

Checklist of Caving Equipment

Revised Dec 20, 2011 by Norm Berg with the assistance of other Central Connecticut Grotto (www.ctcavers.org) members. Please send suggestions on improving this checklist to info@ctcavers.org

This checklist is an overview of the items that should or might be brought along on a basic horizontal (no technical vertical climbing) caving trip lasting under four hours in the Northeastern U.S. What a person takes into the cave is dependent on many factors, such as conditions in the cave, time underground, the hike from the parking area to the cave, weather, and one's physical condition. Items in this list reflect various contributors' personal opinions and are by no means comprehensive for all situations. As technology advances, this list will need updating. Items are listed below followed by details and a caving courtesy section.

CLOTHING and PERSONAL GEAR:

Helmet
Headlamp attached to helmet
Flashlight carried with you
Undergarments (polypro underwear)
Knee pads
Middleware - shirt and pants
Coveralls or overalls
Thick socks
Boots
Gloves

YOUR CAVE PACK:

Spare headlamp
Spare batteries
Food
Drinking water
Large garbage bag

MISCELLANEOUS ITEMS (USUALLY KEPT IN CAR):

FRS radios
Emergency phone numbers
Change of clothes
Road maps
Cave directions and description
Garbage bags
Towel
Extra food and water
Water for washing after trip

OPTIONAL IN-CAVE ITEMS:

Map of cave
Camera and case
Eyeglass retainer
Compass
Chemical light stick
Pencils
Notebook with waterproof paper
Duct tape
Zip-lock bags
Pocket knife
Folding multi-tool
Hand-line and carabineer
Watch
Candles & waterproof matches
Extra clothing / hat
First aid kit
Hard case for cell phone storage
Heat packs, the type that are shaken to activate.
Elbow pads

THINGS YOU MAY WANT TO BRING TO (BUT NOT IN) THE CAVE:

Duffle bag to carry gear to cave
Toilet paper
Drinking water and snacks
Sunglasses
Bug and tick repellent
GPS to get to and from the cave

DETAILS

CLOTHING and PERSONAL GEAR:

- A helmet is a must due to the likelihood of whacking your head against the cave rock. A real climbing or caving helmet is rugged, lightweight, has a good range of sizing adjustments, a good chinstrap, and has attachment points for a headlamp. A construction-type or bicycle helmet is OK for beginners if it has a chinstrap and does not have a brim. A headlamp can be attached with duct tape.
- A headlamp, with LED lighting, using 3 or 4 AA batteries. This should be of good quality and easy to operate when wearing caving gloves. Adjustable brightness is useful; colored and flashing lights are not.
- The basic rule is to have at least three independent light sources. A headlamp mounted to your helmet is your primary light. A second light could be a spare headlamp carried in your pack. A third may be a flashlight in a secure inside pocket or on a lanyard around your neck. Keeping the light sources in

different places (helmet, pack, on lanyard) means that if you get separated from some of your equipment you will not lose all your light sources.

- How easily people get cold varies with factors like fitness, body weight and the degree of fat, age, and metabolism. Because hypothermia is a hazard of caving in the Northeast, it is important to be properly prepared. Clothing requirements will vary with the temperature of the cave, duration of the trip, degree of activity, and how wet you get. Northeastern caves are in the upper 40s, with almost 100% humidity.
- "Polypro" (polypropylene) long underwear is one of the most important items for comfortable caving. A property of synthetic fabrics like polypropylene is that they stay warm when wet.
- A middle layer could be loose synthetic jogging pants and a synthetic shirt or sweatshirt.
- The outer layer could be a cotton/poly blend coverall, which keeps cave dirt from getting to you where your shirt and pants meet. Avoid cotton for anything but this outermost layer.
- Wool or polypropylene/wool blend socks works well. If you're going to walk in water, 1/8" (3mm) neoprene socks are warm and comfortable. Trim your toenails as they will take a beating.
- Construction or hiking boots with lug (not smooth) soles are fine.
- Knee pads can save your knees in our caves. Elbow pads are also helpful when there's a lot of crawling to do. Cheap basketball type knee or elbow pads are thin, soft, and flexible and work better than those with hard parts or thick padding. Wear the knee pads between polypro long underwear and the next layer of clothing. This prevents them from getting snagged while crawling.
- You'll probably want to wear a pair of gloves to protect your hands from abrasion and add a little warmth. You might opt not to wear gloves when it's warm, but your hands will probably get scratched up. Lightweight synthetic gloves with a tough rubber-like coating work well.
- A zip-lock bag to hold your wallet. You may want to put this in a zippered pocket or inside your cave pack. Be sure it can't fall out. Car keys can be put inside your cave pack and tied to the inside of the pack. Keys may be left outside near the car under a rock, but be sure to show others in your group where it is in case they get to the car before you and want to get to their clean clothes. Plus, having witnesses ensures that keys can be found in the dark when the rocks all look the same.
- A small, high-quality flashlight carried on your person in such a way that it will not get lost (for example by falling out of your pocket). A lanyard around your neck works well, but be sure to position the lanyard so it won't get snagged in the cave. If your primary caving light has a hip-mounted battery pack, be certain the lanyard won't be trapped beneath it.

YOUR CAVE PACK:

- You will need a pack to carry your in-cave gear. It should have a shoulder strap so your hands are free for climbing. At times it may be carried in a hand or pushed in front of you when negotiating tight places. It should be very flexible and easy to open and close. A small daypack or a belt pack (aka fanny pack) usually works. The simpler and stronger the better. What is not needed are outside pockets that don't zip or securely buckle closed since these will collect mud, snag on rocks, and items in them will fall out. Be aware that zippers may fail under the abuse of caving. Heavy duty nylon packs made for caving, although expensive, are cost effective because of their durability.

THINGS THAT SHOULD BE IN YOUR CAVE PACK:

- A spare headlamp and a quality flashlight (or two) using two, three, or four AA cells. LED bulbs are preferred and have generally replaced incandescent bulbs. Do not bring any large flashlight (i.e., using D-cells or more than 2 C-cells). To prevent the lights from going on accidentally, wrap electrical tape around the switch. Spare headlamps are ideal.
- Spare batteries for lights. Bring enough backup batteries for your headlamp to supply light for at least twice as long as your planned trip. Most headlamps that operate on 4 AA cells will last 3 to 4 hours on a set of batteries, so bring one or two sets of spare batteries for your headlamp, and another set or two for other light sources. If your headlamp uses an incandescent bulb, pack a spare bulb. Note that cell and battery is used interchangeably here, and they must be a name brand alkaline type (no "heavy duty" or rechargeable).
- Food and water for you. Caving is hard work; you burn a lot of energy and may sweat when moving. Always bring something to drink and, unless you know you can go for twice as long as your planned trip length, bring some snacks. Sixteen ounces of fluid for every 4 hours of caving is a good starting point; some people need more, some less. Avoid very sweet or salty drinks. Bring snack food that you can

open and eat with dirty hands. Put the food in zip-lock bags and put the bags in a container, such as hard-plastic camera/gear case.

- A large garbage bag that can be fashioned into a makeshift poncho for dripping ceilings (just pop one hole for your head and a couple for your arms). They also can be worn to stay warm should you need to wait in a cave.

OPTIONAL IN-CAVE ITEMS:

- Extra clothing may be needed if the cave is colder or wetter than anticipated. Also, as we tire, we usually get colder, so more clothing is often needed at the end of a trip than the beginning. A polypro balaclava (a pullover hood) is compact and can be carried in your cave pack and worn as needed.
- The need for a cave map varies considerably. In small caves they can be helpful; in large caves they may be essential.
- Candles may be used as emergency light and heat sources. Waterproof matches and/or a lighter can be kept in a small plastic bottle with a screw on lid. Do not count candles as one of your three light sources.
- A small compass, when used with a map, can help keep you from getting lost in a cave. They work underground.
- A chemical light stick in a hard case is a robust, waterproof light source that does not depend on batteries. It can be used as general lighting (to save your other lights) for an unexpected stay. It should not be considered one of your three light sources. Most burn brightly for 8 hours and dimly for at least 20 hours.
- For emergency repairs you might want to pack a few feet of duct tape. Wrap the duct tape around a small wooden dowel or pencil. Also bring a few feet of shoelace-sized nylon cord.
- A small pocket knife and a folding multi-tool are both helpful for making general repairs.
- A hand-line and single locking carabineer (to aid in rigging) are useful for safely negotiating small drops. One-half inch tubular webbing or accessory cord makes good hand-line material, and 30 feet is the minimum useful length.
- A shockproof/waterproof watch will help to ensure that you start back when you planned to. Check the time before you go in.
- A camera. Be sure to protect it in a hard, waterproof case. Also, bring a small clean cloth to wipe off any mud or water that may get on it. Putting a heat pack in with the camera can keep the camera warmer than the cave to avoid fogged lenses. Consider how easy you can get to the camera, if it takes more than 10 seconds to get it out or put it back, you might not have time to get that quick shot and still stay with your group.
- If you wear glasses, a retaining strap is recommended. Use your own judgment when it comes to contact lenses.
- If you typically wear jewelry, you should consider that rings can be easily ruined; earrings can get snagged on the helmet.
- At least one person in your group should carry a small first aid kit into the cave on any but the shortest trips. The kit is primarily to treat cuts and protect wounds from infection until the person can exit the cave.
- Zip-lock bags are handy for storing all sorts of things, keeping them separate, clean and semi-dry. Quart, gallon, and two-gallon sizes all have their uses. Smaller ones for your wallet, food, extra batteries, cave map, odds and ends; larger ones for stuff like extra clothes. Double bag anything you don't want to get wet (still won't be guaranteed waterproof). Squeeze out extra air so bags don't pop open.

THINGS YOU MAY WANT TO BRING TO (BUT NOT IN) THE CAVE:

These items may be left in a bag next to the cave entrance or just inside the cave. They may vary considerably depending on various factors, such as weather conditions and difficulty/length of hike to the cave.

- A duffle bag or strong large garbage bag to carry these items to/from the cave, and to put your really muddy clothes into when you get out.
- Toilet paper. Better now than in the cave.
- Water, snacks. A nice treat when you get out that provides energy for the walk to the car, if necessary.
- A poncho or warm jacket. The trip from the cave to the car may be wet and/or cold. And you might be waiting by the entrance for everyone to exit.
- Sunglasses, bug and tick repellent.

- FRS radio. This may be useful to talk to those at the cars (who also have a FRS radio and know the channel to use) should an emergency arise. This method has mostly been replaced by cell phones, but not all areas have phone coverage. Exchanging cell phone number is advisable.

MISCELLANEOUS ITEMS:

- Before you leave for the trip, alert someone as to where you are going so that they can contact authorities in the event that you don't report back and you and other trip participants can't be contacted within a reasonable period of time after the planned trip ending.
- It is a good idea to have the numbers of a local cave rescue organization or local cavers. In case someone is injured, all parties should have access to these numbers and the car keys. What to do in case of emergency should be discussed prior to entering the cave. Depending on the situation, you might want to bring a copy of the phone numbers with you to the cave.
- Garbage bags to stow all your wet and muddy stuff for the ride home. A gallon of water to wash-up with, plus towels.
- A full change of clean clothes for the drive home.
- If the walk to the cave is long and the weather is hot, consider carrying a duffel bag or backpack containing your caving clothes and changing at the cave.
- Road maps and topo maps may be useful for getting to the cave and back or for traveling around any unexpected detours.
- Any written cave descriptions can be brought along for passengers to read during the car ride.
- FRS radios are useful for staying in contact when traveling in a car caravan and while looking for a cave parking area.
- Extra food and water in case of unexpected delays. You may, for example, have to wait a while before everyone has returned to the cars, or might find that you have to go back to the cave to retrieve some gear or otherwise assist.
- The driver may take the keys into the cave (well secured so they are not lost) or leave them near the car. Having access to the car keys will allow others to change their clothes in case of a delay on the part of the driver in getting there. It may also be of value in an emergency. A driver may also want to provide spare keys to be carried by someone else in the party. This way, anyone riding with you who gets back to the car before you can get to their clean clothes. Keys may be left outside near the car under a rock or by a tree, but sure to show others in your group where it is; having witnesses makes it more likely that someone will remember which rock it's under.

CAVING COURTESY

- Before the day of the trip, contact the trip leader and provide your full name and phone numbers.
- Arrive on time. If you can't, try to contact the trip leader or co-leader. Note that cell service is poor at some caves.
- Be very flexible in the time the trip will end. Planning an evening activity that requires others on the trip to leave the cave early, or skip a group pizza stop so you can get home won't go over well.
- Shop for food, batteries, beverages, etc. before the trip, not while driving to the meeting place, or (really bad...) between the meeting place and the cave.
- Prepare food in advance. Make sandwiches at home before the trip.
- Bring more food and water than you expect to need.
- Bring enough batteries so you don't have to borrow from others.
- Bring a large garbage bag to put your dirty clothes in, especially if not taking your own car.

ADDITIONAL INFORMATION:

National Speleological Society - Safety and Techniques website:
<http://www.caves.org/safety/techniques.shtml>

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