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Hello Everyone

My name is Walter. I have been involved with Wilderness SAR & Mountain Rescue Association Teams for 12 years. I saw your request/suggestions for Dale's question about SAR packs. When I got a computer, I sat down & wrote down my thoughts on SAR packs, preparations & lists. I have been updating these notes since then because you are always learning.

I have attached the first part of this paper to share with you all. If you'd like more, please let me know.

The Rescue Pack

One of the first questions anyone new to SAR asks is "What should I carry in my pack?" There is no set answer to that question since every callout is different in nature from the rest. Some SAR team's policy on Rescue packs has been to sustain the rescuer for 24 hours in the field without resupply. It sounds simple, but what if you find the victim (something we all want to find) & he's not equipped & has hypothermia? What happens now is that you must take care of the victim out of your pack until help arrives with extra gear. Obviously, you might not be able to do a very good job caring for the victim with just a fanny pack. Rescuers are depended on to carry the proper equipment to be effective as well as keep up with the other rescuers.

There are few people who can carry a 40+-lb. pack & be effective in the mountains. Experience can make a big difference as to what is carried in the pack. Also, sudden weather changes, difficult terrain & victims with serious injuries can place the rescuer in a rather awkward position. One way the rescuer can keep out of that position is to be prepared to cope with any situation that could come up before it happens. Assistance can not always be called in or it might take them a long time getting there so rescuer should be completely self-sufficient for the duration of the mission.

That does not mean you carry everything but the kitchen sink in your pack. Rather, ask yourself: "What kind of rescue person am I?" Only if you know yourself as a SAR member, can you buy equipment without wasting money. Equipment is relative. There is no perfect gear. No one backpack can fit everyone's back. Some gear is especially suited for an individual's need (or is it wants)

Going out & getting the most expensive hi-tech, hi-quality equipment without first sitting down & figuring out what you need is wasteful, expensive, over burdening & downright dumb. Before you run up the credit on the plastic, ask yourself the following questions:

- 1) What are my goals in SAR for the next 3-5 years?
- 2) How much time can I give or commit to SAR missions?
- 3) What time of the year is the majority of SAR missions?
- 4) In what area or terrain does your team do most of its missions & what is the area your Team is responsible for?
- 5) How frequently is your team called by another agency (another County sheriff or another Wilderness SAR team) to participate in Wilderness SAR operations?
- 6) How long does the typical mission lasts?

Answer these questions honestly & be specific; i.e. temperature, weather & terrain types. Once you've answered these questions & maybe have a couple of missions under your belt, you have a better idea what your needs are in the way of gear.

Almost every Wilderness SAR team in this country has a new member's training class or classes. Nine times out of Ten, one of those classes there will be a presentation on what that team considers the minimum required gear for their Wilderness SAR Team or that team will have a list of the minimum gear required in their training manuals. Take notes, ask questions. Make friends with one of the more experienced members of the Team you are joining, make friends with them, Take them out to lunch or go get some coffee & pick their brains on what works, what not works, what's acceptable to the group & what's not. Find out why they use a certain piece of gear over another. The lists included here contain minimum required field equipment, a recommended list & an optional list. Not all this equipment is needed

on every callout. The rescuer packs according to the callout & one's estimation of the situation while keeping in mind one's ability to carry the load & need to complete the mission as effectively & easily as possible:

Rescue Pack	Helmet	Hat
First Aid Kit	Sunglasses	Hiking Boots
Whistle	Rain wear	Signal mirror
Pocket knife	Space blanket	Trail tape
Pencil/notebook	waterproof matches	Firestarter
Map/compass	Headlamp	food for 24 hrs
Water (1 gal min.)	Goggles	Earplugs
2 heavy duty trash bags	Appropriate clothes for conditions	3 light sources
Spare bulbs and batteries		

The recommended list below contains equipment that can be carried or left behind depending on the situation or mission since it's not always needed. Experience, other team members or operations leader's can tell you when they're not needed.

Chemical Light sticks	Binoculars	Extra clothes
Folding saw	Stove/cook kit	Backpack tent or bivy bag
Fire starter	40' nylon webbing	Sleeping bag
Extra food & water	Ensolite pad	Technical gear

The optional list represents equipment that has been useful on a number of callouts. Some of the equipment is seasonal in nature (winter callouts) since demands are different. They involve searches in snow & freezing rain. Temperatures can be as low as 5 degrees in the mountains A five mile hike in the summer is an easy day hike, but with two to three feet of new snow on the ground can make the same hike a possible bivouac. The following list of additional equipment, plus equipment from the Rescue pack, might prove valuable for a winter callout:

Wool or pile pants & shirt	Gaiters	Down or synthetic jacket
2 pr gloves or mittens	Overmitts	Extra socks
Snowshoes or skis	Ski poles	

Remember, summer time in the desert means an extreme shift in temperatures. Average daytime temperatures in the desert can get as high as 110 degrees & nighttime lows around 70 degrees. Sleeping out in just regular clothes is not as comfortable as it might sound. However, as the temperature rises, so does the need for more water for your body. The hotter it is, the more water is needed since water is the primary medium used to get rid of excessive heat (sweating). Recent studies by the government indicate that people need more water than it was previously thought. In a desert environment, a person engaged in heavy labor (stokes evacuation) would need 10 to 12 quarts of water. Please remember that you as a rescuer might have to use your water on the victim as well.

In theory, a list like those above would be all a person just starting out in Wilderness Search & Rescue would need to get going. But this type of thing actually opens a sometimes-ugly can of worms that sort of looks like Malaria germs: Can I use my pack I use for school? Can I use my Cycling helmet? What do I put in my first aid kit? What do you mean I can't wear my Nike Lightweights? Ever see a person show up for a mission above Timberline with just one of those Plastic Emergency rain wear suits that come in a packet the size of a pack of cigarettes. My worst experience is responding to a callout in a desert region & one the members of the team (who says he's ex-SEAL team member) has only 2 quarts of water for 24 hours. (His water supply did not make it) Let's look at a couple of items that you need:

- Rescue Pack-There are two choices: External or internal frame (also known as softpacks). The majority of Wilderness SAR Personnel use internal frame packs. They seem to carry the load more effectively & have a lower center of gravity than external frames. They allow more freedom of movement than do external frames. Outside pockets are really appreciated. Some people tend to buy an Internal frame a little bit bigger than what they need so that they will be able to carry Tech kits, blanket bags, ropes, & Medical kits into the field without having to tie them onto your pack. Also remember that winter gear (extra clothes, stoves, etc.) are a little more bulky, so keep it in mind when you shop for a pack. A good way to find out what fits is to take the stuff that you are going to put in the pack with you to the store. Stuff it into the candidate & try it on.
- Helmet- The helmet is one of the most important pieces of gear you'll need in wilderness SAR. The question is what kind of helmet: climbing, biking, construction worker's model or a fireman's helmet. All were designed for specific purposes & are tested against safety standards applicable to what they are intended for. Out of all types, the climbing helmet suits the purposes of Wilderness SAR. I remember being involved with training Air Force Fire fighters at NORAD in confined space technical rescue operations. Our helmets gave us no problems while their firefighter helmets were banging into everything & giving them all sorts of fits. It's a good idea to affix reflective tape onto your helmet (you are only limited by your imagination). Be sure to put your name, address, phone number, blood type & any allergies to medications/special medical conditions you might have somewhere on the back of the helmet.
- Goggles & ear plugs-Very handy to have when working around, near, or in helicopters.
- Boots- Medium sturdy-lug sole mountaineering (vibram type) boots, not lightweights that fit well work in almost any type of terrain. They should be waterproof or have application of an after market waterproofing solution.
- Rain wear- A variety of lightweight & compact rainwear are available. Gore-Tex materials work fairly well but are expensive; coated nylon fabrics are waterproof & compact; plastic is cheap & tears easily; rubberized fabrics are waterproof but very heavy. Remember to choose bright colors.
- First Aid Kit-This is essential for personnel use. The size, quality & quantity depends on your medical qualification & experience. You could also have more than one so that it can be expanded for a wider range of situations.
- Map & Compass-They are a very good idea to have if you need to know where you are or to tell the Rescue Coordinator where you are.
- Signal mirror- Probably the best reusable signaling device ever made. The military glass signal mirrors with a built in sighting device are the best ones to have.
- Trail tape- Why do I need tape for the trail? Is it broken? No, this plastic flagging is great to mark trails for others to follow (like the team bringing the stokes in from off the trail), to mark off areas where clues have been found & to use as wind indicators for helicopters.
- Food & water-This depends on personnel preference & the situation of the mission. You should be able to eat your food without cooking. With water, it depends a lot on the season and/pr availability of it in the field. Two liter plastic coke bottles work very well as water containers & are cheap too.
- Space blankets- The reusable (plastic on one side, silver on the other) kind can be used not only as a blanket for the victim, but as a sunshade, windbreak, or to signal aircraft.
- Headlamp/light sources-This is another essential item that is unique to wilderness SAR. A headlamp frees your hands to do other things like answer the radio, or hold on for dear life from a wet greasy, slippery hold one night To those who are familiar with Murphy's law can understand. Things can easily go wrong & light at night is a big advantage. Not only have your headlamp with extra batteries & spare bulbs but have 2 other sources of light that can take a beating should your headlamp goes out. Another good idea is to have all 3 sources of light use the same type of battery. Chemical light sticks (Cyclume)-these are lightweight, use no batteries, maintenance free & can be stored indefinitely. They can be used to mark landing zones, belay stations, rescue personnel at night, or even a trail. A cyclume stick at the end of a 2-3 foot length of string, twirled around the head at night has the same effect as a signal mirror in the daytime.
- 40' of 1" tubular webbing-this can be worth it's weight in gold when the webbing in the tech kit does not reach far enough or when you don't have the tech kit.
- Ensolite pad-It's used for as planned/unplanned bivy. It can be used for extra padding, or to splint broken arms & legs.

- Technical gear-Your own personal tech kit. It can be just enough to do a safe rappel, set up a lower, anchor, or enough to lead 5.10 free climbing. Just be sure you know how to use it safely & properly before the mission. Folding saw/brush knife-For clearing brush for a helispot, or clearing a trail for a stokes, there is no better way. (Except maybe a flame-thrower or a D-8 Cat!)
- Bivy sack-This is for the planned/unplanned bivy.
- 2 Heavy duty trash bags-You might not think of yourselves as trash or trash bags as rescue equipment but they can be used as pack covers, emergency rain gear, bivouac sacks, ground cloths, liners for packs & even as trash bags.
- Whistle-a plastic police type whistle will travel a lot farther than the human voice & a lot longer in all types of terrain. Great for a signaling device & getting the attention of others.
- Extra clothing (warmies)- This is extra warm clothes just in case the temperature drops or the victim needs some extra clothes
- Firestarter- Used to help start fires when wood & kindling is hard to ignite. heximinetablets, fire ribbon, or candles work well.
- Binoculars-They are very effective on desert & mountain searches, particularly from a high point. Small light ones are very easy around the neck.
- Stove/cook kit-for those times where you might have to bivy & want some hot food or the victim needs some hot liquids or food.
- Extra food/water-If you see a callout requiring more food & water than you already have in your pack or the victim may need food or water, you won't have to go farther than your duffel bag to get it.
- Winter gear-Includes warm clothes, snow travel equipment & winter camping gear. Wool or pile clothing long gaiters, snow proof boots & windproof clothing really make winter search & rescue a lot easier & safer for the rescuer.

So now what do you do? You have a burning feeling in your wallet & you swear that you'll be doing Wilderness SAR volunteer work until The Lord Jesus comes back. No problem, let's talk about how to acquire this equipment as well as keeping the weight down. The first step of identifying what you need is already covered. We may need to do some more research. A good way is to collect catalogues. Most Outdoor gear manufactures put out some sort of hi-powered, hi-tech, large glossy catalog that describes the gear they sell, to do research at home, write to those companies for their catalogues. Most companies will send you their catalogues free, some ask for a small fee. The idea of this approach is to get reference material to understand all about outdoor gear so you can make a wise decision. Check out bookstores & libraries for books & magazines that explain the designs & characteristics of different materials used in outdoor gear as well as equipment designs. REI Co-op publishes many small pamphlets about various pieces of outdoor gear & provides a wealth of information.

When you're putting together your rescue pack, take an approach of "Functional Redundancy". That is, choosing gear with multiple uses whenever possible. An example would be the use of coated rain gear as a sleeping bag in the summer or a vapor barrier in a sleeping bag that will add extra warmth without extra weight. A nalgene water bottle or a small pot can also serve as a cup; a poncho with some candles makes a more effective bivy sack, or an improvised litter. A reusable space blanket can not only be used as a space blanket but as a ground cloth, shelter or to signal aircraft.

Just as important as functionality is the selection of gear appropriate for conditions you would be facing. Why purchase an expensive rain jacket & bib overalls that would be great above timberline when a backpacker's poncho might suit the needs better as well as being lighter in your pack as well as having multiple uses. Why carry two or three when one will do? I know a guy who used to carry 5 reusable space blankets. Remember, be resourceful. Methodically evaluate & reevaluate what you carry in your pack. One of the best ways I know of to lighten my pack is to dump out everything on the floor & pick up each item by the ears & look directly into it's eyes & demand, "Do I need you or Do I want You?" (If it answers, you need professional help) Separate them into two piles according to the answer & repack the "need" items back into the pack & stuff the rest into a duffel bag.

One more piece of advice on equipment: Please don't go overboard & buy the gear all at once. Constantly evaluate yourself. Learn something about design & materials of the equipment. Ask questions & most importantly, learn how to use your equipment before you go out on a mission. The time to learn survival skills is not on a callout, but during recreational hikes or Team training.

Part 2 - SAR Preparation

Experience has shown the best, fastest, way of preparing for a mission is to pack the gear into stuff sacks & then the stuff you will "need" into the rescue pack with the rest going into a duffel bag. Keep them together. A good idea to save time is to mark on the stuff sacks what the contents are along with your name & phone number. Gear like carabiners can be marked with colored plastic tape. Sorting gear after a mission goes much faster & easier when equipment is marked.

When the pager goes off, take your rescue pack & duffel bag. Use a checklist to avoid leaving something behind. Immediately after the mission, check, clean, restock & repack the rescue pack & duffel bag as soon as possible. When you get to rendezvous or Base camp, find out from the Operations or team leader what the situation is & repack the rescue pack by transferring the unneeded item out of the pack & into the duffel bag or vice versa very quickly. Sometimes you can get an idea of what will be needed by the terrain, the weather & by listening to a rescue radio or scanner on your way to the mission.

A quick way of finding out what is needed on a mission (because each one is different) is having answers to the following five considerations:

1. Time in the Field.
2. Local Resources
3. Resupply
4. Type of mission
5. Operational Pressure

With these questions answered, it will be easier to answer what to take & what to leave behind. Let's look at each consideration individually:

1. Time in the field- this question could be answered by you rather than the mission. You might have to be out in the field at a certain time so you can make it to work or other engagements. The callout can also dictate by how you go in to complete your mission. A technical evac can take longer than a walkout evac from the same place. The time of day can make a difference too. A callout at 5 PM in the spring can mean you may be getting back to your vehicle after dark.

2. Local Resources-What is the availability of water, shelter or food in the area you'll be operating in. an example is if you're hiking by a running stream. Why carry extra water when it's available right there. Maybe bring along a water filter & purification tablets. Another example would be if you are involved in a search for a child in an urban area, Do you need a full rescue pack? Why carry extra food when there is a convenience store around the corner?

3. Resupply-This is an iffy. You could very easily resupply if you make arrangements with Base Camp or the person who will pick you up at the end of the trail to take you back to Base Camp. It's something to think about.

4. Type of mission-This is almost self-explanatory. If you're on a medical team, you're carrying medical gear. If you're a 2nd Response team, you might be carrying additional medical gear the med team needs or you've got the stokes, backboard, blanket bag, or tech gear. If you're carrying that, then you can take as little personal gear as needed, but enough to be effective.

5. Operational Pressures-This can be a simple hike to Hutches Pool at night for some fisherman who are late getting out or a search for an 8 year old lost in the mountains when it's snowing. Weather, temperature, & time of day play a big part in this component.

Of course these considerations don't answer all the little details. Experience can answer those, but these guidelines can help you keep the pack weight down.

Packing it All Together.

There is another consideration- packing in such a way that if you happen to lose anything, you will still be able to survive & be effective as a rescuer. One of the best ways is never to leave your pack. Even if it is just off the road, you should take your pack with you. The other way is having "levels" of distribution for your equipment so that if you do leave your pack behind somewhere, you won't feel completely naked. These levels are:

1. Equipment carried on the person
2. Equipment frequently needed
3. Equipment carried in the backpack

Equipment Carried on the Person

This is where pockets come in handy. Considering shorts, pants, shirts & jackets, you will probably have several to play with. Try to develop a set routine as to what goes in which pocket. A rule of thumb for the sort of gear carried on the person is "an item critical to survival." This could include items like:

Whistle	Compass	Watch
Waterproof matches	pocket knife	Signal mirror
Notebook/pencil	Flashlight	handkerchief
Trash bags	small first aid kit	Emergency food

Other items that can be critical to a Wilderness SAR mission is a pocket mask, exam gloves, a radio, & maybe some J-tubes. It doesn't seem like a tall order, but keep in mind, that if you become separated from the rest of your team, you will still have enough to keep going. You could also become separated from your pack & find the victim.

Equipment Frequently needed

Vests, pockets & add on pockets to your pack play a big part in this level. Once again, try to establish an organization & a routine in laying it out. An example is a G.I. canteen & cover or maybe a nalgene water bottle & a nylon water carrier that fits easily on the hip belt of almost any packs. This way, you can drink water without having to stop & take off your pack. There are several different types of belt pockets & shoulder pouches on the market that can hold frequently needed items within reach. These items might include:

Chemical light sticks	Lip balm	Trail tape
Sunscreen	Flashlight	Insect repellent
Sunglasses	Personal medications (if any)	

Equipment carried in the backpack

Finally, we get to all those extras & backup supplies you'll need to keep going for the duration of the mission. It's amazing how much a pack will hold if you pack it neatly with everything in it's place, Remember, the most essential items should be more accessible (like the first aid kit & BP cuff). One thing to watch out for is the odds & ends on the outside of your pack. Not only can you look like a transient looking for a home, but also all those items tend to rattle, fall off, or get caught in branches & bushes. Each time you stop for a break or an overnight bivy, take the time to replenish water, food, etc, any thing that you've consumed on the move. That way, you'll gradually lighten your pack while maintaining your effectiveness as a Wilderness SAR member. Keep in mind that it is a good idea to pack non-waterproof items in waterproof bags.

Don't be afraid to ask other members what they carry, how they carry it, or what they carry on certain missions. Any members will be happy to answer your questions.

Part 3 - Notes on Wilderness Search & Rescue (WSAR)

Wilderness Search & Rescue has certain basic elements that affect all other aspects of WSAR. Learning these basic skills & keeping them in mind while you advance to the upper levels will speed your progression, & make it much safer. In the following paragraphs, I offer ten suggestions, which have helped me, learn & become a better SAR person.

First Tip: Exercise Good Judgement

Exercising good judgement isn't always easy. Sometimes you spend a tremendous amount of time & money just getting to get mission-ready not to mention the energy spent training. Good judgement not only comes from training sessions with the team, but from reading books, & taking various courses. One important area for gaining good judgement & is usually ignored by novice SAR Personnel is just getting outdoors & going on a simple hike or climbs. The usually excuse for not doing this is, "I won't be able to respond if I'm out hiking". But think of it this way. When is the right time to learn where a Satate Park, LCRA Recreational area, or trailhead is located: During training & recreational hikes, or when the page comes down for a real emergency.

There's an old mountain saying that goes like this: "Good judgement comes from experience &, unfortunately, experience usually comes from poor judgement."

Second Tip: Learn From Those Who Know (or who have made those mistakes)

Finding an individual will help you bring to form your own "Good Judgement" without having to make all your own mistakes. Learning from other will also increase your progression rate considerably.

Third Tip: Equipment is not everything!

Equipment in today's world of modern advances is still only as good as the people using it. Don't get caught up in the "equipment makes the SAR Tech" idea. Yes good equipment will make a difference, but your skills & understanding of SAR will make much more of a difference. Your goal should be maximum efficiency with a minimum of effort & equipment, & allowing for a reasonable safety margin. When purchasing equipment, take your time, ask others & see what works for them. If you can try their gear out, do so. Then make your purchase. Buy quality equipment the first time around. They don't come cheap, but it will end up paying you back many times over.

Fourth Tip: Find What Wilderness SAR is to You

The personal factor: What is it to you? To us, it is getting back to nature, gaining skills, self-reliance, comradeship, learning about yourself & the mountains, helping someone that is in a world of hurt. Some refer to it as gaining a Wilderness Citizenship. It's not a 'certification course'. A Wilderness Citizenship is something that has to be earned. It cannot be purchased for any amount of money. It is a process of expanding your horizons. Basically, a Wilderness Citizenship is gaining the skills, knowledge, & judgement required to safely travel into the wilderness day or night, winter or summer, good weather or bad & be at home.

Fifth Tip: Care For Your Body

There is at least one common denominator in mountaineering, that's the physical demands placed on your body. Body maintenance is probably one of the most overlooked aspects of mountaineering. Body maintenance entails everything from foot care, physical training, mental conditioning, personal hygiene & diet. A good physical conditioning program will make your outdoor trips safer & more enjoyable. While you are outdoors, you should drink 5 to 6 quarts of fluid a day. By doing this you will have the water to metabolize your food for energy; you have the fluid to excrete the chemicals that hinders & hurt your cells.

The right types of food can make quite a difference. A diet high in carbohydrates will help you perform better. They require less fluid for the body to use them & are usually well tolerated by the body. Learn about ventilating the body & keeping warm. It is much harder to warm a body than to cool it. If you are going to be hiking hard, strip down to a minimum. The body seems to perform better when it is slightly cool, rather than when it is slightly warm. Learn to pace yourself. Hike at slightly slower pace, where you concentrate on conserving energy & making your body perform efficiently (breathing, staying cool, but not too cool). Relax every muscle except the ones you absolutely need to use. By mastering the "mountain pace" you can travel all day long & still have an energy reserve.

Quality boots that fit properly & have been broken in are essential. I prefer a two- sock combination with a soft, 20% nylon, 80% wool, tube sock next to the skin, & a heavy rag wool or wool/polypro blend as an outer. Make sure you have plenty of room to wiggle your toes. Too many socks will lead to cold feet due to lack of circulation. If you're going to be stopping for a while, take off your boots & air out your feet. If you develop a hot spot (that feeling you get just before you get a blister) stop & tape it with moleskin. If you continue, you will end up wishing you had not.

Sixth Tip: Be Prepared.

Learning emergency skills is your moral responsibility to your partner. Over the past years, I have had to use my medical skills a number of times. There is nothing worse than to sit helplessly by while your partner is injured or suffering from some sort of sickness & not know how to help. Part of obtaining your Wilderness citizenship is achieving at least an emergency medical technical level.

Seventh Tip: Anticipate Potential Problems

Learn to think about things in the "what if?" mode. There are a couple of things to consider here. (1) The risk factor. That is, what is the possibility of something going wrong? (2) The risk potential. That is, if something does go wrong, how bad will it be?

In an emergency, the adrenaline shoots through your veins & you may take chances you normally wouldn't. Basically put, safety comes from understanding hazards.

Eighth Tip: Read Nature & Weather

Learn how to read the outdoors. Mother Nature has a story to tell for those of you who have learned to read it. Look around you. Why aren't there trees growing here, but they are trees on both sides of you? Look on the ground below you. Are there lots of broken up rocks? If so, this is an interesting story. Lenticular clouds are usually indicative of bad weather. There are many other things to read if one becomes skilled in the language of Nature. This skill of reading the outdoors is just one of many aspects of obtaining your wilderness citizenship.

Ninth Tip: Master the Technical Skills

While you're hanging out from a cliff is not the time to find out the bight of rope that passes through a figure 8 descender can catch the edge of the cliff & become a girth hitch. This used to be considered just an inconvenience, but there has been at least one death attributed to it. Before anyone does any technical rock climbing, other than in a well-structured class, they should have a good understanding of equipment & knots. They should be able to rappel & safely ascend a rope. They should be able to make sound anchor placements, as well as properly belay someone else.

Tenth Tip: Be self-sufficient

Sounds kind of crazy, doesn't it! Isn't self-sufficiency a part of WSAR? Of course it is, but there seems to be more people heading outdoors with the idea that "if something goes wrong, the Park Service (or Search & Rescue) will rescue us!" By thinking this way, these people can justify (more like rationalize) leaving gear behind or push a route that maybe over their heads or more dangerous than they are ready for. But even with this logic there are several problems:

1) A storm may prevent them (SAR) from coming to your aid. 2) They may be involved with another rescue. 3) What if you are on a SAR mission & YOU need to be rescued! How would that feel to you if you needed SAR to save you? How would that reflect on the Team if it appears on the Evening News? Personally, I would not go any more than 2 miles past the trailhead if I were not self-sufficient. When you go into the outdoors, you should assume that there is no one else in the whole world that can help you. Make your decisions accordingly. Travel & climb accordingly.

In Conclusion

We have discussed some of the fundamentals that will make Wilderness Search & Rescue safer & more enjoyable. By no means, however, should this be taken for the last word. The learning process is a continual progression. I hope that your progress in WSAR will be as enjoyable & rewarding as it has been for me.

Walter's Rules of Search & Rescue

1. Push yourself; desire to move faster. Get your butt into the gym & push it!
2. Get in GOOD physical condition by training.
3. Learn about local weather conditions to avoid being pinned down by storms.
4. Always have equipment/gear packed & "mission-ready" by the door or in your vehicle.
5. Have your gear packed in large duffel bags, plastic containers, whatever so that you can transfer everything from one vehicle to another without forgetting anything.
- 7) Have at least a half tank of gas in your vehicle at all times, especially during the weekends.
- 8) Carry a portable scanner so you can find out what's going on with the mission as you respond. Remember, the more you know about the mission, the more you will know what you'll need.
- 9) Never, ever, take your pager into the field when you are on a mission or training. 9 times out of 10, you will lose it.
- 10) On an average, you are usually 2 to 4% below fully hydration level. Carry a two Qt. Bottle & drink that while you are responding to a mission/training will guarantee a well hydrated level. Remember, if you have to go to the bathroom & the urine is clear, you are hydrated.
- 11) Eat & drink frequently to conserve energy. Rather than stopping & "brewing up" in cold weather, carry tea or soup in a vacuum bottle.
- 12) Carry light packs, Every mission is different. Learn from each mission. Remember: if you take bivouac equipment along, you will use it.
- 13) Arrange the pack so that the items you most likely will need in the course of a climb are easily available.
- 14) Avoid using complicated harnesses that require a tedious untying to remove or put on clothing.
- 15) Immediately after each & ever mission, restock & repack your equipment in your pack & vehicle before you go home.
- 16) Each and every mission is different. Keep your mind open & your ears alert. Use to opportunity to learn.

Part 4 – Equipment List

Well, here is the last part of my four part series. This part is the actually list of equipment I carry on ground SAR missions.

Some people would ask why didn't I just send the list first when a person on this newsgroup asked for one? My reason for sending the other three parts is this:

In all SAR groups & teams, they have an "approved" list of equipment that they want their members to carry. New members take this for granted & when wonder why the veterans in the group's

packs are lighter & smaller than theirs. Another reason is what I call a "Packing list" mentality. I have been (and still am) in the military for 16 years. The military uses packing lists to help new Soldiers prepare for deployments. Until recently, those packing lists have become the law & limit the Soldiers on what they really need to take. (I.e. nobody uses shelter halves any more). Packing lists can hinder & slow down the team on missions. I.e. do you really need to have a cook set in your pack when the mission is a car over the side?

My objective in the series is to teach 'What, When, Where, How & Why' to carry things in the pack to the new people. (Some who may not have any outdoor experience) A packing list is a very good idea, but team members should use it as a guideline. If your team makes a packing list mandatory, then make sure you enforce those standards on everyone in the team!!!! BTW when was the last time your team did a "spot check" pack check.

Enough of standing on the soap box. Let's get on with the last part:

Texas Search & Rescue

Vest

I have a vest that holds those items I frequently need in a SAR mission. This vest also serves, along with large camelback serves as my urban search pack. A commercial vest, G.I. Surplus survival vest or G.I. web gear will work for this purpose nicely. Each pocket of the vest holds a like group or 'kit' for a specific purpose:

Survival

Plastic bivy sack	2 Lg. leaf bag	50' of 550 cord
Matches/Candle Firestarter	Duct tape	Toilet paper
Signal mirror	Pocketknife	20' of 8lb-test fishing line
Water purification tablets	5' of 14 Ga. electrical wire	

Navigation

Compass	GPS	Trail tape
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First Aid Kit

Razor blade	Personal meds	Aspirin
2 Alcohol wipes	1 Towelette	1 cravat
2" tape	Antiseptic ointment	3"Ace wrap
two 2x2's	4 Benadryl tablets	Sm. Battle Dressing
Antacids	Mole skin	couple of quarters
2 Alcohol prep pads	Safety pins	2" Roller gauze
Tweezers	6Band-Aids	2 cotton swabs
Safety pins	Splinter Forceps	Various J-tubes
Pocket mask	Trauma scissors	Exam gloves
6 Pepto Bismol tablets		

Incidentals

Headlamp/Flashlight	Extra batteries	Measuring tape
Sunscreen	Insect repellent	Binoculars
2 Cylume sticks	Lip balm	Bandana
Goggles	4 zip lock bags	Pad & Pencil
2 Powerbars	2 Gu's	Roll of Lifesavers

All of the following 'kits' & 'bags' (in bold highlight) are packed into individual stuff sacks. A good idea to save time is to mark on the stuff sacks what the contents are along with your name & phone number. Gear like carabiners can be marked with colored plastic tape. Sorting gear after a mission goes much faster & easier when equipment is marked.

Clothes Bag

Hiking boots	Team shirt	Blue field pants
Spandex shorts	Wide brim hat	Gaiters
Orange shirt	Blue shorts	Anti-fog cleansing fluid
Retaining strap	Panic necklace	

Personal Bag

extra pair of socks	Emergency blanket	20' of webbing
Headover	Extra glasses	helmet
50' of 550 cord	Camera	small trowel
Poncho	12 hrs food (see below)	

Wet Weather bag

Cold Weather bag

B/P Cuff	G/T parka	Pile jacket
Bomber hat	G/T pants	Pile pants
Sweater	Stethoscope	Rain hat
2 pr sticky gloves	2 pr glove liners	winter gloves
2 pr socks and liners		

Tech kit #1

Harness	4 locking biners	PMP pulley
Slings (2x10' 2x 20')	Prusiks (2x5' 2x10')	Ascending system
Brake Bar rack	Work gloves	

Tech Kit #2

4 locking biners	Rescue pulley w/ biner	1/2 set of Tri-cams
1/2 set of stoppers	4 M/R links	Runners (2x20' 4x10')
Prusiks (2x5' 2x10')	PMP pulley w/ biner/prusiks	

Wilderness Trauma kit

6" Ace wrap	4 Small Battle Dressings	2 Med. Battle Dressings
1 Lg. Battle Dressings	Extraction collar	2 SAM splints
4 cravats	IV set	4-6 4x4's gauze
4 Roller Gauze	Non- Prescription pain meds	Oral Glucose
Bee sting kit		

Rope bag

50' of 8mm rope	3 HMS biners	Prusiks (1x5', 1x10")
1 Tri-link	12' of webbing	1 M/R link

Overnight Bivy Bag

G/T bivy sack	Rain fly	50' of 550 cord
4 tent stakes	Toothbrush/paste	pkg. of baby wipes
Spandex shorts		

24 hours Food

6 Power bars	Canteen cup	Hex heater
1 MRE	3 GU's	3 pkgs. fruit & nuts
2 rolls of lifesavers	3 Meal bars	3 MRE Beverage pkgs.

Warmie bag

Lt. Poly-pro underwear	2x sticky gloves	2x glove liners
G/T gloves	Fleece balaclava	Sweater
Field jacket liner		

Ok, we now have all these 'kits' & 'bags'. What do I do with them now? First, determine what you need & what you want. The 'need' items go into your pack & the 'want' items go into a duffel bag. I use an Army duffel bag for this.

Keep them together at home or in your car. When the pager goes off, take the pack & the duffel with you. When you get to the rendezvous, Operations or base camp, find out what the situation is & repack your rescue pack by transferring the unneeded items out of the pack & into the duffel bag or vice versa very quickly.

This system also saves time & eliminates forgetting anything if you have to car pool with someone or you're going out of town on an out-of-county mission. The following is how I have my gear packed so that if I have to carpool, or go out-of-county, it will only take me less than five minutes to transfer everything needed from my truck to someone else's car without forgetting anything.

Rescue Pack

Daypack	Personal bag	6 Qts. Water
Wet weather gear	Vest	B/P kit
Tracking stick	Helmet	Sm. Ensolite pad
Camelbak	6 Qts. Water	Rope bag
M.U.L.E.		

Duffel bag

Clothes bag	Hiking boots	Wide Brim hat
Maps	Trauma kit	Overnight bivy kit
Poncho liner	24 hrs food	Tech kit #1
Tech kit #2	Cold Weather bag	

Base Camp Duffel

The Base Camp Duffel bag is for those missions will be on a multi-day mission, out-of-county, or even out-of-state. It's for living in a Base Camp set up or just Car camping. It's not a mandatory item required by the Team. It's something I've learned by experience & it lives in the back of my truck just in case I get stranded somewhere.

Base Camp Duffel

Sleeping bag	Sleeping pad	Four Season Tent
3 days of food	Stove/ cook kit	AWOL Bag
Personal First Aid Kit	Emergency Kit	Toiletries
Reading matter		

Search & Rescue In Colorado & Arizona

Obviously, SAR missions in Colorado are not all like SAR missions in Texas. I still get a kick out of the Texans when they say they have mountains in Texas. I guess that's why you see a lot of cars with Texas license plates on I-70 in the winter in Colorado. Anyway, here is an old list of the equipment, & how it was packed when I was playing with the MRA teams there. Actually, there is little difference from the list for Colorado & Arizona. One would think that Arizona is just desert, but right outside of Tucson is a mountain range with an elevation of +8,000' with a ski resort! The highest elevation in Arizona is over 12,000':

Vest

Strobe light	Binocs	Plastic bivy bag
Compass	headlamp/flashlight	extra batteries
Firestarter	matches	Measuring tape
Signal mirror	Sunscreen	Trail tape
Whistle	bandana	lip balm
50' of 550 cord		

Warmie bag #1

Headover extra glasses
 rain hat 1 pr glove liners
 G-T overpants
 1 pr sticky gloves

Warmie bag #2

Mt. pants (pile) G-T Parka
 Pile sweater
 1 pr socks/liners Gaiters

Warmie bag #3 (combined with #1 in winter) Warmie bag #4 (used above timberline)

VBL socks
 Bomber hat

Pile jacket

Overboots
 Overmitts

1 pr winter gloves

Synthetic jacket
 Pile shirt

2 pr glove liners

face mask
 Pile bibs

G-T overbibs

1 pr gloves 2 pr socks/liners

Personal bag #1

1 Qt. Gorp Lg. Plastic bag Diagnostic kit
 Poncho 40' of 1" webbing Suction device Notebook/pencil Scapel
 Trauma scissors
 50' of 550 cord Space blanket B/P cuff Stethoscope
 Folding saw flashlight
 2 pr exam gloves

NP

airways Oral airways

				Lube
jelly	Pocket mask			
Small First aid kit			Mt First Aid kit	
Tweezers		Band-aids	Asprin	
Antacid				
2 cravets	Ace Bandage		Antihistamines	Band-aids
Four 4x4's		Sm. Battle Dressing	Butter-flyes	Sm.
Battle Dressing				
2" adhesive tape	Moleskin		Moleskin	Scapel
Asprin		Personal meds	antibacterial cream	
Scissors				
wire splint		Safety pins		Tweezers
roller gauze				
				Six
4x4's	2 cravets			
				Ace
wrap	Sam splint			
				2"
adhesive tape				
Wilderness Trauma kit				
6"Ace wrap		4 Small Battle Dressings	2 Med. Battle	
Dressings				
1 Lg. Battle Dressings	Extraction collar		2 SAM splints	
4 cravets	IV set			
4-6 4x4's gauze				
4 Roller Gauze	Non- Prescription pain meds		Oral Glucose	
Bee Sting kit				
Tech kit #1		Tech Kit #2	Mt. Tech Kit	
Rescue Harness		4 HMS biners	Mt. harness	2
pickets				
Helmet w/ goggles	Rescue pulley		2 Deadman	
2 pulleys				
Slings (2x10', 1x20')	Pick-off strap		Mt. ice axe (70cm)	
ice axe				
Prusiks (2x5', 2x10')	Mitchell system	Ice hammer		
2 ice screws				
Acending system	4 M/R's		2 ice pitons	
belay device				
Descender	9 runners (6x10', 3x20')		2 lg. runners	
(2x20') Ascend system				
PMP pulley w/ pruskis			4 shirt	
runners (4x10')	6 HMS biners			
4 HMS biners				
Prusiks (2x5', 2x10')				
Work gloves				
Rope bag				
50' of 8mm rope	3 HMS biners	Prusiks (1x5', 1x10")		
1 Tri-link	12' of webbing	1 M/R link		
Rescue Rations		3 Day Alpine Rations		
6 Power bars	Breakfast	Lunch	Dinner	

1 pk Fruit bits Oatmeal Jerky F-D meal
 1 gatoraide pkg Dried fruit Dried fruit 2
 Cliff bars
 1 MRE w/ heater 2 Cliff bars Gatoraide or 2 Cocoa mix
 2 ERG's ERG mix Exceed Carbo load mix
 1 Gatorload mix
 Candy bar
 6 Gu's

Stove/Cook Kit

Whisperlite stove MSR Stove stand 1 Qt. Fuel
 Matches Stove repair kit 1 1/2 Qt pot w/ lid
 Plastic spoon 2-3 Gatoraide packets 2-3 Instant cup-o-soups
 Insulated cup

Rescue pack Rescue Pack Hasty/Urban pack HART pack
 (Spring/Summer) (Winter) (Quick in/out) (High Altitude
 Rescue Team)
 Vest Vest Vest
 Vest Snow saw
 Warmie bag 1 Warmie bag 1 Warmie bag 1 Warmie bag 1 Ski
 poles
 Personal bag 1 Warmie bag 2 Personal bag 1 Warmie bag 2
 Snowshoes
 Rope bag Warmie bag 3 2 qts water
 Warmie bag 3 Crampons
 4 qts water Personal bag 1 Sm First aid kit
 Warmie bag 4 4 season tent
 Mt. Aid kit 4 Qts water
 Personal bag 1 Stove/cook set
 Diagnostic kit Mt. Aid kit
 4 qt. water Snow shovel
 Tech kit #1 Dignostic kit
 Mt. aid kit 3 day rations
 Tech kit #2 Ensolite pad
 Diagnostic kit Mt. Tech kit
 ensolite pad Stove/cook kit
 Plastic boots Sleepinng pad
 Rescue Rations Rescue rations
 Sleeping bag G-T bivy sack
 G-T bivy sack G-T bivy sack
 Avalanche beacon
 Road Flare
 Rope bag
 Tech kit #1
 Tech kit #2

Duffle bag
 G/T bivy sack Stove/accessories Alpine rations Down
 Sleeping bag
 Cook set Sleeping pad 4 Season Tent
 Tracking stick
 Water filter Warmie bag #2 Warmie bag #3 Warmie bag #4
 Mt. Tech kit Plastic boots Crampons
 Snow shovel

snow saw

snow shoes

ski poles

Thank you all for your patience & your comments. I will be leaving the Ground Sar list soon. Part of my unit (including me) will be deploying to Bosnia in September.

Take Care, & Berg Heil!!!

Walter