

The Underground Experience: Getting It Together

A Beginners Guide to
Responsible Caving

by

*Ralph Johnson
Kathy Blum*

*Laura Boehle
Tom Pollock*



The Central New Jersey Grotto
21 Kingsley Way
Freehold, Nj, 07728

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*Edited and Revised By
Ralph Johnson, Jenna Pesano*

FOREWORD

This manual was inspired by an accident that occurred in May 1985 in Norman Cave, West Virginia, which involved several members of the Central New Jersey Grotto and a novice caver. It was a serious accident that thankfully was not fatal, due in no small part to a lot of luck and a concentrated effort on the part of some CNJG cavers. The extrication was efficiently carried out, and in the words of the attending physician, "with no indication of any aggravation to the injuries". It was a day of lessons. For the cavers, a lesson in how quickly events can happen, and how serious they might be. For the victim, a realization of what a caving "team" means, and why a "team effort" is essential.

The independent actions of the novice endangered not only himself, but the rest of the caving group as well. It is hoped that cavers, both experienced and novice, will accept and heed the advice contained herein. It is equally hoped that the Central New Jersey Grotto will continue its efforts to bring awareness of the underground world with its views of beauty, its sense of fragility, and its need for conservation to the public and cavers alike.

Kathy Blum
Quakertown, PA



INTRODUCTION

Welcome to the Central New Jersey Grotto!

Instructing the novice caver in basic safety and conservation is a fundamental responsibility of all sport caving groups. The CNJG is committed to fulfilling this function. It is sincerely recommended that you carefully review the rules and regulations set forth in this guide before going caving. If you have any questions, please do not hesitate to ask CNJG members. They will be happy to assist you. Experienced cavers are always your best source of information.

Have a safe and enjoyable trip!



CONTENTS



Safety

Never Cave Alone	4
Caving As a Team	5
Proper Caving Gear	5
Have a 'Call Out' in place	5
Physical Condition	6
No Drugs or Alcohol	6

Hazards

Falls	7
Falling Objects	7
Hypothermia	7
Getting Lost	8
Entrapment	8
Flooding	8

Equipment.	9
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Conservation

Do Not Break or Handle Formations	11
Avoid Littering Inside or Outside of Caves	11
Do Not Write on or Mark Cave Walls	12
Protect Cave Life	12
Do Not Advertise Cave Locations	12
Do Not Tamper With Cave Gates	12
Practice Caving Etiquette	13

Landowner Relations

Always get Permission	13
Maintain Good Relations	13
Respect the Owners Property	14
Don't Wear Out Our Welcome	14

SAFETY

This section is not intended to be the final word on safety. Trips of greater than average challenge, long duration, or those requiring vertical work involve safety techniques not covered here. This information can be obtained from publications such as “Caving Basics” available through the National Speleological Society bookstore and from CNJG vertical training sessions. Some of the following rules and recommendations may seem rather strongly worded, but it is better to get your attention now than risk the trauma of a caving accident on a future trip.

1. Never Cave Alone

Caving alone is foolhardy and dangerous. In the event you are seriously injured or lost, who will find you and when? If you are an aggressive-hero type individual with an inflated ego, you probably should not be caving, as you will be a danger to yourself and anyone with you. Would be cavers who are too smart to listen to advice, or too proud to accept a helping hand have been the cause of many caving accidents including the one mentioned in the forward of this guide.

Caving is a non-competitive group activity. It is an interdependent team of people exploring an alien and potentially hostile environment. As a team member, your attitude is all-important. A well developed sense of cooperation, comradeship, and humility are great assets underground.



2. Caving as a Team

There should be a minimum of four cavers on a team. In the event of an accident, one can stay with the injured person, and two can go for help. The maximum number on a team is about eight. Teams larger than this tend to be slow, and difficult to manage. A large group of cavers can be divided into smaller teams to explore separate sections of a cave system, or different caves in the same area. Each team is headed by a trip leader. He or she should be an experienced caver, familiar with the area, and the cave being visited. Although most decisions made during the trip are reached by consensus, the final word belongs to the trip leader. This is understood and accepted by all team members.

The team should move as a unit and only as fast as the slowest member. Stopping periodically for rest and a head count is a standard procedure. Don't wander off. Stay in voice contact with your teammates. A fragmented team with poor communication is an invitation to trouble. Be especially aware of the status of the caver behind you, and be ready to assist them if need be. Any temporary division of the team should be agreed upon in advance, with a set time and place for rejoining. Again, **no solo caving**. Use the buddy system.

As a team member, do not feel obligated to do something just because the caver in front of you did. Use your own judgement, there are usually several ways to overcome an obstacle. If you think a particular move looks too risky, **don't do it**. Your decision will be accepted and respected by the team.

3. Proper Caving Gear

All caving trip participants **must** be equipped with basic caving gear. This includes a helmet with a four point chin strap, helmet mounted light source, at least three separate light sources, and boots with lug soles. See the equipment section of this guide for more detail.

4. Have a Call Out in Place

Let someone on the outside know what caves you are visiting, and when you plan to be out. Set up a time when you will call them after your team exits the cave. If they do not hear from you, rescue can be summoned.

Contacts for Caving Emergencies

The following numbers are for National Cave Rescue Commission emergency contact only. Listed are contacts for typical CNJG destinations. For other areas please call Kevin Psarianos **prior** to your trip at 609-890-0962.

NJIRT (For NJ and immediate surroundings): **877-738-1936**

Eastern Region NCRC (VA, WV, PA, NC, MD, DE, NJ): **804-674-2400**

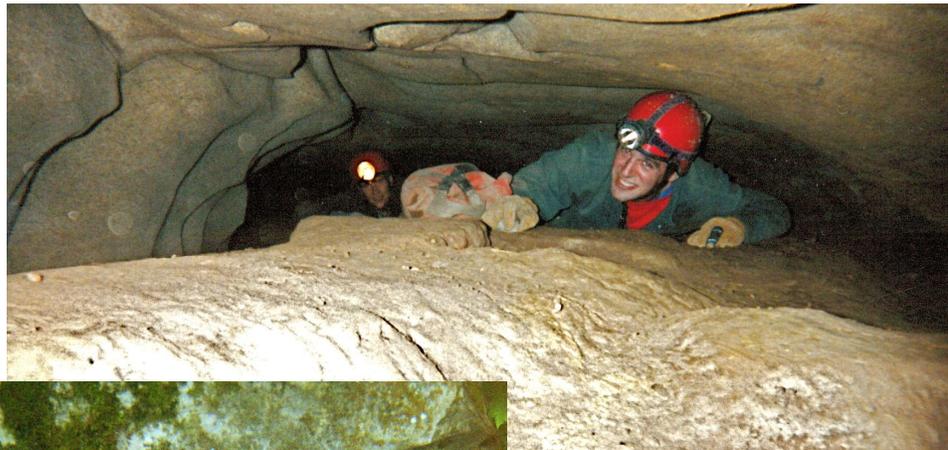
Greenbrier County EMS: **304-647-7911** (or 911 in Greenbrier County)

5. Physical Condition

You don't have to be Arnold Schwarzenegger to go caving, but you should be in reasonably good shape. Caving is strenuous. A person in poor condition will tire more quickly, slow the team, and ultimately shorten the trip. Know your limits, and do not attempt trips beyond your capabilities. Beginners should start with shorter trips (2-5 hours) and work up to more challenging ones. If you have any doubts about the demands of a particular trip, ask your trip leader. Also inform your trip leader if you have any medical problems and/or if you are on any medications. People with claustrophobia (fear of small, enclosed spaces) or severe acrophobia (fear of heights) should not go caving.

6. No Drugs or Alcohol

There are no exceptions. For obvious reasons, caving under the influence is strictly forbidden and will result in your immediate ejection from the team.



Hazards

The intent here is not to scare or discourage the novice caver. However, a little apprehension before a cave trip is healthy. An awareness of possible hazards will help you avoid them. Caving as a whole has a better safety record than many active outdoor sports. Your chances of being involved in a serious accident on any well planned and organized trip are remote. This does not excuse apathy or carelessness. Above all, respect the cave and observe caution.

1. Falling

Falls are the most common type of caving accident. Slow down and watch where you are stepping. Running, jumping, and other fast moves are not recommended. Test handholds and footholds before committing yourself. Maintain three points of contact at all times when climbing, some climbs require the use of a handline or belay. Free climbing a rope up or down a hanging drop is foolish at best and fatal at worst. It cannot be done safely, so don't try it! Also, do not attempt dangerous traverses or vertical work for which you have not been thoroughly trained.

2. Falling Objects

Avoid unstable breakdown and very steep rocky slopes. Yell "ROCK!" if you dislodge even a small one. The same holds true for a piece of gear or any falling object: **warn those below you!** Also, do not stand directly under anyone doing climbing or other vertical work. Secure all loose gear to prevent it from accidentally dropping on someone.

3. Hypothermia (Loss of Body Heat)

Wear adequate clothing. The average temperature of most caves in the northeast is 50 degrees year round. A tee shirt, medium weight sweatshirt, jeans, and heavy wool socks under coveralls and boots will do for most caves. If you are not wearing coveralls, or the cave is wetter than usual, add another sweatshirt and/or thermal underwear. Do not over-dress. A heavy sweat now can become a chill later. Again, ask your trip leader about the conditions in the cave you are planning to visit.

Hypothermia can also be avoided by eating high-energy snacks such as candy bars, nuts, or fruits and drinking a lot of fluids before and during the trip. Conserve energy by pacing yourself and stopping to rest occasionally. An exhausted caver can easily become a hypothermia victim.

Trip leaders should look for signs of hypothermia in team members, especially novices. The symptoms include shivering, fatigue, numbness, stumbling, slurred speech, moodiness, and confusion. Any caver with these symptoms should be escorted from the cave as quickly as possible. A large plastic trash bag properly cut and worn as a shirt can help retard loss of body heat in this kind of emergency.

4. Getting Lost

If you become disoriented and separated from your team, **stay where you are! The team will find you.** Conserve your light by turning it off and making lots of noise. Low-frequency sounds carry farthest underground. Stamp your feet or pound a rock against the floor in addition to calling out. Having a loud whistle with you can save wear on your voice box.

Any cavers lost because of light failure should be embarrassed, to say the least. They are now stranded in total darkness until help arrives. **A minimum of three light sources per caver is mandatory for any cave trip.**

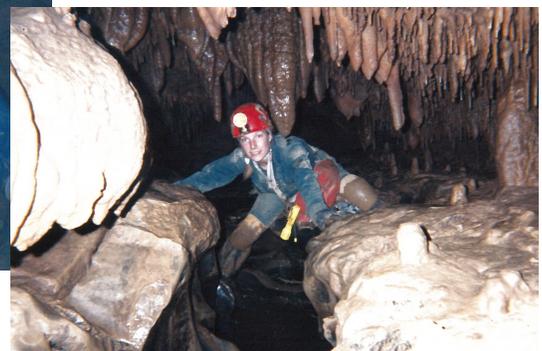
Again, whenever possible, leave word with a reliable party (the cave owner, grotto members, etc.) as to what cave(s) you are visiting, and when you plan to be out. A rescue effort can then be mounted if you are long overdue.

5. Entrapment

You can easily avoid getting stuck by using your “cat whisker” sense. Do not force yourself into tight places you cannot back out of, or where your teammates will be unable to reach you. Never go down a steeply descending tight passage head first. Going feet first will enable you to climb out if you can't get through or if it doesn't go anywhere.

6. Flooding

Some stream caves are subject to flash flooding during heavy rain. This can trap or even drown cavers inside. Always check the weather forecast before entering this kind of cave. If there is any doubt, visit an alternative cave.



Equipment

Like most sports, caving utilizes equipment to enhance performance, and prevent injury. The following is a brief list of basic caving gear. A complete and detailed description of equipment models and brands is beyond the scope of this guide. Any questions you may have may be referred to CNJG members, or your trip leader. They can recommend places to purchase gear, and instruct you in its proper use and maintenance. The more you use your equipment, the more familiar it will become. In a short time, preparing for a cave trip will be second nature.

Helmets and mounted electric lights can be borrowed from the CNJG for your first few trips. Eventually, you should purchase your own. Never plan to use your teammates as sources of spare parts and supplies while underground. **Each member of a team is expected to have enough equipment, food, and drink to fill his or her needs.** Note: all gear and clothing worn in caves will be subjected to mud, water, and very rugged conditions, so don't wear your Sunday best!

Mandatory Equipment

1. Helmet with four point quick release chin strap

2. Primary light source (helmet-mounted electric light)

3. Primary Light Power

Bring enough batteries for the duration of the trip, plus twelve hours.

4. Sidepack with Shoulder Strap or Backpack

The pack should be strong, durable, and large enough to carry the following items. Place all items in watertight, crushproof containers. Plastic flasks and tupperware sandwich boxes are recommended.

Pack Contents:

A. Secondary Lights

Bring at least three other sources of light, one of which is helmet mountable. Use waterproof flashlights taking D, C, AA, or AAA batteries. The batteries should be interchangeable with all of your secondary lights. Cyalume chemical light sticks or candles and matches in a waterproof container may be used as additional back up lights, but not a secondary light source.

B. Food and Drink

High-energy food such as candy, fruit, gorp, or peanut butter and jelly sandwiches are recommended. Gatorade or fruit juices can be substituted for water.

C. Small Plastic Litter Bag (For garbage. If you brought something in, bring it out.)

D. Large plastic trash bag

In an emergency, a trash bag can be cut and worn as a shirt to help prevent hypothermia.

5. Gloves and Kneepads

Gloves should be durable and fit hands snugly. Extra large wrestling kneepads or various kinds of construction knee protectors work well.

6. Boots and Water-Tolerant Socks

Hightop (for ankle protection) work boots or hiking boots with lug soles. **No sneakers or rubber boots.** Socks should keep feet warm when wet. Wool or neoprene work best.

Optional Equipment

1. Webbing

For use as a handline. At least 25 feet is recommended.

2. Coveralls

50/50% Cotton/Polyester mix with zipper front.

3. Balaclava or wool hat and/or extra thermal shirt

4. Thermal space blanket and/or hand warmers

For prevention of hypothermia in an immobilized accident victim

5. Whistle

Can be used for signaling during vertical work, or when lost.

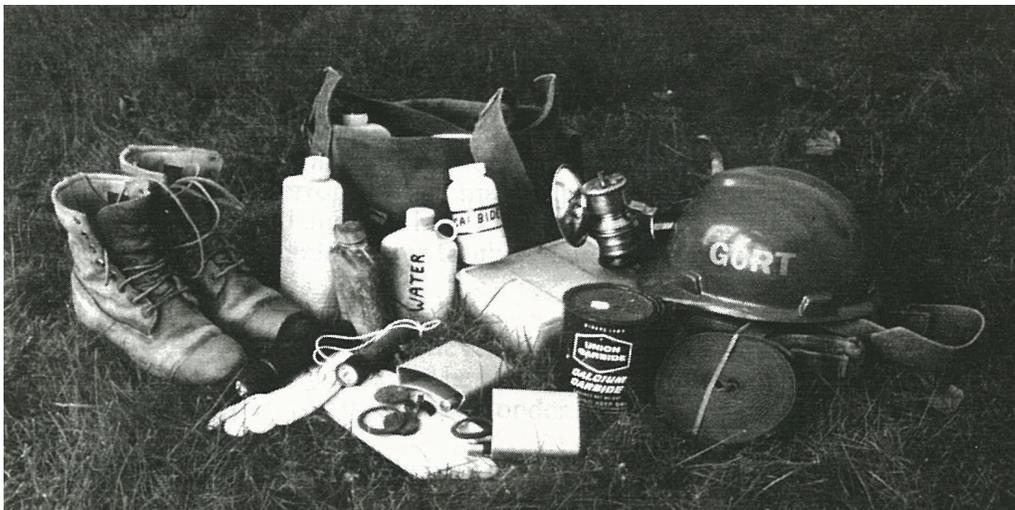
6. Small First Aid Kit

7. Retaining strap for glasses

8. Route markers (popsicle sticks with reflective tape)

9. Camera in shock/waterproof case

10. Watch



Conservation

The well-known environmental motto, "Take nothing but pictures, leave nothing but footprints, and kill nothing but time", is particularly appropriate in the caving world. The goal of conservation in caving is to protect and preserve caves for ourselves and future generations. Each year more caves once renowned for their pristine beauty are found stripped of their formations, littered with trash, and their unique life forms wantonly killed. It is left to the cavers of this generation to do everything in their power to stop the degradation of this natural heritage. Failure will mean the end of caving as a viable source of recreation and scientific research. **It only takes one careless instant to destroy or deface what took nature centuries to create. The damage cannot and will not be repaired in our lifetime, if ever. Please, cave softly.**

1. Do Not Break or Handle Formations (stalactites, stalagmites, flowstone, etc.)

This rule cannot be overemphasized. Vandalism is a crime! Many states impose a heavy fine and jail sentence on anyone caught deliberately breaking cave formations. The National Speleological Society posts a reward for any information leading to the conviction of a vandal. Members of the Central New Jersey Grotto would not hesitate to provide that information. If you feel the need to bring home a souvenir of your trip, invest in a camera. The CNJG has members who can teach you how to use it underground.

Formations should never be touched. Even the oil from your skin can stop formation growth. Leaving a muddy handprint on pure white flowstone is as much an act of destruction as breaking a stalactite. Careless feet do as much damage as careless hands. Avoid walking on rimstone, flowstone, and other floor formations. **Please, do not forget to watch your head.** Failing to duck at a critical moment can break low hanging formations.

Learning how to move in a heavily decorated cave is an art form in itself. It takes practice and discipline. Cavers have been known to step in each others footprints, or even go temporarily barefoot to avoid scarring nature's artwork. Slow down and move with great care. If there is a trail, stick to it. Pretending you are in a shop full of Waterford crystal may help, or even a minefield, where touching a formation means instant death. Do not use formations as handholds or footholds unless absolutely necessary; find another route if you can.

Having the chance to view the fragile beauty of an unspoiled cave is a privilege, not a right, and should never be taken for granted. The best protection for any cave is a deep sense of respect, wonder, and appreciation in those who enter it.

2. Avoid Littering Inside or Outside of Caves.

If you carried something into a cave, bring it out with you. Spent carbide, used batteries, candy wrappers, etc. should be stored in your pack and brought out to be properly disposed of. Spent carbide in particular must be carefully packaged in plastic ziplock freezer bags and removed from the cave. It is highly poisonous to cave life and livestock. Used batteries are also toxic to the environment and should never be carelessly discarded.

Leave the cave in better shape than you found it. Cavers are morally obligated to remove any litter that they find. CNJG members carry small trash bags in their packs for this purpose.

If nature calls while you are underground, find a secluded corner well off the beaten path. Dig a hole in soft dirt, use it, and fill it in. Make sure all wastes are thoroughly covered.

3. Do Not Write On or Mark Cave Walls.

Graffiti in caves is another form of vandalism. Please keep the cave walls free of personal embellishments. Nobody cares that you love Betty Sue or even that "you were here". And it isn't necessary to mark cave walls to find your way out. If you have an average sense of direction and keep your eyes open for unique landmarks, you shouldn't need any markers. If markers are required, use popsicle sticks with one end dipped in orange day-go paint. Place the sticks with the painted end pointing out. All marker sticks should be picked up on the way out of the cave.

4. Protect Cave Life

The cave environment is very fragile and the life forms it supports are rare and unusual. Some unique species inhabit only one particular cave. These creatures live in a world of perpetual darkness and are adapted to the constant temperature and humidity, thus making them extremely sensitive to any sudden environmental change. Exposing them to bright light or otherwise disturbing them should be avoided. Crickets, salamanders, or crayfish can easily be crushed by a careless step.

Bats are the most well known type of cave life. Do not disturb them, especially when they are nursing or hibernating. Some caves are closed at certain times of the year to protect endangered bat populations. Please observe and obey these restrictions. In most states, bats and all other cave life are protected by the law.

5. Do Not Advertise Cave Locations

Never give cave locations to inexperienced individuals or strangers. Caves visited by large numbers of untrained and unsupervised would-be-cavers are the ones most likely to be vandalized and ultimately closed by the owners. All too often these are also the sites of lost explorers and accidents.

You are responsible for the conduct and safety of the people you introduce to caving. It is every cavers duty to make sure novices are well coached in conservation and safety before they are led underground.

6. Do Not Tamper With Cave Gates

Cave gates may be installed for a number of purposes. Some examples are to prevent entry by non-cavers or livestock, for safety and liability reasons, or for conservation measures such as protecting bat colonies. Contact the owner or the local grotto for access information and the procedure for obtaining the key.

7. Practice Caving Etiquette

Conserving the caving experience itself is important. Do not forget that your companions often travel long distances at considerable expense to immerse themselves in the silence, serenity, and beauty that caves offer. Do not ruin their time underground with constant and excessive talking, singing, wise-cracking, etc. Be considerate. There is a time and a place for everything.

Landowner Relations

Landowner/caver relations are an essential part of cave exploring, especially in the eastern United States, where ninety percent of the caves are on private property. Owners have the right to grant or refuse access to caves on their land. Caving without permission is trespassing. There are many cases where legal action has been vigorously pursued including “trial by shotgun”. The list of closed caves constantly grows longer. Caves are sometimes physically closed by having their entrances filled or blasted shut. Usually it is the same sad story, another landowner fed up with thoughtless people who show no respect for them or their property. The following guidelines will help you gain access to most caves and keep them open for those who follow you. A little common courtesy is all it takes. Please make sure no caves are closed because of you.

1. Always Get Permission

Many caves are located in rural areas. Do not assume this means they are open to any and all. Getting permission is mandatory in most cases. Find out who owns the cave you are interested in. Often a local caver or grotto can help you make the proper contacts. Write or call in advance if possible, the owner will appreciate it! State your intentions (exploring, mapping, research, etc.), include the date and time of your visit and the number of cavers in your party. If you keep the group small (4-8 cavers), you will have a better chance of getting in. Be sure to mention that you belong to a grotto and/or are an NSS member. Many owners are aware of these organizations and allow access to members only. If the cave is located on land controlled by the National Forest Service, the National Park Service, or any state agency, a permit will be required. Again, write in advance and allow time for a response.

You may meet an owner who flatly says “NO”. Do not argue with them. Simply say “thank you”, and leave. Time and patience may change things. Its a good idea to have an alternative cave in mind. Check with the local grotto if you have any doubts about the status of a particular cave.

There are a few caves that can be entered without prior or direct permission. Be sure you know which ones they are. Do not make assumptions.

2. Maintain Good Relations

An owner likes to know who is visiting their cave. Introduce yourself and the cavers with you. Spend a little time saying hello. You may have to convince them that you are all

competent, conscientious cavers. Be sure to thank the landowner for their hospitality. Talk about some of the things you have seen in their cave. Copies of photos and cave maps are often appreciated. Do not enter the owners home with muddy gear, and do not disturb them late at night, unless there is an emergency. Find a private spot when changing clothes. Owners have been offended by some peoples lack of discretion.

3. Respect The Owners Property

Again, do not litter, and be especially careful with spent carbide and batteries. Leave all the gates as you found them. Many cave owners raise livestock, and do not want to spend their time chasing animals because you left the gate open. Find out where the owner would like you to park your vehicle. Be sure not to block their access. Also, avoid walking or driving over crop land.

4. Don't Wear Out Your Welcome

Pests are not appreciated. Visiting a cave too often can irritate the owner. If several trips will be required to complete an exploration or mapping project, let them know from the beginning. Many cavers do maintenance or repair work for the owner in return for extended cave access.



LASTWORD

In the end, it is your fellow cavers and the caves themselves who will be your best teachers. Your time with them will be as happy, rewarding, and safe as you make it. Good luck, and the very best of the underground experience to you.



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