, but he had rewarmed during the extrication. The group had been in the cave before.

8 February
Mana Nui Cave, Hawaii
caver fall, injury

On February 8th Art Palmer, Peg Palmer, Nevin Davis and Judy Davis were planning to map the Mana Nui Cave area (AA17 Entrance) of Hualalai Ranch Cave. While the rest of the group pondered how to descend into the sinkhole (sharp-edged puka about 12 to 15 feet deep), Art circled around to the other side to get a better perspective. While walking through the tall fountain grass, he stepped into a hidden hole. A small ledge broke under his weight and he fell 12.5 feet and landed on his lower back on breakdown. A careful self-examination showed no apparent damage, and he was able to greet the rest of the party, who scrambled down in the nearby puka. The mapping trip continued as planned. Later medical tests showed no injuries, aside from a sore and discolored lower back. His symptoms disappeared within a month.

Cindy Heazlit, *Incident Report*, 6 March 2006

Art Palmer, *Incident Report*, 19 April 2006

Artfacts Analysis: Art was lucky to have landed on a fairly flat rock. It is wise to be especially careful in lava terrain, where openings tend to drop off sharply, in contrast to those in soluble rock, most of which are funnel-shaped and offer more warning of their presence.

4 March
Sharps Cave, West Virginia
stranded, exhaustion, inadequate equipment, aid

Donald and Robin Lilly (both 36), Ken Fogle, and Tara Misner entered Sharps Cave at 2:30 PM for an easy recreational trip. The cave is very caver-friendly and is a popular destination to take novice cavers. The group took an energy-draining round-about route to the Waterfall Room.

The party rigged an etrier in the cave's tight, 7-foot entrance pit. Ken and Tara were able exit just fine, having both been to the cave previously. However, Donald and Robin were unable to get back up the steep, slippery slot, even with the help of the etrier and became exhausted. Donald is big and had additional trouble with the tight ascent.

Pocahontas County Volunteer Search and Rescue was called and seven people responded. One of the cavers was sent to the entrance to make sure his friends had enough clothing to keep warm, as the temperature on the surface was in the mid twenties.

Bill Liebman entered the cave and determined the cavers were not too large to get out the passage and only needed the proper equipment to ascend. He improvised a two-rope ascending system he dubbed the "West Virginia Ropewalker. A foot loop was tied in the bottom of each rope and dropped into the entrance. The trapped spelunkers each placed one foot in each of the loops, and they were hauled from the cave by alternating standing in each loop, while their rescuers pulled up the other

rope. They were able to relax their upper bodies while ascending with their legs. The actual name of this ascending system is Bilgeri technique. They were out in a half hour.

Bill Liebman, *Incident Report*, 6 March 2006

George R. Dasher, *Incident Report*, 8 March 2006.

Comments: Both Donald and Robin were reported to be over weight. That, the tight entrance, and their inexperience and exhaustion contributed to the problem. They also had no packs.

5 March
Raccoon Mountain Caverns, Tennessee
caver fall, injury, aid

On March 5th, an eleven-person church group went on a guided, commercial, wild caving tour at Raccoon Mountain Caverns. The group members were all adults. About 3:30 PM, first-time caver, Barbara (49), slid down a 25 to 30-foot incline called the Sandpaper Slide about 2000 feet inside the cave and dislocated her right ankle, turning it at a 90-degree angle. Fortunately, there was a doctor and a nurse in the group. The injury was diagnosed and the trip leader, Patty Perlaky, made the 30 minute trip out of the cave to call for rescue and return with warm blankets.

The Hamilton County Rescue Cave and Cliff Team responded. Barbara was given morphine by the doctor and the dislocation was reduced. She was moved up the narrow passage and packaged in a Ferno litter. The evacuation continued until reaching the surface about 8:30 PM, where Barbara was transported to the hospital.

Buddy Lane, Patty Perlaky, *Incident Report*, undated

Staff Report, *Chattanooga Times Free Press*, no title, 6 March 2006

unattributed, *Chattanooga News Channel 9 (WTVN)*, "Woman trapped in Cave." 5 March 2006

Comments: Buddy Lane reported that she remained in good spirits which must have benefited the rescuers during the effort.

16 March
Indecision Cave, Arizona
caver fall, injury, aid

While on spring break from Duke University, David Shipman (20) and two friends went to Indecision Cave. David told his friends to wait in the cave's first room while he went to retrieve a camera's memory card left from a previous trip. David is an experienced caver and had been in the cave several times before. After two hours and his not returning, one of the two friends hiked out of the canyon to call for help. The other waited at the entrance.

David went to the end of the cave, negotiating 600 feet of passageway in some large, well-decorated rooms, and rappelled down a 40-foot pit at the end of the room. He ascended the pit to the narrow squeeze at the top of the pit, which is on slick, wet flowstone. At that point he came off rope and fell back into the pit, sustaining a concussion and short term memory loss.

One hundred seventy rescuers from eight agencies, including three military units and cavers responded. Many of the rescuers

had no cave rescue experience or training. Steve Willsey, a nearby Kartchner Caverns State Park ranger and member of the local grotto arrived, had been caving with David before and knew the cave. Steve and fellow caver Doug Noble were able to explain the difficulty of finding the cave and the obstacles inside, and were allowed to lead two search teams into the cave to look. Steve's team found David. David's ascender was still on the rope at the top of the pit. David, at the bottom of the pit, was still in his seat harness, and his non-locking carabineer gate was tweaked so it would not close properly.

David was packaged in KED, SKED and when needed, in a stokes litter. It took 60 in-cave rescuers 15 hours to move him out, arriving at the entrance at 3 PM. A Blackhawk helicopter lifted him off the mountain side and over to the Tucson Medical Center. Amazingly, David was released the following day having no other injuries than the concussion and amnesia of the event.

Steve Willsey, *Incident Report*, 29 April 2006

unattributed, *Associated Press*, "Crews rescue caver in Huachuca Mountains." 19 March 2006

Bill Hess, *Sierra Vista Herald*, "Man falls into cave pit on Fort Huachuca, leading to lengthy rescue." 19 March 2006

Gentry Braswell, *Sierra Vista Herald*, "Man rescued from cave on for release from Tucson hospital." 18 March 2006

unattributed, *Arizona Daily Star*, "Man who fell into cave pit discharged from hospital." 19 March 2006

Tom Beal, *Arizona Daily Star*, "Caver ordeal cause of gap in memory." 21 March 2006

Lorraine Rivera, *KDVA News Channel 4*, "Cave rescuers: 'It was an amazing experience'" 21 March 2006

Comments: David should not have been caving alone. Eight rescue teams and four military units were involved with some of the rescuers having little or no in cave experience. Crucial to the efforts were that cavers Steve Willsey and Doug Noble were able to convince authorities of the difficulties and allowed to lead the hasty teams. There was some difficulty with cave radios, but reports that two-meter SAR radios worked well. The US Border search and rescue team, BORSAR, contributed significantly. Due to the cave's sensitivity the cave's name was never released to the media and was not published. Three trips following the rescue were completed for restoration purposes.

16 April

Elkhorn Mountain Cave, West Virginia no injury, aid

There was a rescue of sorts in Grant County's Elkhorn Mountain Cave on Sunday, April 16th. Two Canadian cavers exited the 145-foot entrance drop just fine, but a third had trouble because of a large camera case. He rappelled back down, and the other two tried to haul him out; however, the rope became caught. The Potomac Speleological Society field house near Upper Tract was called at about 6 PM and two car loads of people responded with more rope. The third caver was able to get out under his own power on the second rope (and presumably his camera made it out also).

George Dasher, *The West Virginia Caver*, 6 June 2006

18 April

Rockhouse Cave, Missouri injury, aid

Three adults and seven students were on a field trip to Rockhouse Cave near Cassville. During the trip, a 13-year-old student, Dustin, slipped and fell about 8 feet while climbing a chimney about a half mile inside the cave. He landed in a hole, and began losing feeling in his feet. After the adults were unsuccessful in freeing him, two adults escorted the remaining students to the entrance. One adult remained with Dustin until help arrived. Emergency personnel were called about noon. Five rescue teams responded including three fire departments and a Forest Service rescue team. They had no in-cave communications equipment and their surface radios did not work underground. Later a cave rescue team from Carroll County, Arkansas responded.

The rescuers were able to free the boy and start an evacuation. The patient was packaged in a SKED because of a possible back injury. In some places they "swung Dustin over holes and crevices" on the way out of the cave. Communication to the surface was created with 30 people stationed along the route orally passing messages back and forth.

The patient was packaged in a SKED because of a possible back injury, and they reached the surface about 4:30 PM. A waiting helicopter took Dustin to Springfield hospital where it was determined he had no critical injuries.

Amos Bridges, *News-Leader*, "Boy hurt on school trip, pulled from cave." 19 April 2006

unattributed, *Kansas City Star*, "Teen is recued after fall in cave." 20 April 2006

Melissa Yeager, *KY3 News, Springfield, MO*, "Rockhouse Cave has narrow passages, steep dropoffs." 19 April 2006

Murray Bishoff, *The Monett Times*, "Monett firemen play key role in cave rescue." 19 April 2006

Comments: The distance into the cave of the accident seems inflated with respect to the time frames of the call out to completion of the rescue. Another comment was "It was tough for about 600 yards." The large response allowed the communication problem to be overcome. The Red Cross provided surface refreshments.

7 May

Torque River Cave, Wyoming injury, aid

Tim Peterson was rescued from Torque River Cave on May 7th. He suffered extensive injuries from a 50-foot fall to both feet and his back. Rescuers included the Dayton Fire-Rescue, Sheridan Fire-Rescue and Sheridan SAR. Permanent paralysis is not expected. Little more is known at this point about the fall or the rescue.

Denise Keep, paid advertisement, *The Sheridan Press*, p. A2, 18 May 2006

Source: Gerald Forney

14 May

**unnamed cave, Green Mountain, Alabama
stranded in pit, no injury, aid**

Two men descended hand-over-hand down a 30-foot-deep cave off the Green Mountain's Nature Trail near Huntsville. Rescue crews were able to get them back up safely. One of the two was too exhausted to make it back up the mountain.

unattributed, *WAFF 48 News*, "Man rescued while caving." 18 May 2006

Comments: This is listed under Caving Related because the cave is only 30 feet long and does not meet Alabama cave minimums.

27 May

**Sloans Valley Cave, Kentucky
fatigue, hypothermia, aid**

A through trip was planned in Sloans Valley Cave System from the Post Office Entrance to the Garbage Pit Entrance on Memorial Day weekend. Steve Gladieux and eight novices stayed up late the night before, and the next morning two novices decided to stay on the surface and sleep. This reduced the group to seven.

The group entered the 25-foot chimney Post Office Entrance at 11 AM and expected to be out the Garbage Pit Entrance at 6 PM. They made several side trips, including a visit to the Fountain of Youth and the Big Room's north overlook, and they discovered that the bolts had been cut at the Big Room's south overlook. However, since everyone was getting tired and the return trip was 2.5 hours of solid caving Steve lowered each person down about 8 feet to a ledge, then rappelled down himself using a munter hitch. He pulled the rope because he needed it for the swim at the First Lake Room. With time getting short they headed for the Garbage Pit, some 40 minutes away.

The water beyond was 35 feet higher than the last time Steve had been in the cave. After encountering thigh-deep water in the Big Room and crossing the Hogback in good spirits, he discovered the bypass at Echo Junction was sumped. The group had only two headlamps that were totally waterproof. Darshan (last name and age not known) volunteered to do the 175-foot swim and provide light for the others, so he took one of the waterproof lights and started swimming trailing the 70-foot, 8mm rope with a dry bag buoy at the other end. Before reaching the end of the swim, he became very fatigued and yelled "Help!" before disappearing under water.

Steve is a trained lifeguard. He jumped into the water, causing his light to go out. When he reached Darshan after the long swim, Darshan was intermittently underwater and coming up and gasping for air. In his panic of drowning, Darshan tried to climb onto Steve to keep his head above water, causing them both to go under. Steve was able to push Darshan to a steep, slick, entrance side mud bank. Darshan could not stand up and could barely talk so Steve used the 8mm rope to haul him up the bank. Darshan was seriously hypothermic and unable to shiver. He had dilated pupils, was slurring words, had no motor control (fine or major), could not express complete thoughts and was drifting in and out of consciousness. Steve shook him awake,

told him to eat, yelled to the others to try and keep him awake, and swam into the next lake towards the entrance.

He alerted the two novices on the surface of the situation. They had no flotation devices in camp, so he ran to the nearby landowner's house and called a cave rescue. The first rescuer arrived in ten minutes while Steve gathered supplies to go back in. The rescuer and Steve had a heated discussion on whether Steve should be allowed to go back in, as the rescuers needed someone to show them the way. Steve immediately went back in with 200 foot of thin rope, food, water, warm dry clothes, and a blanket, all of which were enclosed in several trash bags. He was back at Darshan's side about 40 minutes after leaving him. He had Darshan strip and dried him off, gave him food and water, and Darshan immediately started to improve. It took the rescue squad five hours to get him across the lake. The rescue took a total of 11 hours.

Steve Gladieux, *The Kentucky Caver*, "Accident Report: Sloans Valley Cave System, Memorial Day weekend May 2006." 2 June 2006

John LaMar Cole, *The Kentucky Caver*, "Rescue at Sloans." 2 June 2006

unattributed, *WKYT 27 News First*, "Rescue Workers Save Six Trapped Cavers." 29 May 2006

Comments: Several items led to this incident: experience-to-novice ratio, fatigue from pre-trip activities, a much higher water level, inadequate waterproof lights, and borrowed equipment. Steve was lucky no one died, and the only thing that saved Darshan was Steve's strength as a caver. A local news team interviewed John LaMar Cole, but were only told the cavers had "exceeded their limitations" but "had otherwise had done everything as they should".

13 June

**Snail Shell Cave, Tennessee
lost, inadequate equipment, aid**

At 5:30 PM, Tim Hernandez, Jr. and Matthew Donald Corns, (both 18), were dropped off to enter the 13-mile-long Snail Shell Cave (without the permission required by the landowner (the Southeastern Cave Conservancy). When they did not return, a call initiated a search at 2:30 AM. Because it was not known if they were in the cave, a surface search with land manager Bob Biddix was conducted, followed by a search of the men's homes, and an interview with the person who dropped them off.

The Hamilton County Rescue Cave and Cliff Team responded and a hasty search was made of the dry Goo-Pan Alley passages. At 6:30 AM, a communications team set up field phones at a junction room 300 feet inside the cave. On the way in, they found two cell phones and a small flashlight. Based on the last phone call placed on the cell phone, it was suspected that the two lost teenagers were probably still in the cave. At 8:30 AM, two search teams went in to search the downstream portions; one searching dry passages and the other searching wet passages. Their destination was the Gnome Chamber. A third team led by Jim Hickman, with John Hoffelt, Jason Hardy, and paramedic Chris Gandy started to search the Grand Canal section from the Clark Entrance at 9:30 AM. This section has large borehole passage with ankle-to-waist deep water and, although it was

thought there would be little likelihood that the two teenagers would be found here, a search was initiated. This group found that the cave register had been dumped and that the last entry of May 17th, a month earlier.

After a brief link up and conversation with the second team at the end of The Link, the third team continued the search. At 10:35 AM, the missing teenagers were found standing on the side of the passage out of the water. They were both dressed in cotton running shorts and tee shirts, and had running shoes. Both had energizer LED headlamps and second AA battery light sources. The batteries had died. After a brief medical check, they were escorted out the Clark Entrance where they refused to be transported to the hospital. It took several hours for all of the rescue personnel to exit. The two had been underground for over 17 hours.

John Hickman, *Incident Report*, 19 June 2007

Lisa Marchesoni, *The Daily News Journal*, "Two teens found safe in cave." 15 June 2006

Doug Davis, *The Daily News Journal*, "Snail Shell unique ecosystem." 15 June 2006

Lisa Marchesoni, *The Daily News Journal*, "They are safe, I'm glad my boy's OK." 15 June 2006

Comments: Several very poor decisions led up to this rescue, including entering without permission, and inadequate lights, equipment or clothing. While being led out of the cave, the two teenagers told their rescuers they "just wanted to explore".

2 July Airman's Cave, Texas aid

A group of unknown size was exploring Airman's Cave south of Austin on Sunday, July 2nd, which contains sections that are tight and crawly. After they were about 1000 feet inside the cave, a woman either would not or could not come back out. Members of the group went to the surface and called 911, probably about 4 PM. It took rescuers about two hours to reach the woman. Once the rescuers reached her, she became "motivated" and was able to make it to the surface under her own power. She did not appear to be injured, and she reached the surface about 10:15 PM. About 50 Austin firefighters and EMS personnel were on the scene, both in and outside of the cave.

Quita Culpepper, *KVUE-TV News, Austin, TX*, "Woman rescued from cave." 3 July 2006

unattributed, *KXAN-TV News, Austin, TX*, "Rescuers Pull Woman From Cave." 3 July 2004.

Melissa McGuire, *KVUE-TV News, Austin, TX*, "Warning issued about exploring Austin caves." 3 July 2006

Comments: Little more is known about this incident. News reports do not agree on times of when a problem was determined, reporting time of party, the actual problem, and the number in group.

9 July Dam #4 Cave, Maryland fall, injury, aid

Three teenagers went into Dam #4 Cave along the C&O Canal. At 8:52 PM and 150 feet inside the cave, one of the three teenagers (16) fell about 12 feet where he received deep cuts on his forehead and a possible broken wrist. One of the other two teenagers ran to the entrance and yelled for help. The Williamsport Volunteer Fire Company responded and the hurt teen was packaged in a stokes litter and transported to the entrance.

Karen Hanna, *Herald-Mail.com*, "Youth trapped in cave." 10 July 2006

unattributed, *WHAG-TV News, Hagerstown, MD*, "Cave Update: Teen Trapped in Cave Rescued." 9 July 2006

Herald-Mail.com, "Police briefs." 11 July 2006

Comments: No mention of the teens having helmets, boots, or other equipment was mentioned in the reports. There was a SKED present, but the rescuers used a Stokes litter because it was easier and safer.

4 August Glade Cave, Virginia stuck, injury, aid

Emily Bacon (13) went with the Girl Scouts to Glade Cave as the final major activity before leaving a week-long camp at Camp Mayflower. Their group (10 girls and 4 four adults) was properly equipped and supervised, and they had received pre-trip caving ethics training.

Emily slipped and slid between two boulders while doing a downclimb about 300 feet from the entrance. Her entire right side was stuck and her chest was wedged between the rocks (which hurt). After several unsuccessful attempts, a counselor went to the nearby farmer (the landowner) to call for help while four stayed with Emily. The counselors covered Emily's accessible areas with blankets and made sure they kept her spirits high while waiting for help.

Several rescue squads responded, including the Mount Solon Volunteer Rescue Squad, who physically released her from the crack. She was wedged for over two hours.

Patty Smith is the director of the camp, has been running the adventure program for 24, years and has been caving for 27 years. Her staff receives training and the camp has set policies for caving trips.

Eileen M. Carlton, *Lounoun Times-Mirror*, "Ashburn girl survives cave ordeal." 15 August 2006

David Royer, *Newsleader.com, Central Shenandoah Valley*, "Girl gets stuck in cave." 5 August 2006

Lauren McKay, *WHSV-TV, Harrisonburg, VA*, "Teenager Gets Stuck in Cave." 6 August 2006

Comments: The camp director has consistently run safe caving trips over the years.

5 August
Church Mountain Cave, Virginia
rock fall, injury, aid

A Camp Horizon youth group caving trip was underway when a rock fell, breaking the leg of a 19-year-old man. It took six rescue personnel about two hours to get him out.

WHSV-TV, "Caving Accident Rockingham County." 6 August 2006

Comments: Little more is known about this incident.

12 August
Fitton Cave, Arkansas
lost, no injury, aid,

During a trip to Fitton Cave in the Buffalo National River, two cavers became separated from the other four in an area of extensive breakdown. The group of four exited the cave thinking the other two were in front of them. The remaining two, who had each been in the cave twice before, tried to find their way out, but became confused at the a key point in the East Passage. They sat down to wait for rescue.

At 11 PM, the park service was notified and a search and rescue operation was initiated. At 3 AM on August 13th, a hasty search team consisting of one NPS employee and three caver volunteers entered the cave and headed to the point last seen. The cavers were found in good shape at 5:35 AM about one mile inside the cave. They and their rescuers were out by 7 AM. Another team went in a 6 AM to de-rig communication wire and remove flagging tape. This effort was completed by 9 AM.

Chuck Bitting, *Inside Earth*, Vol. 9 No. 1, "Cave Rescue.", Summer 2006

Comments: None.

17 August
Peppersauce Cave, Arizona
lost, aid

On a Thursday evening, three people (two women and a man ages 20, 18 and 18 respectively) decided to visit Peppersauce Cave in southern Arizona. The cave has about 7000 feet of mapped passages and mazy area in the back beyond the "Rabbit Hole." The group was at least moderately well-equipped, with a pack containing extra lights, batteries, three lunches, water bottles, wallets with IDs, and a digital camera. None had a helmet, although they had Tika-like LEDs on headstraps.

After exploring the front part of the cave, they found a small low opening which was almost sumped with water. They decided to check it out (in the spirit of exploration); however, not wanting to get their pack wet (which contained their extra lights), they decided to leave it behind. The group explored on (beyond the Rabbit Hole and the partial sump) and completed a loop before trying to get out but failed to see the route back. The route is more obscure from the exiting direction. They went around the loop at least five more times, during which they took pages from the register in the back of the cave and wrote "No" on the pages and left them at passages they had checked. After several hours

of literally going in circles, their lights began to fade. They had no spares with them so they decided to wait for help.

They had told their families where they were and the families called the police once the party was overdue. The sheriff deputy confirmed the car in the parking area at 9 PM. Southern Arizona Rescue Association (SARA) and cavers responded. At 6 AM, a three-person hasty team of SARA members entered and quickly found the abandoned pack. Wallets and the pictures on the digital camera confirmed where the explorers had been, along with date and time stamps. The embarrassed group was found uninjured about 20 minutes later. They were escorted out of the cave along with other rescuers from Escabrosa Grotto.

Steve Smith, *Cave Crawlers Gazette*, AZ. "Rescue in Peppersauce Cave." October 2006, Vol. 48, No. 10.

Comments: This group was better prepared than many people going to Peppersauce; however, they forgot to keep looking back and they left their pack. The man (18) felt thirsty, so he found a pool and took a drink. This cave receives a large amount of traffic and the pools are unsanitary. The group was smart to tell their families where they had gone and when they expected to return.

19 August
Bigfoot Cave, California
rock fall, injury, no aid

A group of eight cavers went into the Discovery Entrance of Bigfoot Cave on a Saturday to push climbing leads. They split into a scouting group and a climbing group, and the climbing group went to the Cthulu Room because it contained several climbs that seemed doable in a day.

The climbing group picked a tall lead in the room and had just finished placing their forth bolt when Greg Milano and John Lane returned from the Dry Borehole scouting group. Suddenly the boulder Greg was on started to shift, and Greg said "Whoa!! John! Are you clear?" John replied with a, "No! No! I'm not clear!" This was followed by a terrible sound of crashing boulders and horrific screams by both John and Greg. Then there were screams for help. Both groups converged.

The floor and ceiling of the choke had simultaneously collapsed sending John into a freefall. He fell about ten feet before stopping and was pinned between the boulders below. The majority of the "Geo Metro-sized" boulders stopped, wedged above him. His left leg was smashed and another boulder had rolled on top of his chest. Amazingly, he was able to slither out from under the rocks, but it was obvious that his left leg was badly injured. It was decided that John could make it to the entrance with help, so a self rescue effort began. Some people provided aid, and others located the easiest route. The group arrived back at the entrance at 1 AM, and John was able to hobble and hike out to the trailhead the next morning. X-rays showed he had broken is fibula (smaller, lower leg bone) below the knee.

John Lane and Matt Covington, *Incident Report*, 24 August 2006
Bern Szukalski, *NSS News*, "Underground Update." of the Shasta Area Grotto, CA. Jan-Feb, 2007 *SAG Rag*, June 2007

Comments: The unstable rock was on the main route and countless cavers had climbed across it. With the remoteness of the cave, a serious injury could become a fatality if not properly executed.

3 September **Langdon's Cave, Indiana** **stranded, inadequate equipment, aid**

Ben Fortner (21), Zack Miller, and Katie Condit went on a into Langdon's Cave to explore the "Keyhole," a 38-foot deep pit they had been unable visit on the previous trip. The pit is some 500 feet from the entrance. The threesome had a permit to enter the cave and were equipped with helmets with headlights, three flashlights, and dynamic rope, but no rappelling or ascending gear. The pit has two parts, with the shorter, top part being the easier of the two. Ben hand-over-handed down the pit, but was unable to get back up without equipment, so Zack was sent for help, and a rescue team arrived with an extra set of ascending gear. Ben was shown how to use it and climbed out.

Charlie White, *Courier Journal*, "Ohio man rescued from cave in Indiana." 4 September 2006

Ben Fortner, *Cavechat*, posted 8 October 2006

Ben Fortner, email to Bill Putnam, 5 January 2007

Comments: The group was not trained or equipped to drop the pit. They did have the needed permit, so a ticket was not issued. Ben logged onto *Cavechat* to provide more accurate information. His reported injured hand by the media was merely a scratch and not worth mentioning. Dayton Underground Grotto has attempted to make contact with the group.

16 September **Crooked Creek Ice Cave, Kentucky** **rock fall, injury, aid**

Five Boy Scout leaders and three scouts entered the the lower entrance of Crooked Creek Ice Cave at 10:40 AM. The group was properly equipped with the appropriate light sources, helmets, and suitable clothing. The trip leader and one other member were experienced cavers and knew the cave.

At 1:20 PM, while waiting at the bottom of an climb approximately 300 feet from the upper entrance, a large rock (60'ish pounds) was dislodged, striking Assistant Scoutmaster Mike Byrne (45). The rock fell 10 to 15 feet and struck Burne on the left side of his face below the helmet and left shoulder. He lost consciousness for about two minutes and was not aware during the following extraction.

A physician in the party provided immediate medical care. The trip leader is a firefighter and paramedic and coordinated in-cave movement of the patient. A cave rescue phone chain was activated. A third adult in the party was a firefighter and EMT, and he coordinated the vertical rope extraction at the cave's upper entrance. Other cavers and members of the scout troop provided additional manpower.

A Stokes litter was obtained from the nearby Great Saltpeter Cave Preserve shelter house. Burne was placed in the Stokes and carried to the upper entrance, where the vertical lift system

had been rigged. A helicopter had arrived and Burne was airlifted from the entrance area at approximately 3:20 PM.

Trey Ferris, *Incident Report*, 16 September 2006

Bob Ausdenmoore, email to GCGrotto user group, 20 September 2006

Comments: This is about as close as a cave rescue team can get to achieving "the golden hour" from the accident to the hospital. Besides a concussion, Burne sustained a small temporal bone skull fracture, two traverse spine fractures to L4 and L5, and three fractures in his pelvis and groin region due to impact load transmission through his body. He has no recollection of the trip and his recovery was expected to be six to eight weeks.

18 September **Fitton Cave, Arkansas** **caver fall, injury, aid**

Jeff Holt (37), Ron Burke (37), Brian Alley (41), and Joe Hovis (35) entered Fitton Cave at 8:30 AM, on Monday morning and headed for the Tennari Room before. They made it to the Out Room before noticing the time (2:30 PM) and started out of the cave. Upon entering the T-Room, Brian and Tom took the high right route. Joe and Jeff took the slide to the left. At the bottom of the slide is a four-foot high jump. Joe made the jump without difficulty. When Jeff jumped and landed, he heard a loud "pop" from his left ankle, he crumpled to the ground. He stood, thinking he had sprained his ankle and crumpled again. The lower end of the tibia (larger, lower leg bone) was broken. The group decided to leave the boot on to reduce swelling.

Jeff was able to crawl and hop to the Manhole Entrance. The group tied a rope and he was able to ascend with assistance from the team. They then tied a rope to a Swiss seat and Jeff was able to descend a rope ladder with his good leg while the others held his weight so he could reposition himself after each move. They then met Charles Angle, who left to contact the park service. The park service in turn provided access through a gated access road. The group moved a half mile down the trail, assisting Jeff to the access road. He was then loaded into a truck and made the trip to the hospital.

Jeff Holt, *Incident Report*, 10 October 2006

Comments: The team performed an appropriate self rescue given their level of experience and the injury.

19 November **Rio Camuy Cave, Puerto Rico** **fatality, drowning**

Winfredo Lopez Luquis (34), Carlos Acevedo Lopez, and two other experienced cavers were guiding a group of 13 local tourists (three of them adults) through Rio Camuy, in the Resurgencia area (resurgence). Sometime during the morning, Winfredo was advised by one of his teammates to change to another area where the river was reported to be roaring at 200 cubic feet per second. They re-routed the trip and traveled a long distance to get the extreme experience.

This section of Rio Camuy is essentially a channel with walls up to 40 feet high and it had been raining hard in the river basin the

day before. The group rappelled down the 40-foot-high wall to a river ledge. The rope was long enough and they decided to body belay one of the guides to inspect the river while in the water, as the group needed an escape route. Carlos clipped into his harness and moved near a 6-foot-high waterfall hydraulic (to protect the group from being exposed to that area).

For some reason that is not well understood, Wilfredo decided to have a look and clipped into the belay line. He was advised three times not to but he did anyway and suddenly fell into the water. The tension on the line caused Carlos to fall in as well. Both went down behind the waterfall hydraulic in seconds.

Carlos managed to turn and divert the water over his back to get a breath of air. Wilfredo did not have a chance to do this. Both struggled for their for their lives. Carlos tried five times to reach Wilfredo while attached to the line. He was able to touch Wilfredo on three occasions, but was unable to bring him back to the surface. The tension on the line caused the line to stick, and the belayer was not able to remove the line from the carabiner in time to free them. Eventually he was successful, but it was too late.

Carlos and Wilfredo were washed out of the hydraulic and another guide jumped into the water to help. Carlos managed to untie himself and Wilfredo, and to haul Wilfredo up onto a rock ledge and start CPR, but he was not able to get a response. Carlos got out of the river and ran to make a phone call. The message was clear: there was an accident and Wilfredo had drowned.

At 12:09 PM, Efrain Mercado, the NCRC Caribbean Region Coordinator, responded and activated the emergency system. They escorted the 13 tourists out of the cave and then returned to recover Wilfredo's body. The recovery ran smoothly, the way they knew Wilfredo would have liked it to progress. They stopped at 4:00 PM and had a minute of silence to honor him.

Efrain Mercado, NCRC Winter Meeting, *Caribbean Region Report*, 3 February 2007

Gerald Lamb, *endi.com*, "Fatal tour of espeleologo." 21 November 2006

Comments: Water is a very powerful and unstoppable force and should always be treated with respect. Wilfredo had finished his NCRC IQ level in Aguadilla in April 2006.

The next 15 days were hard on the rescue team and some sought post trauma assistance.

23 November Clay Cave, West Virginia stuck, no injury, aid

Katelyn Mallabone (17) was taken on her first caving trip by Leslie Lubaczewski and Tom Carrow. The cave was thought to be a good beginner's cave due to its small size and lack of difficulty. Katelyn was moving through a passageway that requires some canyoning about 50 feet inside the entrance, when she slipped down and into a lower portion of the passage. She became pinned between a sloping right wall and a rock spur on the left wall.

The Bluefield Virginia Fire and Rescue responded to the 911 call. They were able to chisel away some of the impinging rock spur and cut away excess clothing to make her "smaller." The cavers on the original trip were "allowed" to help in the rescue, and Leslie chimneyed above Katelyn and pulled upward with a webbing sling placed under Katelyn's arms.

Leslie Lubaczewski, *Incident Report*, 26 November 2006
unattributed, *WVVA-TV 6 News*, Bluefield WV. "Thanksgiving Day Rescue." 23 November 2006

Comments: This could have been a self rescue with a caver with more experience. In addition, a call to another caver to come out with a hammer and chisel could have freed the trapped caver. It was also mentioned that the local media hyped the minor rescue.

25 November Bear Hollow Rift, Alabama stranded, exhaustion, no injury, aid

Eight cavers, including Andy Zellner, Jim Smith, Bill Steele, and Jay Jorden, entered the cave together and proceeded to the bottom, descending a series of pits and climbdowns. The cave is physically demanding, with tight, narrow passages and crawlways in addition to the pits. The third pit (45 feet), located about 100 feet into the cave, has a narrow and undercut lip with a protruding horn of rock that impedes the caver's movement. Some of the cavers, including Jorden, had difficulty negotiating the lip on the way in. Smith tied a two-step etrier of one-inch tubular webbing and left it clipped to a bolt at the drop to provide some aid. Beyond the pit, a wet crawl leads to additional drops and climbdowns. Jorden, who was wearing a wetsuit and dragging a large pack, moved slowly and the group to wait for him at times.

The cavers separated into two groups at the bottom of the cave. Zellner, Smith, Steele, and Jorden planned to spend several hours surveying before heading for the surface. The other four decided to return to the surface. They invited Jorden to accompany them, but he declined, stating that he would help with the survey for a while and then start out ahead of the remaining three cavers. The four exiting non-surveying cavers reached the surface at 6:15 PM.

Some time later, Jorden decided to start out by himself while Zellner, Smith, and Steele wrapped up their surveying. When the three remaining surveyors completed their work, they made their way toward the entrance and eventually caught up with Jorden at the 45-foot pit. Jorden was having difficulty at the top, and could not get over the lip and into the crawl beyond. The protruding rock horn made the lower part of the passage into a fissure too small for him to pass, and he could not get his upper body above and past the obstruction. Jorden was using a Ropewalker System with a chest roller plate. Even by standing on the etrier he was unable to make the transition from the climbing rope to the crawlway. The cavers began trying everything they could think of to help Jorden negotiate the top of the pit, including changing his climbing system to a Texas System for more freedom of movement. After three hours of unsuccessful effort, Jorden became fatigued and descended to the bottom of the pit. While Jorden rested, Smith, Steele, and Zellner climbed the final two drops (10 and 25 feet) and exited

the cave. They returned with a jacket, dry clothing, food, and water. Jorden changed out of his wetsuit and settled down to wait. Steele and Zellner hiked to the vehicles, decided Jorden could get out if the rock horn was removed, and called Bill Putnam at 4:15 AM. The Chattanooga/Hamilton County Cave and Cliff Team and the Jackson County Rescue Squad responded.

Rescuers took equipment, including hammer drills, a bolt kit, and rock-shaving kit to remove the horn. They entered the cave at 8:50 AM and quickly made contact with Jorden who was waiting at the bottom of the pit. He was uninjured and in reasonably good condition.

The rescuers removed the horn by drilling a series of holes with the hammer drill and using the rock-shaving kit to split away the stone. They then set a bolt to allow better access to the crawl from the rope. Jorden reached the surface at 10:55 AM, tired but uninjured, just over 24 hours into the trip.

Bill Putnam, *Incident Report*, 26 November 2006

Buddy Lane, email to Bill Putnam, "Thanksgiving Weekend cave Rescue." 28 November 2006

unattributed, *Chattanooga*, "Local Squad Rescues Stranded Texas Man In Alabama Cave." 28 November 2006

Comments: All three cavers interviewed independently reported that Jorden appeared to be "out of shape" and "out of practice" with his ascending system. Jay did know how to change over and descend, and had the energy to complete this. The Ropewalker system was not the best vertical system for these conditions.

25 November Sloans Valley Cave, Kentucky fatality, caver fall

Chris Webb led a trip with Edward Martin (40), and Douglas Meyer (33), and four others into Sloans Valley Cave around 3:30 PM, from the Garbage Pit Entrance. They explored part of the cave and decided to leave. The group split into two groups, as some thought the shorter route (that Martin was taking) was too dangerous. The three cavers ahead of Martin made the climb up 56-foot "Screaming Willy" pit safely, but Martin, last in the group of four, slipped and fell between 12 and 25 feet (reports vary) near the "Keyhole." He was not wearing a helmet or harness and had a hand-held flashlight. It was about 6:30 PM. He peeled backward and landed on the back of his head and neck, causing a basal skull fracture and resultant hemorrhage. Those that had exited went to report that Edward had fallen and that a rescue was necessary. Though reported in the media that CPR was performed, there is no indication that this occurred.

Cavers camped nearby were notified by the landowner of the fall and responded immediately. Don Franklin of the Pulaski County Rescue Squad coordinated the body extraction and the team placed a helmet on the body for transport.

John LaMar Cole, email, "Re: Sloan's Valley Cave Accident 25 November 2006." 18 December 2007

Staff Report, *Lexington Herald-Leader*, "Cave explorer falls to death attempting risky exit." 27 November 2006

Staff Report, *Cincinnati Post*, "Price Hill man dies in cave accident." 28 November 2006

Andy (NSS 45709), *CaveChat*, "Re: Caver Dies in Sloans Valley Cave." 3 December 2006

No author, *The Cincinnati Enquirer*, "Cave fall kills Cincinnati man." 27 November 2006

Comments: This had been an annual Thanksgiving weekend trip for the group for 10 to 12 years. Chris Webb and the group had been warned repeatedly by cavers about the dangers of caving without helmets. Edward was still caving after this long period without a helmet. The "Screaming Willy" Entrance has been closed to cavers due to the incident.

2 December Viking Cave, Alabama stranded, inadequate equipment, aid

Ethan Lithgow (18) and Jonathan Gladden (21) had gone into the cave around noon with a dynamic rope, but with no rope pads, racks, or organized climbing systems other than prussic knots. They had no helmets and had been in the cave several times before as a family friend owns the land. The cave has some very tight passage near the entrance with vertical climbdowns of 14, 7, and 12 feet. This was followed by a tight vertical fissure and drops of 40 and 29 feet. Ethan is 6 foot tall and weighs 200 pounds. The two cavers bottomed the cave and started back out, with both of them successfully getting-up the 29-foot pit. However, the prussic knots were slow for Ethan, so he used a pulley and cam system for the 40 foot pit. Jonathan ascended this pit first, followed by Ethan.

About 25 feet off the floor Ethan became tired, could not continue, and could not change over. Jonathan tried for 30 minutes to help Ethan, but was unsuccessful so he went for help. The call went out at 10 PM and Jonathan led firemen to the cave, and started in at 10:15 PM.

Michelle Edwards with the Marshall County Rescue reached the cave at 11 PM and Jonathan took her to Ethan. Other rescuers tried to follow, but most would not fit. Michelle found Ethan still hanging in his seat harness, semi-conscious, and hypothermic. A small waterfall was trickling on him and he could not feel his legs. Michelle tried to do a pick off but could not get Ethan's weight off the rope. Kevin Arits of the Brindlee Mountain Fire Cave and Cliff Team, and Kevin Perry, Paramedic with Marshall Medium Rescue Team, were the only others able to make it through the squeezes. The three rescuers were working on a Z-rig hauling system (3 to 1 M.A.) when Sabrina Simon arrived to help. The four cavers were able to get Ethan up and into the crawlway at the top of the 40-foot pit and started trying to warm him. He had been hanging in the harness between four and five hours, was semi-conscious, hypothermic, exhausted, and suffering from compression syndrome.

IV attempts were unsuccessful. Heat packs and blankets were applied. Efforts were made to widen the passage constrictions leading to the entrance. Ethan's jeans and shirt were removed and replaced with a polypropylene top and pants, socks, and a cap. He became more responsive as he warmed up. Three bottles of oxygen and later, food and water were given. Rigging on the surface was set up with a rebelay in the cave through

another, less constricted route with a 24 foot climb. Ethan was not packaged in stretcher due to the tight passage. His harness became the primary attachment point and the slow process began to extract him. He reached the surface at 9 AM after many hours underground

Jeff Burns, *Incident Report*, 2 December 2006

Bill Putnam, Interview with Jeff Burns, 2 December 2006

Bill Putnam, Interview with Jonathan Gladden, 4 December 2006

Bill Putnam, Interview with Brian Bailey, 4 December 2006

Sabrina Simon, brinabat.blogspot.com/2006/12/endurance-caving.html, 2 December 2006

Comments: Ethan spent four days in the hospital where, it was confirmed that he suffered from compression syndrome. Seven rescue teams responded but only small rescue team members were able to reach the patient. Edwards is to be commended for her efforts to do a pick-off, but it is a very rare caver who can get a 200-pound caver switched-over to a descent and to the bottom of the drop, particularly in wet conditions. With only four cavers (particularly of small size), it is very much to their credit that they were able to haul Ethan to the top of the drop. They most assuredly saved his life by doing so.

2 December Pettijohns Cave, Georgia overdue, aid

A youth group pastor, assistant and eight children entered the cave between 11:30 AM and noon, planning to go to the Waterfall and back. They were reported overdue when they did not return by 9 PM. The Walker County Cliff-Cave Rescue responded and located them approximately 1 AM Sunday morning. They were moving slowly but were not lost. Some of the kids were tired and had not eaten in 13 hours. They exited the cave with assistance, but would have made it out on their own in a few more hours.

Bill Putnam, notes, 2 December 2006

Comments: Food. If you get tired, eat. If you get cold, eat. To the credit of the leaders, they slowed the pace of the group to allow them to exit safely.

7 December South Pittsburg Pit, Tennessee stranded on rope, aid, no injury

Robert Davidson (33) and Frank Maynard (36) decided to bounce the 160-foot-deep South Pittsburg Pit using a 210-foot rope. Before 11:00 AM, Robert rappelled first and about halfway down, discovered the rope did not reach the bottom. He attempted a change over to his Ropewalker System. He attached the quick attach ascender (QAS), then removed his rack and hooked up his ascenders, but failed to attach the chest harness roller. The weight of the backpack on his back forced him to lean back so far that he could not reach up to the QAS. There were no other cavers at the pit, so Frank dropped a second rope and descended. He was unable to correct Robert's position, so he ascended and called for help.

South Pittsburg Volunteer Fire Department responded quickly. They lowered a rope and Robert was able to attach it to his harness. Frank rappelled back down to the lip to help get Robert and his gear over the lip. Five South Pittsburg firemen hauled him up with a straight pull, still in the inverted position, and he reached the top at 1 PM. Robert escaped with some minor bruising.

Bill Putnam emails from Frank Maynard, 10, 11, 13, and 17 December 2007

Buddy Lane, notes, 11 December 2006

Brett King, *Marion County News*, Mountain Rescue, 14 December 2006

Comments: Robert had two years of vertical experience and Frank had four years experience. They were equipped with proper vertical equipment, but several things contributed to this incident. The pit depth is measured from the lip, and the rig point is 40+ feet up the slope. Robert did not tether his pack below his seat harness, and he failed to connect his chest roller. When inverted, he did not drop his pack or tie it to the rope below.

9 December Hoya de las Guaguas, San Luis Potosi, Mexico fatality, caver fall, detached from rope

Alejandro Vera Morales (43) was participating in the last day of a technical caving course of the Asociación de Montañismo y Exploración of the UNAM, to Hoya de las Guaguas. There were 28 in attendance and Alejandro was an instructor. Guaguas has a 150-meter (490-foot) entrance pit. On Saturday, the ropes were rigged and members rappelled in. Alejandro was the last person to go in. During his rappel, he became detached from the rope and fell from somewhere near the top. He died instantly.

EspeleoRescate Mexico and the Cave Rescue Division of the Red Cross of San Luis Potosí responded. At 1:30 PM Sunday, their ropes were rigged and the body reached the surface at 4:20 PM, followed by the remaining persons.

Manuel Casanova, *Montañismo y Exploración*, "Accident in the Sótano de Guaguas." 11 December 2006
unattributed, *El Sol de San Luis*, "'Explorer' dies after falling 150 meters." 11 December 2006

Héctor Manuel Espinoza, *El Mañana de Valles*, "Tourist killed in Sótano 'Las Huahuas'." 13 December 2006

Comments: As the senior instructor, Alejandro was rappelling last. Examination of his harness showed his carabineer was not locked. Everyone should have someone independently check your gear whenever possible. If you are alone, double check your gear.

10 December Turtle Graveyard Cave, Tennessee caver fall, inadequate equipment, injury, aid

Dustin Braden (21), his twin brother, and five others (ages 14 to 26) had been exploring caves for the past two months. At about 1 PM they had tied a rope to a tree, climbed down and explored for several hours. When it was time to go one member climbed out and Dustin followed. Dustin lost his footing a few feet from

the top, could not hang on, and fell about 45 feet towards the other five who were standing on a ledge below. His brother tried to catch him, but they both fell another 30 feet. Dustin hurt his back, left hip and left leg. Some of the others made it out of the cave and went for help.

The Anderson County Rescue Squad and two fire departments responded at 6 PM. The rescue team members were lowered into the entrance, immobilized Dustin, packaged him in a stokes litter, and hauled him to the surface. He was helicoptered to the University of Tennessee Medical Center and the remaining party members were hauled to the surface.

Catharyn Campbell, *WATE News 6*, "Man recovering after falling 75 feet into dark cave." 11 December 2006

News Sentinel Staff, *Knoxville News Sentinel*, "'Lucky fellow' identified after fall in cave." 11 December 2006

Bob Fowler, *Knoxville News Sentinel*, "Brotherly love tested", 12 December 2006

Comments: The party had none of the standard caving equipment or training ... let alone vertical gear. Dustin's brother, Justin, was able to slow his fall enough that the injuries were not greater. Dustin wants to continue exploring caves but his wife said he is not going back.

29 December

Antonia Pit, Missouri

fatality, caver fall, inadequate equipment

Dave Wiegand (45) had spent time looking for arrowheads and other artifacts in a nearby 30-foot-deep cave. He had heard there

was a bigger cave around and he looked for it and found it. When he came back with a rope, his wife, and three friends, he tied his rope to one of the barbwire fence posts around the cave entrance and started hand-over-handing down the rope through the triangular, manhole-sized hole. Dave had left his flashlight in a pack on the surface. He also had no helmet or light. His wife stayed in contact with him by calling to him until he did not respond. The 71-foot pit reaches a ledge and then there is another 30 foot drop. The rope did not reach the bottom.

Wiegand's wife went for help about 3 PM saying, "Dave's stuck in a hole." Jefferson County sheriff's office and several fire departments arrived and reached Wiegand between 4 and 5 PM. He was "unresponsive." The body was pulled to the surface.

Christine Byers, *St. Louis Post-Dispatch*, "Explorer found dead at bottom of cave." 30 December 2006

Alex Fees, *KSDK News*, "Man Dies After Falling At Least 75 Feet Into Cave." 30 December 2006

Jo Schaper, email, 30 December 2006

Comments: It is speculated that he fell off the ledge due to lack of light. Need it be said that people should not hand-over-hand down a rope without a light where they can not see the bottom?

Common Caving Mistakes and Consequences

1. Primary light failed; did not carry backup lights, or backup lights inadequate – stranded.
2. No map, no guide, and poor route-finding skills – lost.
3. Wore inadequate or inappropriate clothing for conditions – hypothermia.
4. Did not bring extra clothing – hypothermia.
5. Moving but not paying attention – caver fall.
6. Free-climbing more than a body-length without belay – caver fall.
7. Traversing above drop without belay or safety line – caver fall.
8. Ignored rainy weather forecast; entered water cave – flood entrapment or drowning.
9. Careless movement in tight passage or crevice – stuck.
10. Entered bat cave or passage without precautions – histoplasmosis.
11. Solo caving and something went wrong – stranded.
12. Did not tell anyone of plans – delayed rescue by hours or days.
13. Did not clear loose rocks from lip – struck by falling rock.
14. Climbing or descending rope hand-over-hand – lost grip and fell.
15. Climbing cable ladder without belay – fell off.
16. Lost control of rappel; no bottom belay or rappel safety – fell to the bottom.
17. Out of shape or unfamiliar with climbing system – stranded on rope.
18. Did not know how to change from rappel to climb or from climb to rappel – stranded on rope.
19. Hair or clothing stuck in rappel device; did not know how to recover – stranded on rope.
20. Rappelling without wearing climbing system – stranded in pit or on rope.
21. Attempted pull-down trip without map or guide – stranded.
22. Sharing vertical gear; lost equipment passing it up or down the pit – stranded.
23. Did not tie a knot in the end of the rope – rappelled off the end and fell.
24. Moving around lip of pit without being belayed or being on rope – fell into pit.
25. Did not check attachment of rappel device to harness – became detached from rappel device and fell.

2006 Cave Diving Accident and Incident Reports

14 June

Blue Springs, Florida bad air, lost consciousness

Taylor Smith (17) was free diving in Blue Springs because "it's a lot more hard-core (than scuba-diving)." He found a pocket of air, took a breath, and suffered a seizure on his way back to the surface. His younger brother Wesley dragged his unconscious body from the water and started CPR, saving his life. In another account when he surfaced, he began coughing up blood. Taylor was rushed to a local hospital for treatment in a hyperbaric oxygen therapy chamber.

unattributed, *www.local6.com, Internet Broadcasting Systems*, "Teen Injured After Sucking In Diver's Carbon Dioxide." 14 June 2006

Willy Volk, *Divester*, "Teen fighting for His Life After Breathing Scuba Diver's CO₂, Update." 7 August 2006

Willy Volk, *Divester*, "Teen fighting for His Life After Breathing Scuba Diver's CO₂, Update." 15 June 2006

Comments: Their mother is an avid, certified diver. His younger brother saved his life. Taylor professes to want to continue the sport.

15 July

unnamed cave, Chassahowitzka River, Florida fatality, inadequate equipment

Four friends decided to go snorkeling and free diving into small caves in the Chassahowitzka River. At 3 AM, Jason Boyette (22) was last to take his turn with the single set of gear and a flashlight. He never came up and his friends called authorities at 3:30 AM after searching from the surface.

Sheriff's Office divers found the body stuck in the cave at 9 AM. The tunnel was small and was only 10 to 12 feet long and two feet in diameter. Boyette had to pass through one of three holes to get to the tunnel.

Moises Mendoza, *St. Petersburg Times*, "Man drowns in underwater Chassahowitzka cave." 16 July 2006

unattributed, *Associated Press*, "Man dies in Fla. Snorkeling accident." 17 July 2006

Moises Mendoza, *St. Petersburg Times*, "Diving in caves requires training." 19 July 2006

Comments: None.

2006 Caving-related Accident and Incident Reports

4 March

Unnamed cave, San Diego, California surfer trapped in cave

A 53-year-old surfer was pushed by waves into a cave entrance below the Sunset cliffs near San Diego. Another surfer flagged down lifeguards about 1 PM and relayed the problem. A lifeguard went out to Osprey Point, dove off the cliff, and located the surfer. "(The surfer) was getting thrown around as if he was in a washing machine." After getting picked up by a surf boat, the surfer was treated for cuts and scratches and released.

SignOnSanDiego News Service, *www.SignOnSanDiego.com*, "Surfer rescued off Sunset Cliffs." 4 March 2006

Comments: None.

6 April

unnamed Mammoth Mountain gas vent, California multiple fatalities, bad air, fall

Four ski patrollers, including Walter Rosenthal (58), John "Scott" McAndrews (37), and Jaymes Juarez (35), were on a Mammoth Mountain ski patrol, repositioning a protective fence around a gas vent at about 10,000 feet in elevation. Rosenthal was a snow hydrology expert and researcher for the University

of California Santa Barbara. Heavy snows had left only the top foot of the 4-foot fence exposed. Two of the four broke through the snow and fell 21 feet into the six foot wide opening to the vent. The other two patrollers saw them fall and came to help, but one of them also fell in. The fourth patroller used a rope to lower himself into the hole but was overcome by gas. Three other responders arrived and pulled him out and he survived. It was not determined whether the gas had killed the other three, the fall, or a combination of both. The gas in the vent was suspected to be carbon dioxide but was not confirmed. CO₂ had been linked to tree die offs in the area.

The four ski patrollers were hospitalized for CO₂ exposure and recovered.

Brendan Riley, *San Diego Union-Tribune*, "Mammoth Ski Patrol members die in fall in volcanic gas vent." 7 April 2006

Brandan Riley, *San Diego Union-Tribune*, "Poison gas may have killed ski patrollers." 8 April 2006

Comments: Two of the fatalities had head lacerations. The heat from the vent probably eroded the snow so it did not support the weight of the patrollers. The lesson to be learned for cavers is that the bad air that incapacitates one person will also incapacitate the rescuer. Be careful!

8 April
Rt 276 Quarry Cliff Face, North Carolina
stranded on rope

Flittermouse Grotto held a vertical training at a quarry face near Sliding Rock where they had rigged two ropes. Sandy Sherlin (45) was alone at the top of the 80-foot cliff with the rest at the bottom when she backed over the lip. She slipped and instinctively grabbed the rope above the rack with her right hand. The lip is undercut, wet and slippery with no foot holds below. This caused her hand to be trapped between the loaded rope and the rock.

Expressions of pain were relayed to those below, so Scott McCrea got on the other rope and ascended up next to Sandy and pulled the rope off Sandy's hand. She was able to complete the rappel where the group applied ice. Sandy recovered fully.

Scott McCrea, *Incident Report*, 8 April 2006

21 April
unnamed cave, Tobago
fatality, cause unknown

Shiva, aka "Swami," had been living in the cave some 30 years and was a well-known character on the island. The cave is located some 25 feet above sea level on the Arnos Vale coast and a recon was made after fishermen complained to a security guard about a stench coming from the cave. Shiva was dead. The man, who was always a gentleman, had last been seen the month prior, but had not been looking well.

Jerry Ali, Tobago News, "'Cave man Swami' found dead." 21 April 2006

14 July
Two Door Cave, Hawaii
stranded kayakers

A 41-year-old woman and her 15-year-old niece were trapped in the back of Two Door Cave on the Na Pali Coast while in their kayaks. Fire rescue crews used personal watercraft to make the extraction in rough water and then transferred the two women to an inflatable boat. They only received a few scratches from the incident.

Advertiser Staff, *Honolulu Advertiser*, "Kayakers rescued off Na Pali Coast." 15 July 2006.

12 August
Rusty's Cave, Georgia
dog rescue from pit

Ricky DuPriest (26) and Kirk Williams (27) were walking up to Rusty's Cave when they heard a howl. Ricky rappelled in and found a dog. It had probably been in the cave about a week as its ribs were showing through the coat. Ricky harnessed the dog and Kirk pulled it up. They fed the dog some left-over MREs and then the dog ran off down the trail. They could not find it after a brief search.

Ricky DuPriest, *Incident Report*, 12 August 2006

30 August
unnamed Cave, Kentucky
horse rescue from pit

Ruby, a 1,200- pound Belgian workhorse, fell into a 28 foot deep cave near Radcliff while grazing. A veterinarian gave her a muscle relaxer followed by an anesthetic. After 30 minutes of unconsciousness, she was lifted to safety with a crane. Other than a minor amount of blood on her legs and muzzle, she was fine.

unattributed, *Courier-Journal*, "Horse falls into 28-foot-deep cave, is pulled to safety by rescuers." 1 September 2006

Comments: I would be concerned about going into a pit with a 1,200 pound potentially injured horse.

Report accidents and incidents via the Internet at
www.caves.org/pub/aca

or mail reports and information to:

American Caving Accidents
National Speleological Society
2813 Cave Avenue
Huntsville, Alabama 35810-4431

The National Cave Rescue Commission

The National Cave Rescue Commission (NCRC) is a volunteer group developed to train cave rescue personnel throughout the United States. It is part of the National Speleological Society, located within the Department of the Administrative Vice-President.

The NCRC does not perform cave rescues. It organizes, develops, and provides training in cave rescue techniques, maintains lists of individuals trained in cave rescue, and can help locate rescue resources in times of need. Most NCRC-trained cavers do participate in rescues, but not as part of the NCRC. They work as members of their local rescue teams, civil defense units, or cave rescue groups.

The NCRC also works to:

- Maintain good working relationships with other rescue-oriented individuals, organizations, government agencies, and sources of specialized equipment and services (e.g., the Air Force Rescue Coordination Center and the Center for Mine Safety and Health Administration).
- Maintain current files of potentially useful equipment (e.g., underground communications equipment and cave-oriented medical kits) and services that can be obtained through the above sources.
- Acquire and maintain a limited supply of certain equipment, such as special rescue litters and vertical rescue gear, in key locations throughout the country.
- Increase the number and proficiency of cave rescuers across the United States by sponsoring training sessions and seminars, and by encouraging other caving, rescue, and EMS organizations to sponsor such educational programs.
- Encourage international cooperation by developing contacts with cave rescuers and rescue agencies in other countries, by pre-planning with these groups where US involvement is anticipated, and by inviting participation of cave rescuers from other countries in NCRC seminars.

Organization

The NCRC is led by a Board of Regional Coordinators which includes a National Coordinator, Training Coordinator, Medical Coordinator, and Diving Coordinator (each of whom coordinates resources and activities at a national level), and Regional Coordinators for each of ten regions in the United States and its territories. Board members are nominated by cavers and cave rescue personnel, and are appointed by the NSS Board of Governors. The NCRC depends on many volunteers without

official positions whose special knowledge, talents, or contacts make the network more effective.

Training

The NCRC sponsors a week-long Cave Rescue Operations and Management Seminar each year that is held in various locations around the United States. The seminar serves as a "boot camp" of cave rescue and provides three levels of training. Cave rescue is constantly evolving, and the most up-to-date techniques are presented each year. In addition to the annual national week-long seminar, the NCRC regions sponsor regional week-long seminars, regional modular seminars (taught over a series of weekends), courses in small-group and self-rescue techniques, and weekend cave rescue orientation courses.

NCRC seminars consist of extensive classroom and field work designed to maximize the learning experience. The seminars include lectures, demonstrations, and field exercises on underground environments, vertical rescue, mechanical advantage systems, extrication techniques, basic medical principles, communications, and the management of cave rescue operations. Emphasis is placed on practical skills and techniques, with realistic exercises in a variety of cave environments.

The seminars provide basic and advanced material for students who typically include cavers, emergency services personnel, and emergency managers. During the eight days of a seminar, students receive about 100 hours of instruction, and are on the move from early morning well into the evening. The NCRC uses and teaches the Incident Command System (ICS) used by fire departments, rescue squads, and other emergency agencies and services.

Course Listings and Contact Information

Information on NCRC operation, activities, and training, including contact information for NCRC Coordinators, is published each year in the *NSS Members Manual*, and is also available on the NCRC website at www.ncrc.info. Upcoming seminars are announced on the web site and in the *NSS News*.

National Cave Rescue Commission Course Listing and Contact Information:

www.caves.org/io/ncrc

