

THE SEARCH PACK

Your Search and Rescue pack is your life support system. What it contains, how it fits, and how much it weighs are all important pack factors. Consider also convenience, efficiency and necessity when choosing and equipping your pack. The following covers various aspects of the SAR pack and is based on the requirement of equipment and clothing necessary for 12 to 24 hours in the field. And, even though this may rarely be the case, the time period may include staying and possibly sleeping overnight. If you are serious about search and rescue, (and all of us are), this must also be a consideration. I conclude with some helpful tips gathered over the years from many sources.

Choosing a Pack

There are two types of packs, internal and external frame. An internal rides closer to you and is better for mountain climbing, varying terrain and off-trail travel. An external is better for long hikes on open, gradual terrain. An internal moves less due to a snug fit but thus does not allow air circulation around your back. An external is cooler but may move and even squeak. A good internal has compression straps which make the pack more compact. An external's design makes it easier to tie gear onto but make sure it is secure and doesn't move around. Small to medium internals often have side pockets that work well for water bottles but lack other external storage. Most external packs have side and back pockets that are nice for storing small, readily accessed gear. Most people start with an external but find need for an internal for specific activities. I like an external for general backpacking and an internal for search and rescue.

Make sure your pack fits well and is padded in the waist, back and shoulders. Good packs have torso length and shoulder strap adjustments. Try it on loaded with weight before you buy. All of us have some experience with a pack. When buying a new one consider what has worked for you and what you want in a pack. Remember, it is your most important item in terms of comfort so don't buy a cheap one.

A pack with a volume of 2000 to 4000 cu. in. will work best. The pack I carry most of the time has 2900 which may be large for some and too small for a few who really like to carry a lot. I have a larger internal that is 5500 cu. in. but weighs more and is really too large except for winter overnights or carrying other equipment. A pack weight of 25-30 pounds is comfortably possible for most of us. Carry 10 or 20 lbs. more and it becomes harder to move well during searches and you'll be more physically stressed (unless you're in great shape). If you haven't done any backpacking or carried 45 or more lbs. on a search you should do so on some short hikes before buying a big pack and loading it up. Borrow a larger pack from someone before buying one and realizing you really can't or don't want to ever carry 50 lbs. A pack loaded with lots of gear for any situation does no good if you can't carry it very far. Most sources advise carrying no more than 30% of your weight and that is relative to longer excursions with lots of equipment. Knowing you can carry more sometimes could be helpful, though. Having a larger pack available may be a benefit if a subject has been found and large or heavy gear is requested.

Seasonal Packs

You should develop two different pack contents relative to seasonal needs which I will call Moderate and Winter. (I'll use the term moderate instead of summer as it is more weather-realistic). The six-month ranges for these given below are variable and what you carry may be adjusted accordingly. You'll have transitional needs during fall and spring, warm summer searches at lower elevations, cold snowshoe searches, etc. Most of the differences in the two are clothes, so I have included clothing requirements here.

- **Moderate.**

Moderate is from April to September. Daytime temperatures may be hot or cool and nights range from warm to cold but above freezing. Rain is always a consideration. Freak snow may be encountered in early spring. Your Moderate Pack would include all essentials plus clothes. This would be a non-cotton inner top and bottom. The middle layer is an insulating top such as fleece, polypro or wool and bottoms of polypro or fleece, a change of socks and underwear and a pair of heavy socks. Outer layer is waterproof/breathable rain gear top and bottom. You could include a light down jacket or vest for maximum protection if you get cold even in moderate temperatures. Also have a hat and light gloves.

- **Winter.**

This is approximately October to March. Winter conditions expected anytime including cold days and below freezing nights. Snow may be falling or on the ground. Remember that you can hike during a winter day some places wearing spring clothing. During the night, though, the temperature will drop while you probably are not on the move, and conditions and necessary clothing dramatically change. Clothing for cold includes all moderate items above plus another first layer preferably heavy or expedition weight, a heavier middle layer and a stocking cap and warm gloves. The down jacket is also now a necessity.

Pack Contents

We've all seen gear lists. I have tried to further revise and include some specific items I think are important. Clothing is listed separately.

List 1: Essential Gear

a quality headlamp plus a second light source	pack cover
preferably another headlamp, be sure you have extra bulbs	ruler or straight edge
batteries for both light sources for 12 hours	Baby wipes for cleanliness (anti bacterial)
a quality orienteering compass plus a decent second whistle	trail tape and permanent marker
signaling mirror for day and Chem. Lights for night	<u>Reflective</u> orange or yellow vest
rain gear (breathable top and bottom is best) or poncho	Sunscreen and insect repellent
Large folding knife and or multi-tool (on belt or pocket)	toilet paper (in Ziploc of course)
first aid kit designed to fit your level of knowledge	general fix-it kit (see Tips section)
Matches/lighter/fire starter/candles	sunglasses
maps	2 garbage bags (have many uses other than garbage)
small rope(550 cord and 10 to 20 ft. of tubular webbing, 50 ft. 9 mm. rope and biners for short rappels	Bandana or triangular bandage
watch	Hat, brimmed and pull over
leather gloves (a walking stick is also handy)	binocular or monocular
tarp or space blanket (I carry a tube tent and poncho liner)	F.R.S. or G.M.R.S. radio and batteries (walky-talkies)
Pencil, pen and small notebook	personal items: toiletries, medications, glasses
GPS (including manual) if you have one and can use it	water for 12 hours, usually 3 quarts and water purification tablets and or filter bottle
	food for 12 hours, nothing that will melt, spoil or crush

Food Ideas MREs work well; these are possibly the most complete and portable. Some others are jerky, dried fruit, nuts, peanut butter, cheese, packaged sausage, power bars, hard candy, canned chicken or tuna, canned fruit and if you have a stove, noodle mixes, instant rice, many hot possibilities.

List 2: Other recommended gear

These are seasonal or other items available to take in the field when necessary or to have when returning. Prioritize items you still need to purchase (GPS, climbing helmet, radio) over what you'll rarely use (bivy, water purifier).

additional food and water	Extra clothing in duffle bag
radio, spare battery	Folding shovel
sleeping pad: foam, Thermarest	Crampons or ice cleats
sleeping bag: light, heavy	small stove
Tarps for covering gear and shelter	cook kit
Larger first aid kit	climbing helmet, climbing harness, carabiners, rope and gloves
signal flares	additional maps
strobe light	Field shower items
small saw or axe (for clearing trail)	Snowshoes or cross country skis
spare pair of shoes or boots	warm food: soups, coffee (if a stove is available)

List 3: Clothing. Listed by season and layer, and including what is worn.

Moderate	Winter
Inner: Non-cotton top and bottom. T-shirts in summer	Inner: Non-cotton top and bottom preferably heavy weight plus an additional light top.
Middle: Insulating top of fleece, polypro or wool. Long sleeve shirt. Heavy duty pants.	Middle: Insulating top of fleece, polypro or wool.
Outer: Rain gear, additional layer of fleece or down if needed for cold temperatures.	Outer: Rain gear, additional layer of heavy fleece or wool or, preferably, a down jacket. Pants or winter bibs.
Miscellaneous: 2 pair of socks, inner and outer, leather gloves, light insulating gloves, brimmed hat, belt.	Miscellaneous: 2 pair of socks, inner and outer, leather gloves, heavy insulating gloves, brimmed hat, stocking hat, belt.
Heavy duty boots, water proof	Insulated waterproof boots

Boots

Boots are the last contact between you and the ground. All leather, Gore-tex lined or waterproofed hiking boots are best for our purposes. Boots with some nylon may breathe better but are not as waterproof or as protective from penetrables as all-leather. These can be worn year-round. Even in winter snow this type of boot is usually best. Stay away from heavy winter hunting boots or low-cut, heavy-soled running shoes that don't offer support. If you are using snowshoes Pac-boots may seem better, but your regular boots often work just as well and offer more support. Always wear a light pair of non-cotton socks in addition to your heavy outer wool or blend socks. The combination will help control blisters.

Overnight Packs

You must make the decision whether you want to pack more for an expected overnight. The later you go out on a search, the higher the possibility that you'll be out overnight. You probably won't spend more than one night out on a search, but anything can happen. If you are not searching you're probably with a subject or have decided to bed down. The gear you carry for this is relative to the time of year, location and elevation. In New Mexico at higher elevations, you need, at a minimum, something under you, something around you and sufficient clothing to be comfortable overnight. There are various combinations to consider for the two seasons that you would add to your basic pack.

- **Moderate**

The minimum under you should be a tarp or space blanket, with a light pad or Thermarest being even better. It would be best to include a sleeping bag with your pad. In rainy conditions a tent or bivy would keep you comfortable. (There are also specialized space blankets or plastic tubes that function as tents.) Whatever you use should be waterproof and able to protect you from runoff and leaks. Remember, though, that weight goes up as things get more comfortable. You have to carry your comfort. A waterproof tarp under and over you, plus the lightest pad and all or most of your clothing should allow you a decent night's sleep in moderate temperatures, especially if you are exhausted. Use your pack or stuff a bag for a pillow and don't wear sweat-soaked clothes to bed. Remember that sufficient clothing for the season's nighttime temperatures is standard for search and rescue.

- **Cold**

For temperatures at or below freezing and possibly snow on the ground, you need a pad and a warm sleeping bag. A bivy is recommended for a good night's sleep, although without rain that isn't as much of a necessity. A good pad, bag and bivy are heavy. And, a stove and warm food would be great to have on a cold night. Obviously, a winter overnight makes weight more of a consideration.

Loading and Wearing your Pack

If your pack has outside pockets or a large pocket in the top, use those for maps and smaller essentials. Vertical pockets on the side will keep your bottles from leaking. In the main compartment, pack heavier gear near your back with least used items like a first aid kit or tarp at the bottom with food, rain gear and other readily needed items at the top. Your pack should ride high on your hips to help support the weight. Make adjustments if necessary. If your pack has compression straps, cinch them down to confine the contents to a smaller bundle. Keep your pack fairly tight to your back but not too constrictive at your arms or shoulders. When carrying your pack, periodically lift it off your shoulders at the bottom with your hands. It will briefly help relieve the pressure. Practice carrying your pack around the house or go hiking, now is the time to trouble shoot problems and find out if you can carry it. Not on a search.

Helpful Additions

During a search you can't stop constantly to retrieve needed items out of your pack. A small chest or waist pocket that can hold your notebook, pencil, compass, mirror, whistle and other essentials is very helpful. A radio holster is also convenient since a radio needs to be accessible but is too heavy for your pants and you can't carry it in your hand. You can also get a remote clip-on microphone that will make operation even easier.

Water may be your most important provision. Hydrating while on the go is very efficient. A small water bottle holder on your pack or belt works well. Or try the new collapsible water bottles with a hose and bite valve. Attach the hose to the top of your pack and you can search and suck! You may find yourself going through your water faster, but you will be more likely to stay well hydrated -- sort of a positive problem. So if you can carry a little more weight, water should be your first consideration. Plan on taking at least 3 quarts, and don't forget purification tablets or a water purifier.

Organizing Your Stuff

You should always have your Essential Seasonal Pack ready to go and clothes you wear ready to put on. In addition, have another medium or large duffel bag that holds everything else. That would include extra food and water, boots or spare shoes, spare clothes and gear. At base camp you'll have time to quickly get your pack ready before a search and that will be easier with everything readily available.

Pack and Trail Tips

1. Pack everything possible into Ziploc bags. They're waterproof, strong (use freezer bags, quart and gallon size) and stay together even if stuffed. Gear is visible and can be marked and is easier to find and pack.
2. Even with Ziplocs it won't take long to realize you also need a pack cover for added protection in heavy rain. A garbage bag works but a cover designed for your size pack is quicker and easier.
3. Always wear something orange and visible during a search. A hat or shirt is the obvious but you should also wear a reflective orange or yellow vest to put on over your top. Your ability to be seen is crucial and wearing natural colors is, well, unnatural for us.
4. When was the last time you replenished your first aid kit? Think about adding any of the following: moleskin, snake bite kit, eye care kit, dental repair kit, second skin, razor blades, Chap Stick, small soap, sanitary napkins (make great absorbent bandages).
5. If you don't already, think about carrying a small pair of binoculars or even lighter monocular. Weight is always a factor but they could be valuable during a search.
6. Speaking of carrying too much, take time to go through everything in your pack and toss some items you have never used, or replace with something lighter or smaller. If you want further help in reducing your pack weight check out www.backpacking.net on the web.
7. If you wear reading glasses make sure you always carry a pair (or 2). Not being able to read maps or your GPS would be a problem.
8. If you want or need to take a stove, go for the lighter models with folding stove and fuel tabs. This is the lightest option when you only need a day of use. The tabs also make great fire starters.
9. Decent climbing helmets are not expensive and could save your life. They should always be worn when working around heights. When buying used climbing equipment, make sure you know its previous use and inspect it well.
10. Always keep a few bandanas stuffed into your pack. They are great for wiping away sweat, cooling off and lots more. Choose a bright color and it can be used for marking or signaling.
11. If you don't have breathable rain gear at some point you'll find yourself soaked inside as well as out. Gore-tex is considered the best but there are many decent clones on the market now that work well and cost less. Check Sportsman's Guide, Cheaper Then Dirt or other outdoor sources for sets as cheap as \$50 to \$100. If you're used to a clammy plastic poncho you'll be amazed at the difference.
12. Always carry an extra first-layer shirt. T-shirts in the heat and polypro in the winter will both get sweat-soaked after a good hike and changing into a dry one will help prevent hypothermia, as well as feel better. In the winter, hike in your lighter top and put on the heavy one when you stop. Always change out of a sweaty top when the sun goes down, even in the summer.
13. A small piece of thin, closed-cell foam could provide just enough comfort and insulation for a decent night's sleep. A rectangle as small as 15"x30" weighs just a few ounces and pads the important upper body from hips to shoulders. A small square also works great as a butt protector while sitting.
14. Remember to give a quick look around before leaving your break spot, especially if you took your pack off and opened it. You don't want to go back for something left behind, and you probably wouldn't find it anyway. This is especially true at night.
15. Always carry an extra compass. It is one of your most valuable essentials. Then learn how to use it.
16. Whistles also are necessary, cheap and light. Carry 2.
17. Look back periodically especially when you are traveling off trail. It will help familiarize you to the terrain in all directions and keep you on track if you come back the same way. (Also to keep track of those traveling behind you).

18. On a night search remember to bring items you'll need if you're out until morning: sunglasses, hat, sunscreen, T-shirt, etc.
19. Carry several different types of fire starters (Bic lighters, book matches, kitchen matches) in different places in your pack and on your person if one is lost or wet you will have another.
20. No matter how many times you go through and organize your pack, do you find yourself at base camp ready to go in the field and realize you forgot extra water or that new pair of gloves? Keep a list of items that you want to take always handy so that before you drive away you can quickly go through it and make sure you have everything. Keep another list of To Do and To Buy.
21. Use the folded edge of a map as a straight edge to draw a straight line.
22. Put together a general fixit kit of rubber bands, few feet of duct tape, some strong wire, safety pins, razor blade, needle and fishing line, heavy duty aluminum foil, etc.
23. Rope- 550 cord for general use and always carry 10 to 20 ft. of tubular webbing for tie-offs and anchors and 50 ft. of 9 mm. rope for short rappels or steep slopes. Also a couple of biners.
24. Carry a permanent marker for writing on flagging tape.
25. Make sure you have at least 4 extra batteries in addition to other minimum battery needs. You might be a light saver to a battery-less searcher.
26. Carry a small sack or pouch that can hold all the extra small stuff: lighter, candle, extra whistle and mirror, batteries, fixit kit, etc.
27. Don't forget to throw in some straps or small bungee cords of various lengths to tie things onto your pack. Or your pack onto a 4-wheeler.
28. Keep a pair of socks and tennis or other shoes in your duffel bag to change into after a search. Your feet will appreciate the comfort on the ride home.
29. Carry assorted colored Chem. Lights for identification, signaling and marking, red and green for I.D. and white for alternative light source. Attach a three foot piece of string to the chem. stick and twirl it around for signaling, hang one off the back of your pack so others can follow. (Or to find you after you fall down ;).
30. You have seen many references to non-cotton clothing in this guide, that's because in the winter, COTTON KILLS. Cotton loses its insulating qualities when it gets wet, whether from rain or sweat. Cotton also takes a long time to dry out. Wool or synthetic materials are much better suited to winter camping in cold weather conditions.
31. Carry a carpenters marking crayon in a light color for marking on trees and rocks.
32. Mark all of your gear with permanent marker so if lost, it can be returned or you need to identify it as yours, place an I.D. card in your pack with your name and contact information in case it's lost.
33. To really organize your pack keep a list of its contents on 3"x5" cards in the front pocket so you will remember what's in there at a glance. (You must keep it updated though).
34. Keep some anti bacterial wipes in your pack for a refreshing wipe down and to keep your hands clean. This is a must in the field, before eating and after using the bathroom.
35. Carry some small Zip Lock bags and or paper bags and rubber gloves for bagging evidence.
36. If you buy new gear try it at home in a realistic environment, make sure it works before you take it into the field. Don't assume it's all there or that it works. Also you get what you pay for (no made in China).
37. During a call-out take the time to collect your gear and dress properly, think about what you will be doing and what the weather and terrain is like. Please. Please. Please. Do not show up at a search in shorts and tennis shoes and no gear. **IT'S BETTER TO HAVE IT AND NOT NEED IT, THEN NEED IT AND NOT HAVE IT! ALWAYS.**

The bulk of this article came from CIBOLA S.A.R. Web site written by David Dixon. I have modified it to reflect our organization, location and situation. Just so credit given where credit is due.